ISSN 1821-1089

GODIŠNJI IZVEŠTAJ O NAUČNOISTRAŽIVAČKOJ DELATNOSTI 2014

- NAUČNOISTRAŽIVAČKI PROJEKTI -

ANNUAL REPORT ON SCIENTIFIC AND RESEARCH ACTIVITIES 2014

- RESEARCH AND DEVELOPMENT PROJECTS -

UNIVERZITET U NOVOM SADU
FAKULTET TEHNIČKIH NAUKA

UNIVERSITY OF NOVI SAD
FACULTY OF TECHNICAL SCIENCES

Novi Sad, Septembar 2015.

Godišnji izveštaj o naučnoistraživačkoj delatnosti 2014.
- NAUČNOISTRAŽIVAČKI PROJEKTI -
je rezultat rada na projektu:

"Razvoj i mogućnosti unapređenja nastave na Fakultetu tehničkih nauka"

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Prof. dr Rade Doroslovački, dekan

Projektni tim:

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2. Prof. dr Vladimir Katić
3. Prof. dr Srđan Kolaković
4. Prof. dr Dragan Šešlija
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13. Prof. dr Đorđe Lađinović
14. Prof. dr Darko Reba
15. Prof. dr Dragan Jovanović
16. Prof. dr Radoš Radivojević
17. Prof. dr Mila Stojaković
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19. Prof. dr Dragoljub Novaković
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21. Igor Zečević
22. dr Dragoljub Šević
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25. Petar Runjevac
26. Darko Čuturić

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Olivera Đuričić
Dragana Nikolić
Nemanja Dukić

Stručna i tehnička obrada:
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Dizajn korica:
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Predsednik Saveta za izdavačku delatnost:
Prof. dr Radoš Radivojević

Štampa:
Grafički centar – GRID
Fakultet tehničkih nauka Novi Sad

Tiraž
120

Annual report on scientific and research activities 2014.
- RESEARCH AND DEVELOPMENT PROJECTS -
is result of the project:

Development and possibilities of improving teaching quality at the Faculty of Technical Sciences

Project coordinator:
Prof. Dr. Rade Doroslovački, dean of the Faculty of Technical Sciences

Project team:

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6. Prof. dr Miodrag Hadžistević
7. Prof. dr Rastislav Šostakov
8. Prof. dr Vojin Grković
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Ivan Pintier

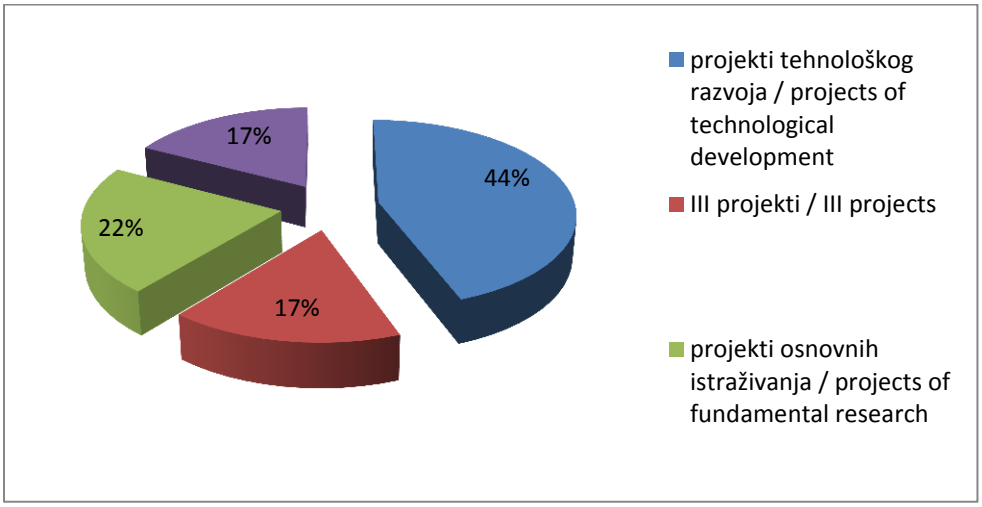
Printing approved by:
Publishing council, Faculty of Technical Sciences

Chairman of council for publishing:
Prof. Dr. Radoš Radivojević

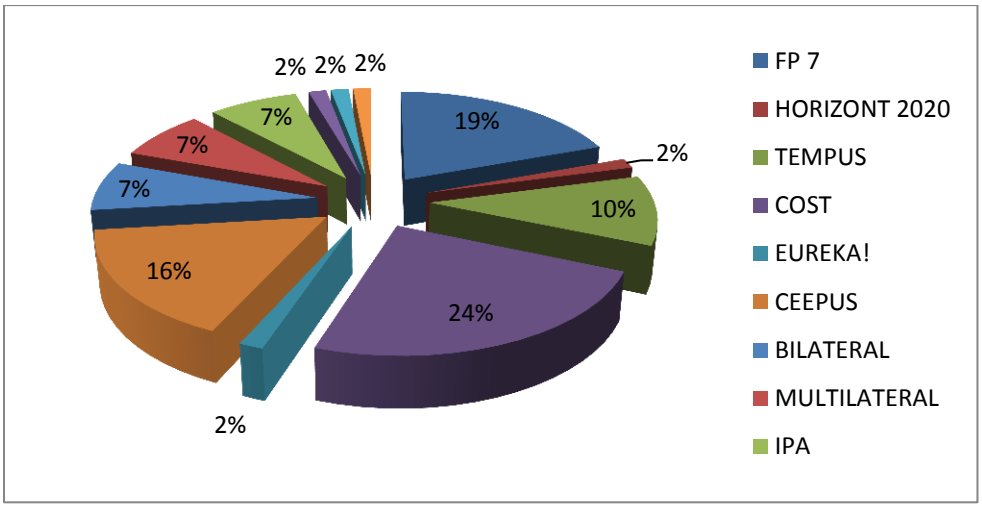
Printed by:
Graphic center – GRID
Faculty of Technical Sciences Novi Sad

Printing
120

Pregled nacionalnih projekata koji se realizuju na FTN
The overview of the national projects at the Faculty of Technical Sciences



Pregled međunarodnih projekata koji se realizuju na FTN
The overview of the international projects at the Faculty of Technical Sciences

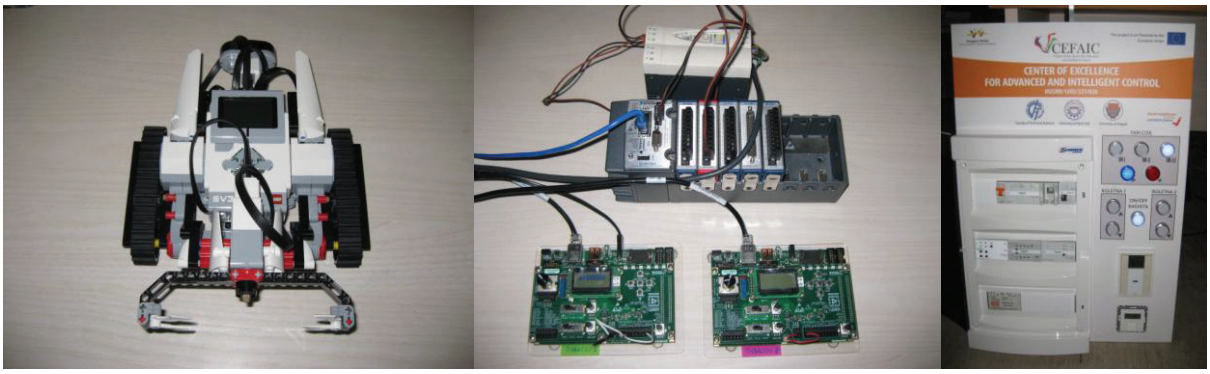


SADRŽAJ

Predgovor	8
Projekti tehnološkog razvoja	10
Projekti III	114
Projekti osnovnih istraživanja	168
Pokrajinski projekti	208
Međunarodni projekti	242

CONTENT

Preface	9
Projects of Technological Development	11
Projects III	115
Fundamental researches projects	169
Projects of the Autonomous Province of Vojvodina	209
International projects	243



Center of excellence for advanced and intelligent control Laboratory

Oprema nabavljena preko IPA projekta CEFAIC

Equipment purchased by IPA project CEFAIC

Nano and Microelectronics Laboratory

Oprema nabavljena preko evropskog FP7 projekta Apostille and BioSense

Equipment purchased by a International projects FP7 Apostille and BioSense

Nanoindenter G200

Calorimeter

PREDGOVOR

Veliko nam je zadovoljstvo što smo u mogućnosti da predstavimo „Godišnji izveštaj o naučnoistraživačkoj delatnosti za 2013. godinu“, sada drugi deo u kome su objedinjene informacije o naučnoistraživačkim projektima koji se realizuju na Fakultetu tehničkih nauka. S obzirom na važnost rada na naučnoistraživačkim projektima želeli smo da ih detaljnije predstavimo. Ove godine popularni godišnjak štampan je iz dva dela, prvog koji se odnosi na naučnoistraživačke rezultate i drugog o naučnoistraživačkim projektima.

Pred Vama je publikacija u kojoj su predstavljeni projekti koje finansira Ministarstvo prosvete, nauke i tehnološkog razvoja, Pokrajinski sekretarijat za nauku i tehnološki razvoj, Evropska unija kroz Sedmi okvirni program, TEMPUS program, IPA projekte prekogranične saradnje, i dr. Takođe, predstavljeni su i projekti multilateralne i bilateralne saradnje.

Zahvaljujemo se rukovodiocima i učesnicima na projektima, članovima Odbora za nauku i međunarodnu saradnju, Službi marketinga FTN i upravi Fakulteta.

PREFACE

It is our great pleasure to present you the second part of the „Annual report of scientific and research activities 2013“, now containing all information regarding currently active Research and Development (R&D) projects at the Faculty of Technical Sciences. Given the importance of the Research and Development projects and a necessity of their presentation, this year the annual report consists of two parts. The first part is containing information regarding the scientific and research results, and the second part contains list of R&D projects.

The following publication represents an overview of projects financed by: Ministry of Education, Science and Technological Development, Provincial Secretariat for Science and Technological Development, EU through the Seventh Framework Programme, TEMPUS Programme, IPA Cross-border Co-operation Programme and etc. The multilateral and bilateral projects are also presented.

We would like to thank all the Project coordinators and participants, members of Board for the Science and International Cooperation, International Office, Marketing Office and the Faculty management.

Ministarstvo za nauku i tehnološki razvoj
Republike Srbije

Projekti tehnološkog razvojna

TR

Ministry of Education, Science and Technology Development
Republic of Serbia

Projects of Technological Development

TD

Projekat tehnološkog razvoja – naziv:
ISTRAŽIVANJE I RAZVOJ METODA MODELIRANJA I POSTUPKA IZRADE DENTALNIH NADOKNADA PRIMENOM SAVREMENIH TEHNOLOGIJA I RAČUNAROM PODRŽANIH SISTEMA
Oznaka projekta / akronim:
TR 35020
Web:
Rukovodilac projekta:
Prof. dr Janko Hodolič, Fakultet tehničkih nauka
Rukovodilac projekta sa FTN:
Prof. dr Janko Hodolič
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj / primenjena
Opis projekta:
Stomatološku protetiku karakteriše izražena veza sa inženjerskim naukama i to pre svega sa tehnologijama proizvodnog mašinstva. Informaciona revolucija, koja je potpuno izmenila i proizvodno mašinstvo, nije zaobišla ni stomatološku protetiku. Tako se u tehnološki razvijenijim zemljama, poslednjih godina, čine značajni napori da se proces modeliranja i izrade dentalnih nadoknada unapredi primenom savremenih tehnologija i računarom podržanih sistema (3D-digitalizacija, CAD, RE, CAE, CAM, TPD, RP, CAQ) u cilju postizanja kvalitetnijih nadoknada i efikasnijeg procesa njihove izrade. U našoj zemlji se dentalne nadoknade još uvek dominantno izrađuju konvencionalnim postupkom koji je u najvećoj meri baziran na manuelnim veštinama pripreme/izrade i zbog toga u velikoj meri ugrožen mogućnošću pojave subjektivnih grešaka. Ljudski i infrastrukturni kapaciteti u oblasti mašinstva i stomatologije su motivisali istraživače iz 4 značajne institucije da koncipiraju ovaj projekat i da kroz intenzivnu naučno-istraživačku saradnju i rad na prilagođavanju i implementaciji savremenih tehnologija i CAx sistema drastično unaprede stanje u oblasti stomatološke protetike u R. Srbiji. Uspešna realizacija planiranih aktivnosti će ukupnu stomatološku intervenciju učiniti kvalitetnijom, efikasnijom i jeftinijom, otvoriti mogućnost za razvoj stomatološkog turizma i domaćih visoko-tehnoloških proizvoda u oblasti stomatološke protetike, što će omogućiti otvaranje novih radnih mesta za kadrove sa visokim obrazovanjem.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Fakultet tehničkih nauka u Novom Sadu, Medicinski fakultet u Novom Sadu, Mašinski fakultet u Beogradu, Stomatološki fakultet u Beogradu
Učesnici –istraživači sa FTN
Igor Budak, Đorđe Vukelić, Nenad Simeunović, Branko Štrbac, Aljoša Ivanišević, Igor Kačmarčik, Janko Hodolič, Mladomir Milutinović, Dragiša Vilotić, Ivan Matin, Ognjan Lužanin, Miroslav Plančak, Miodrag Hadžistević, Plavka Skakun, Dejan Movrin, Boris Agarski, Ana Petelj, Darko Milanković, Branislav Milanović, Branislava Crnobrnja, Milana Ilić, Željko Santoši
Oprema nabavljena iz projektnih sredstava

Project of Technological Development - Title
RESEARCH AND DEVELOPMENT OF MODELLING METHODS AND APPROACHES IN MANUFACTURING OF DENTAL RECOVERIES WITH THE APPLICATION OF MODERN TECHNOLOGIES AND COMPUTER AIDED SYSTEMS
Project code / Acronym:
TR 35020
Web site:
Grantholder
Professor Janko Hodolič, PhD - Faculty of Technical Sciences in Novi Sad
Coordinator FTS:
Professor Janko Hodolič, Dr.Sc.
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technological development / Applied
Summary:
Dental prosthetics is closely related to engineering science - before all to production engineering. Advances in computer technology which have radically changed engineering, also made impact on dental prosthetics. During recent years, industrially developed countries have made significant effort to advance the process of modelling and manufacture of dental replacements using state-of-the-art technologies and computer-aided systems (3-D digitization, CAD, RE, CAE, CAM, TPD, RP, CAQ) in order to increase quality and efficiency of their manufacture. In our country dental replacements are still manufactured using conventional methods which predominantly rely on manual skills for preparation/manufacture and are thus prone to subjective errors. Available human and infrastructure capacities in production engineering and stomatology have motivated researchers from four major institutions to propose this project. It is an attempt to intensify interdisciplinary scientific and research cooperation in order to adopt, adjust and implement state-of-the-art technologies and CAx systems for the purpose of radical advancement of dental prosthetics in Serbia. Successful realization of planned activities shall enhance quality and overall efficiency of dental interventions, lower the costs and open prospects for development of medical tourism and domestic high-tech products in the area of dental prosthetics. This shall open new jobs for highly educated people.
Duration:
2011-2015
***Partners**:*
Faculty of Technical Sciences in Novi Sad, Medical Faculty in Novi Sad, Faculty of Mechanical Engineering in Belgrade, Faculty of Dental Medicine in Belgarde
Researchers from the FTS:
Igor Budak, Đorđe Vukelić, Nenad Simeunović, Branko Štrbac, Aljoša Ivanišević, Igor Kačmarčik, Janko Hodolič, Mladomir Milutinović, Dragiša Vilotić, Ivan Matin, Ognjan Lužanin, Miroslav Plančak, Miodrag Hadžistević, Plavka Skakun, Dejan Movrin, Boris Agarski, Ana Petelj, Darko Milanković, Branislav Milanović, Branislava Crnobrnja, Milana Ilić, Željko Santoši
Equipment purchased from project funds:

Projekat tehnološkog razvoja – naziv:
INTELIGENTNI ROBOTSKI SISTEMI ZA EKSTREMNO DIVERZIFIKOVANU PROIZVODNJU
Oznaka projekta / akronim:
TR 35007
Web:
Rukovodilac projekta:
Prof. dr Petar B. Petrović, Mašinski fakultet u Beogradu
Rukovodilac projekta sa FTN:
Prof. dr Janko Hodolič
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj / primenjena
Rezime:
Predmet istraživanja projekta su novi koncepti proizvodnih sistema za ekstremno diverzivikovanu proizvodnju i mogućnosti njihove primene u domaćoj industriji. Ključno svojstvo ovog koncepta proizvodnje je ekstremna fleksibilnost, čija se svojstva približavaju ili izjednačavaju svojstvima čoveka u manuelnim sistemima. Ključni sadržaj ovog koncepta jeste inteligencija ugrađena u opremu i proizvodni sistem u celini. Postojeće stanje i trendovi u stvaranju generičkih znanja iz domena veštačke inteligencije ukazuju da izgradnja inteligentnih proizvodnih sistema praktično primenljivih u industrijskim uslovima nije realna u skorijoj budućnosti. U okviru ovog projekta istražuje se prelazno rešenje-hibridni sistem ostvaren kroz simbiotsku interakciju čoveka i mašine. U ovom sistemu robot ili druga automatska oprema izvršava repetitivne rutinske zadatke, a čovek, koristeći svoja senzorska svojstva i superiornu inteligenciju, obezbeđuje autonomnu funkciju sistema u realnom vremenu. Koncept će biti detaljno studiran u okvirima robotske montaže i robotskog zavarivanja, a simbiontska interakcija robota i čoveka ostvarena kroz tutorsku funkciju čoveka i nove mehanizme prenosa znanja i veština na robota. Ključni rezultati i hipoteze biće eksperimentalno verifikovani izgradnjom demonstracione instalacije na Mašinskom fakultatu i u proizvodnim pogonimačlanica konzorcijuma i članica poslovne interesne grupe; osnovni sadržaj će biti hibridni sistem simbiotski spregnut sa čovekom u izvršavanju zadatka.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Mašinski fakultet u Beogradu,Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Janko Hodolič, Đorđe Vukelić, Igor Budak, Miodrag Hadžistević
Oprema nabavljena iz projektnih sredstava

Project of Technological Development - Title
SMART ROBOTIC SYSTEMS FOR CUSTOMIZED MANUFACTURING
Project code / Acronym:
TR 35007
Web site:
Grantholder
Professor Petar B. Petrovic, Dr.Sc. Faculty of Mechanical Engineering in Belgrade
Coordinator FTS:
Professor Janko Hodolič, Dr.Sc.
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technological development / Applied
Summary:
Research area of the project is new concept of manufacturing systems for customized manufacturing and possibilities for its implementation in Serbian industry. The key property of this concept is extreme flexibility which comes close, or becomes equal to flexibility of human operator in manual systems. The key content of this concept is intelligence built into equipment and manufacturing system as a whole. Current state and trends in development of generic knowledge in AI domain show that building of intelligent manufacturing systems practically applicable in industrial conditions is not really feasible in near future. Within this project a transition solution-hybrid system realized trough symbiotic interaction of man and machine is researched. In this system robot or other automatic equipment performs repetitive routine tasks and man using his sensorial capabilities and superior intelligence provides autonomous functioning of the system. The concept will be studied in detail in the area of robotized assembly and robotized welding, and symbiotic interaction of robot and human carried out trough tutor function of man and new mechanisms for knowledge and skills transfer to robot. The key results and hypotheses will be experimentally verified trough building of demonstration installation at Faculty of Mech. Eng. and in manufacturing plants of consortium members and members of business interest group; basic content will be hybrid robotic system symbiotically coupled with man in task execution.
Duration:
2011-2015
***Partners**:*
Faculty of Mechanical Engineering in Belgrade, Faculty of Technical Sciences in Novi Sad
Researchers from the FTS:
Janko Hodolič, Đorđe Vukelić, Igor Budak, Miodrag Hadžistević
Equipment purchased from project funds:

Projekat tehnološkog razvoja – naziv:
SAVREMENI PRILOZI U RAZVOJU SPECIJALNIH REŠENJA ULEŽIŠTENJA U MAŠINSTVU I MEDICINSKOJ PROTETICI
Oznaka projekta / akronim:
TR 35025
Web:
Rukovodilac projekta:
Prof. dr Milan Zeljković, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Milan Zeljković
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
PREDMET ISTRAŽIVANJA: Analize uspešnosti i dužine životnog veka proizvoda na tržištu, poslednjih godina, ukazuju na potrebu razvojna visokospecijalizovanih proizvoda prilagođenih krajnjem korisniku u što je moguće kraćem roku. Pri tome, zbog dinamičnosti tržišta treba očekivati relativno kratak životni vek proizvoda na tržištu. U takvim uslovima se konkurentnost može postići samo primenom savremenih naučno istraživačkih i inženjerskih metoda u cilju brzog i efikasnog razvojna i izrade proizvoda. Aktivnosti u toku realizacije projekta obuhvataju primenu savremenih inženjerskih i naučno istraživačkih metoda u razvoju proizvoda, sa posebnim osvrtom na razvoj specijalnih sklopova uležištenja koja imaju primenu u mašinstvu (za uslove malo i srednjeserijske proizvodnje) i medicinskoj protetici (za uslove malih serija i sa maksimalnim prilagođavanjem pacijentu). CILJEVI ISTRAŽIVANJA: Osnovni ciljevi planiranih istraživanja se mogu posmatrati sa tri stanovišta: kroz unapređenja ležišta i ležajnih sklopova u vozilima i osovinskim sklopovima železničkih voznih sredstava, kroz unapređenja elemenata medicinske protetike i opšti naučno istraživački doprinos području razvojna proizvoda. RELEVANTNOST CILJEVA: Sa stanovišta aktuelnosti istraživačkih aktivnosti relevantnost postavljenih ciljeva se može posmatrati kroz: a) unapređenje postojećih i projektovanje novih proizvoda, b) osvajanje novih i poboljšanih tehnologija izrade c) računarsku simulaciju i eksperimentalna ispitivanja proizvoda iz grupe ležišta i elemenata medicinske protetike. Sa stanovišta šireg značaja istraživačke aktivnosti će omogućiti postizanje određenih naučnih rezultata i približavanje svetskim dostignućima. Osvajanjem industrijske proizvodnje usavršenih i novih konstrukcionih rešenja sklopova i komponenti stavljaju se našoj industriji na raspolaganje proizvodi sličnih karakteristika kao najpoznatijih svetskih proizvođača.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
FKL-AD iz Temerina, „Грујић i Grujić" doo, iz Novog Sada
Učesnici –istraživači sa FTN
Borojev, Lj., Navalušić, S., Todić, V., Tabaković, S., Milojević, Z., Antić, A., Živković, A., Gerić, K., Vićević, M., Lukić, D., Mlađenović, C., Blanuša, V., Bojanić, M., Jovičić, G., Vukman, J.
Oprema nabavljena iz projektnih sredstava

Project of Technological Development - Title
CONTEMPORARY APPROACHES TO THE DEVELOPMENT OF SPECIAL SOLUTIONS RELATED TO BEARING SUPPORTS IN MECHANICAL ENGINEERING AND MEDICAL PROSTHETICS
Project code / Acronym:
TR 35025
Web site:
Grantholder
Professor Milan Zeljković, PhD – Faculty of Technical Sciences in Novi Sad
Coordinator FTS:
Professor Milan Zeljković, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Applied
Summary:
RESEARCH OBJECTIVE: Latest analyses of successfulness and "lifespan" of the product on the market have shown that there is an urgent need for the development of the highly specialised products that are adapted for the end-user's needs, and developed in shortest time possible. Because of the market's dynamics it has to be expected that newly developed product's existence on such market would be much shorter than in the past. Competitiveness in such conditions is only to be achieved by application of the state-of -art scientific research and engineering methods for the purpose of fast and efficient product development and production. Activities during project realisation include application of contemporary engineering and scientific research methods in the process of the product development, highlighted on the development of special bearing assemblies applicable in mechanical engineering (for small and middle size batch production conditions) and medicine prosthetics (for small size batch production and well adapted to every patient's needs). AIMS OF THE RESEARCH: Basic aims of intended studies could be assessed from three viewpoints: developed bearings and bearing assemblies in vehicles and shaft assemblies, developed elements of medicine prosthetics and general scientific research contribution to the product development field. RELEVANCE OF AIMS OF THE PROJECT: From the view point of actuality of the research activities, relevance of to set goals could be assessed by: a) improvement of current and design of the new products, b) conquering new and improved processing technologies, c) computer simulation and experimental testing of the new products from the bearings and medicine prosthetics fields. From general point of view, research activities will enable achievement of specific scientific results as well as moving closer to world achievements. By conquering the processing industry field of the improved and new construction solutions of the assemblies and components, domestic industries will have products of similar characteristics as those created by well-known foreign manufacturers.
Duration:
2011-2015
***Partners**:*
FKL-AD, Temerin; „Grujić i Grujić" doo Novi Sad;
Researchers from the FTS:
Borojev, Lj., Navalušić, S., Todić, V., Tabaković, S., Milojević, Z., Antić, A., Živković, A., Gerić, K., Vićević, M., Lukić, D., Mlađenović, C., Blanuša, V., Bojanić, M., Jovičić, G., Vukman, J.
Equipment purchased from project funds:

Projekat tehnološkog razvoja – naziv:
PROJEKTOVANJE, RAZVOJ I PRIMENA NOVE GENERACIJE ADI MATERIJALA
Oznaka projekta / akronim:
TR 34015
Web:
Rukovodilac projekta:
Dr Olivera Erić, Institut „Kirilo Savić" Beograd
Rukovodilac projekta sa FTN:
Prof. emeritus dr Leposava Šiđanin
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Razvoj nove generacije ADI materijala i definisanje tehnologije potrebne za proizvodnju, predstavlja osnovni predmet istraživanja, odnosno cilj projekta. ADI (Austempered Ductile Iron) se dobija austemperovanjem nodularnog liva, pri čemu nastaje jedinstvena mikrostruktura – ausferit. Promenom parametara austemperovanja dobija se širok opseg osobina ADI-ja (visoka čvrstoća, duktilnost, žilavost loma, otpornost na zamor i habanje, dobra obradivost rezanjem). Širok opseg osobina, manja težina (za 10% od čelika) i niži troškovi proizvodnje (do 50%) omogućuje sve veću primenu ADI-ja u svetskoj industriji, posebno u auto industriji i poljoprivrednih mašina. Kako se od delova izrađenih od ADI-ja očekuje da rade u svim vremenskim uslovima (na otvorenom prostoru tokom cele godine) neophodno je poznavati i osobine ADI-ja na niskim temperaturama, kao i u kontaktu sa spoljnim faktorima (voda, ulje, zemlja). Najnovija svetska istraživanja ukazuju da ovi faktori mogu negativno uticati na performanse delova od ADI. Stoga, potrebno je razviti novu generaciju ADI-ja koja bi pored osobina koje zadovoljavaju svetske standarde, imala i adekvatne karakteristike na niskim temperaturama i u kontaktu sa različitim fluidima. Najnovija svetska predviđanja očekuju eksponencijalni rast proizvodnje ADI-ja sa sadašnjih 200 na 500 hiljada tona do 2020.g. To je još jedan dodatni razlog neophodnosti uvođenja tehnologije proizvodnje ADI materijala u livnice Srbije, čime bi se stvorila mogućnost izvoza na rastuće svetsko tržište.
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Institut „Kirilo Savić" - Beograd, Tehnološko-metalurški fakultet - Beograd, Fakultet tehničkih nauka - Novi Sad, Industrijski kombinat Guča a.d. - Guča
Učesnici –istraživači sa FTN
Leposava Šiđanin, Dragan Rajnović, Milica Damjanović, Borislav Savković
Oprema nabavljena iz projektnih sredstava

Project of Technological Development - Title
DESIGN, DEVELOPMENT AND IMPLEMENTATION OF THE NEW GENERATION OF ADI MATERIALS
Project code / Acronym:
TR 34015
Web site:
Grantholder
Olivera Erić, PhD - Institut „Kirilo Savić" Beograd
Coordinator FTS:
Professor emeritus Leposava Šiđanin, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technological Development
Summary:
The aim of this study is to develop a new generation of Austempered Ductile Iron (ADI) materials, as well as to determine the technology to produce them. The ADI is a real advanced material, which is produced by the process of austempering of ductile iron. By varying heat treatment parameters, a wide range of properties can be obtained. The ADI possesses a unique microstructure – ausferrite, which provides high strength, ductility, fracture toughness, wear and fatigue resistance and good machinability. A wide range of properties, lower weight (10% lower than steel) and lower production costs (up to 50%), provided various applications particularly in the automotive and agricultural machine industry. As components made from ADI are expected to operate in different environmental conditions, special attention is paid to low temperatures and corrosive conditions (water, oil, soil, etc.). Recent studies have shown that these factors have adverse effect on component performance (lesser strength and toughness). For that reason, there is a need for development of a new generation of ADIs, which, besides being compliant with international standards (EN, ISO, ASTM), will have improved properties both at low temperatures and in various environmental conditions. Furthermore, there is a necessity to enable Serbian foundries to become competitive on the growing ADI market, as latest predictions show an exponential increase in world ADI production/demand from 200000 to 500000 t until 2020.
Duration:
2011-2015
***Partners**:*
Institute „Kirilo Savić" - Belgrade, Faculty of Technology and Metallurgy - Belgrade, Faculty of Technical Sciences – Novi Sad, Industrial Complex Guča - Guča
Researchers from the FTS:
Leposava Šiđanin, Dragan Rajnović, Milica Damjanović, Borislav Savković
Equipment purchased from project funds:

Projekat tehnološkog razvoja – naziv:
ISTRAŽIVANJE BEZBEDNOSTI VOZILA KAO DELA KIBERNETSKOG SISTEMA: VOZAČ-VOZILO-OKRUŽENJE
Oznaka projekta / akronim:
TR 35041
Web:
Rukovodilac projekta:
Prof. dr Miroslav Demić, Fakultet inženjerskih nauka Kragujevac
Rukovodilac projekta sa FTN:
Prof. dr Ferenc Časnji
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Projekat "Istraživanje bezbednosti vozila kao dela sistema: "predstavlja multidisciplinarni pristup rešavanja kompleksnog problema bezbednosti vozila. Tokom njegove realizacije primenjivaće se najsavremeniji teorijsko-eksperimentalni pristupi u rešavanju bezbednosno-ekoloških parametara vozila kao dela kompleksnog sistema "Vozač-Vozilo-Okruženje". Posebna pažnja će biti posvećena utvrđivanju stvarnog stanja tih parametara voznog parka u Srbiji, zagađenju okoline od vozila, parametrima vozača koji značajnije utiču na bezbednost vozila i njegove ekološke parametre, transportu opasnih materija, alternativnim vrstama goriva i pogona koji će dovesti do manjeg zagađenja okoline, energetskoj efikasnosti motora i sl.
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Fakultet inženjerskih nauka Kragujevac, Fakultet tehničkih nauka – Novi Sad, Institut za nuklearne nauke Vinča
Učesnici –istraživači sa FTN
Dragan Ružić, Aleksandar Poznić, Boris Stojić, Jovan Dorić, Ferenc Časnji, Nenad Poznanović
Oprema nabavljena iz projektnih sredstava
Sound Level Meter 01dB BlueSolo Type 1 (nabavka opreme u toku) *Softver Mathcad Education - University Edition (10 pack) (nabavka opreme u toku)* *Kontroler VEMS 3,6 sa opremom (nabavka opreme u toku)* *Induktivni davači pomeranja HBM (nabavka opreme u toku)* *Softver NI LabView (nabavka opreme u toku)*

Project of Technological Development – Title
INVESTIGATION OF THE SAFETY OF THE VEHICLE AS PART OF CYBERNETIC SYSTEM: DRIVER-VEHICLE-ENVIRONMENT
Project code / Acronym:
TR 35041
Web site:
Grantholder
Professor dr Miroslav Demić, Faculty of Engineering Sciences, Kragujevac
Coordinator FTS:
Professor Ferenc Časnji, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technological Development
Summary:
The project "Investigation of the safety of the vehicle as part of cybernetic system: Driver-Vehicle-Environment" is a multidisciplinary approach to solving the complex problems of vehicle safety. During its implementation, contemporary theoretical and experimental approach in solving safety and environmental parameters of the vehicle as a part of a complex system "Driver-Vehicle-Environment" will be implemented. Special attention will be devoted to determining the state of the art of these parameters fleet in Serbia, the pollution from vehicles, the driver parameters that significantly affect the safety of the vehicle and its environmental parameters, the transport of dangerous substances, types of alternative fuels and drive that will lead to less environmental pollution, energy efficiency of engines and the like.
Duration:
2011-2015
Partners:
Faculty of Engineering Sciences Kragujevac, Faculty of Technical Sciences – Novi Sad, Vinča Institute of nuclear sciences
Researchers from the FTS:
Dragan Ružić, Aleksandar Poznić, Boris Stojić, Jovan Dorić, Ferenc Časnji, Nenad Poznanović
Equipment purchased from project funds:
Sound Level Meter BlueSolo Type 1 (purchasing in progress) *Software Mathcad Education – University Edition (purchasing in progress)* *Controller VEMS 3,6 with equipment (purchasing in progress)* *Inductive displacement transducers HBM (purchasing in progress)* *Software NI LabVIEW Full Development System (purchasing in progress)*

Projekat tehnološkog razvoja – naziv:
PRIMENA METODA VEŠTAČKE INTELIGENCIJE U ISTRAŽIVANJIMA I RAZVOJU PROIZVODNIH PROCESA
Oznaka projekta / akronim:
TR 35015
Web:
Rukovodilac projekta:
Prof. dr Pavel Kovač, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Pavel Kovač
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Današnja proizvodnja izvodi se na savremenim obradnim sistemima uz računarsku integraciju svih aktivnosti proizvodnje. Da bi tehnologije obrade materijala zadržale današnji veliki značaj, neophodno je permanentno istraživanje i unapređivanje postojećih i uvođenje novih postupaka obrade. Danas se to postiže kombinovanjem saznanja iz više naučnih disciplina. U toku izrade projekta planira se istraživanje i primena metoda i tehnika veštačke inteligencije koje će zajedno sa modeliranjem, simuliranjem i optimizacijom proizvodnih procesom dovesti do generisanja novih i boljih rešenja u toku proizvodnje. Prednosti ovih metoda su da se one mogu koristiti u svim oblastima industrijskog sistema, pa čak i kod veoma komplikovanih poslova i zahvata obradnih procesa. Njihovom primenom dolazi do razvojna inteligentnih obradnih sistema koji automatizovano obavljaju kompleksne proizvodne probleme, oslobađajući čoveka ne samo fizičkog već i intelektualnog rada, prepuštajući mu rad na ekspertnim i kreativnim poslovima. Integracija inteligentnih obradnih procesa sa računarom integrisanom proizvodnjom obezbeđuje efikasnu i brzu selekciju ulaznih podataka, u cilju postizanja najpovoljnijih izlaznih karakteristika procesa, zadržavajući poremećajne veličine u dozvoljenim granicama. Dolazi do povećanja proizvodnosti i fleksibilnosti obrade, smanjenja troškova obrade, održavanja visokog kvaliteta obrade i humanizacije radnog mesta.
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Fakultet tehničkih nauka u Novom Sadu, Tehnički fakultet u Čačku
Učesnici –istraživači sa FTN
Milenko Sekulić, Pavel Kovač, Branislav Savković, Marin Gostimirović, Dragan Rodić, Vladimir Pucovski
Oprema nabavljena iz projektnih sredstava

Project of Technological Development - Title
APPLICATION OF ARTIFICIAL INTELLIGENCE METHODS IN RESEARCH AND DEVELOPMENT OF PRODUCTION PROCESSES
Project code / Acronym:
TR 35015
Web site:
Grantholder
Professor Pavel Kovač, PhD – Faculty of Technical Sciences in Novi Sad
Coordinator FTS:
Prof. dr Pavel Kovač
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Fundamental research
Summary:
In the modern manufacturing processing is performed by removing material by modern machining systems with computer integration of all production activities. In order to maintain the current high importance, it is necessary to continuously study and improvement of existing and introduction of new processing procedures. Today this is achieved by combining knowledge from several scientific disciplines. In the course of project realization implementation of the research methods and techniques of artificial intelligence what will lead to the generation of new and better solutions during processing is planned. The advantages of these methods are that they can be used in all areas of industrial systems, even at very complex business processes and processing procedures. Their application leads to the development of intelligent automated productions systems that perform complex manufacturing problems, freeing the man, not only physical but also intellectual work, leaving his work at the expert and creative operations. The integration process with intelligent processing computer integrated manufacturing provides an efficient and rapid selection of input data, in order to achieve the most desirable characteristics of the output, keeping the size of disorder in acceptable limits. These leads to increased productivity and flexibility of processing, reduce processing costs, maintaining high-quality treatment and to humanize the workplace.
Duration:
2011-2015
***Partners**:*
Faculty of technical Sciences in Novi Sad, Technical Faculty Čačak
Researchers from the FTS:
Milenko Sekulić, Pavel Kovač, Branislav Savković, Marin Gostimirović, Dragan Rodić, Vladimir Pucovski
Equipment purchased from project funds:

Projekat tehnološkog razvoja – naziv:
SINTEZA DIJAMANTSKIH PREVLAKA IZ PLAMENA UGLJOVODONIKA TEHNIKOM RAVNOG PLAMENA
Oznaka projekta / akronim:
TR 34022
***Web*:**
-
Rukovodilac projekta:
Dr Miroljub Vilotijević
Rukovodilac projekta sa FTN:
Prof. Dr Branko Škorić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Projekat ima za cilj izradu i ispitivanje laboratorijskog prototipa za depoziciju dijamantnih prevlaka iz parne faze u metodi ravnog plamena. Istraživanje procesa depozicije će se sastojati pre svega od ispitivanja uticaja različitih polaznih ugljovodonika, kao i uvođenje trećeg gasa u gorivnu smešu na morfologiju depozita . Uzimajući u obzir moguću kasniju industrijsku primenu ove tehnike, staviće se akcenat na kontrolu termalnog fluksa prema substratu.
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Institut „Goša”-Beograd, Kriminalistička policijska akademija–Beograd, Fakultet tehničkoh nauka – Novi Sad
Učesnici –istraživači sa FTN
Prof. Dr Branko Škorić
Oprema nabavljena iz projektnih sredstava
-

Project of Technological Development – Title:
CVD DIAMOND FILMS FROM HYDROCARBONS IN THE FLAT FLAME METHOD
Project code / Acronym:
TR 34022
Web site:
-
Grantholder
Dr Miroljub Vilotijević
Coordinator FTS:
Prof. Dr Branko Škorić
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Development
Summary:
The aim of the project is the development and testing of laboratory prototypes for the deposition of diamond coatings the from apour phase applying the method of flat-flame. Research of the deposition process on the morphology of deposits will primarily consist of testing the influence of different hydrocarbons, as well as introducing a third gas into the fuel mixture.
Duration:
2011-2015
***Partners**:*
Institute Gosa, Police Academy to Belgrade, Faculty of Technical Sciences in Novi Sad
Researchers from the FTS:
Prof. Dr Branko Škorić
Equipment purchased from project funds:
-

Projekat tehnološkog razvoja – naziv:
UNAPREĐENJE KVALITETA TRAKTORA I MOBILNIH SISTEMA U CILJU POVEĆANJA KONKURENTNOSTI, OČUVANJA ZEMLJIŠTA I ŽIVOTNE SREDINE
Oznaka projekta / akronim:
TR 31046
Web:
Rukovodilac projekta:
Doc. dr Lazar Savin, Poljoprivredni fakultet u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Ferenc Časnji
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Predmeti istraživanja su kvalitet traktora i mobilnih sistema i očuvanje zemljišta. Prvi aspekt istraživanja je unapređenje konkurentnosti na domaćem i inostranom tržištu, drugi unapređenje bezbednosti rukovaoca i treći primena obnovljivih izvora energije. Rezultat ovih istraživanja treba da bude razvoj novih kvalitetnih lakih traktora i samohodnog transportera, koji su konkurentni, energetski i ekološki efikasni, a istovremeno i bezbedni za rad u polju i transportu. Izrada projekta zaštitnog rama i zatvorene traktorske kabine doprineće poboljšanju ergonomskih karakteristika i unapređenju konkurentnosti na tržištu. Rezultat istraživanja primene obnovljivih izvora energije je idejno rešenje i projekat pogona za proizvodnju biodizela različitih kapaciteta, uz upotrebu relevantnih proizvoda domaćih proizvođača opreme. Rezultati istraživanja na samohodnom transporteru obuvataju izradu koncepta, idejnog projekta i prototipa. Istraživanja u cilju očuvanja zemljišta doprineće razvoju novih ili poboljšanih tehničkih rešenja za domaću industriju, koja doprinose smanjenju troškova proizvodnje zdravstveno bezbedne hrane, očuvanju i poboljšanju svojstava zemljišta i očuvanju ekološke sredine. Unapređenje tehnike za manipulaciju žetvenim ostacima i stajnjakom, doprineće očuvanju zemljišta i povećanju ekonomičnosti proizvodnje. Definisaće se novi načini aplikacije i tehnička rešenja orošivača za smanjenje zemljišnog drifta kod višegodišnjih zasada.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Medicinski fakultet, Poljoprivredni fakultet, Fakultet tehničkih nauka – Univerziteta u Novom Sadu
Učesnici –istraživači sa FTN
Dragan Ružić, Aleksandar Poznić, Boris Stojić, Jovan Dorić, Ferenc Časnji, Nenad Poznanović
Oprema nabavljena iz projektnih sredstava
Tenzometrijska merna ćelija HBM S9M/2kN, Sferni zglob U2A/1T/ZGUW (par), Sotver MSC.Software University FEA and Motion Bundle 2010 (nabavka opreme u toku), Univerzalni akvizicioni sistem HBM QuantumX MX840 (nabavka opreme u toku), Sistem za indiciranje motora SUS AVL (nabavka opreme u toku), Softver AVL Boost (nabavka opreme u toku), Frekventni regulator Danfoss VLT 2800 (nabavka opreme u toku).

Project of Technological Development - Title
IMPROVEMENT OF THE QUALITY OF TRACTORS AND MOBILE SYSTEMS WITH THE AIM OF INCREASING COMPETITIVENESS AND PRESERVING SOIL AND ENVIRONMENT
Project code / Acronym:
TR 31046
Web site:
Grantholder
Associated professor Lazar Savin, Faculty of Agricultural in Novi Sad
Coordinator FTS:
Professor Ferenc Časnji
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technological Development
Summary:
The quality of tractors, mobile systems and soil conservation are the subject of the research. Tractors and mobile systems will be examined from several aspects. The first one is the improvement of the level of competitiveness on domestic and foreign market, the second one is driver's safety improvements and the last one is the use of renewable energy sources. The results of the researches should present the development of new quality light tractors and self-propelled transporter that are competitive, ecologically and power efficient and at the same time safe for field work and during transport. The design of roll bars and closed tractor cabin will contribute to the improvement of ergonomic characteristics and competitiveness on the market. The result of the research on renewable source energy application is a preliminary solution and design of the facility for the production of biodiesel of different capacities, along with the use of equipment produced by domestic manufacturers. The research results on the self-propelled transporter comprise concept, preliminary design and prototype construction. The researches conducted with the aim of soil conservation will contribute to the development of new and improved technical solution for domestic industry, which will further lead to the reduction of costs of safe food production, conservation and improvement of soil properties and preservation of ecological environment. Improvement of mechanization for harvest residues and livestock manure manipulation will contribute to soil conservation and an increase in economical production. The new ways of application and technical solutions for mist blowers will be defined in order to reduce soil drifts in the case of perennial seedlings.
Duration:
2011-2015
***Partners**:*
Faculty of Medicine, Faculty of Agricultural, Faculty of Technical Sciences Novi Sad
Researchers from the FTS:
Dragan Ružić, Aleksandar Poznić, Boris Stojić, Jovan Dorić, Ferenc Časnji, Nenad Poznanović
Equipment purchased from project funds:
Force sensor HBM S9M/2Kn, Spherical joint U2A/1T/ZGUW (couple, SC.Software University FEA and Motion Bundle 2010 (purchasing in progress), Universal data acquisition system HBM QuantumX MX840 (purchasing in progress), IC engine cycle indicating system AVL (purchasing in progress), Software AVL Boost (purchasing in progress), Inverter Drive Danfoss VLT2800 (purchasing in progress)

Projekat tehnološkog razvoja – naziv:
PRIMENA INFORMACIONIH TEHNOLOGIJA U LUKAMA SRBIJE – OD MONITORINGA MAŠINA DO UMREŽENOG SISTEMA SA EU OKRUŽENJEM
Project code / Acronym:
TR 35036
Web:
Rukovodilac projekta:
Prof. Dr ing. Milosav Georgijević, Fakultet tehničkih nauka
Rukovodilac projekta sa FTN:
Prof. dr ing. Milosav Georgijević
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Projekat ima za cilj da unapredi postojeće (zastarele) informacione sisteme luka na Dunavu u Srbiji i da omogući povezivanje – umrežavanje ovih sistema sa ostalima inostranim lukama na Dunavu. Konceptom i primerom izvođenja u Luci Novi Sad, treba da se povežu tokovi informacija od planiranja lučkih poslova do izvršilaca na mašine i uz monitoring povratni tok informacija ka menadžmentu. Sve treba da bude otvoren sistem radi umrežavanja celog Supply Chain-a.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Ekonomski fakultet u Subotici, Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Branislav Stevanov, Nikola Brkljač, Dragan Živanić, Ninoslav Zuber, Rastislav Šostakov, Zdravko Tešić, Jovan Vladić, Srđan Tegeltija, Atila Zelić
Oprema nabavljena iz projektnih sredstava
Do 17. juna 2012. godine nabavljena je: licernca za softver MD Boundle (FEA + Motion) i monitor. *Marta 2014. dobijen je deo odobrene merne opreme (4-kanalni prenosivi analizator vibracija i 16-kanalni sistem za permanentni nadzor vibracija) za projektom predviđeno kontinualno praćenje rada (akvizicija i analiza podataka o vibracijama) vitalnih pogonskih mehanizama (dizanja i obrtanja gornjeg stroja) predmetne lučke portalne dizalice u Luci Novi Sad..*

Project of Technological Development - Title
APPLICATION OF IT IN THE PORTS OF SERBIA – FROM MONITORING OF EQUIPMENT TO INTEGRATION IN THE EU SYSTEM
Project code / Acronym:
TR 35036
Web site:
Grantholder
Professor Milosav Georgijević, Dr.-Ing. – Faculty of Technical Sciences in Novi Sad
Coordinator FTS:
Professor Milosav Georgijević, Dr.-Ing.
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technological Development
Summary:
The main aim of the project is to improve existing (outdated) information systems in the Danube ports in Serbia and to enable their networking with other, foreign, ports on the Danube. Conceptually the system should connect all processes from port's operational planning and monitoring of equipment to reverse information flow to the management. The system should enable interconnecting the entire Supply Chain and to be networked with other ports on the Danube. Implementation of the innovated system is planned to be in the Port of Novi Sad.
Duration:
2011-2015
***Partners**:*
Faculty of Economics in Subotica, Faculty of Technical Sciences in Novi Sad
Researchers from the FTS:
Branislav Stevanov, Nikola Brkljač, Dragan Živanić, Ninoslav Zuber, Rastislav Šostakov, Zdravko Tešić, Jovan Vladić, Srđan Tegeltija, Atila Zelić
Equipment purchased from project funds:
Up to 17thof June 2012 licence for the MD Boundle (FEA + Motion) software plus one monitor has been purchased. *In March 2014th is a part of approved measurement equipment (4-channel portable vibration analyzer and 16-channel vibration permanent monitoring system) for permanent monitoring (vibration data acquisition and analysis) of relevant driving mechanisms (for hoisting and slewing) of the observed harbor crane in the port of Novi Sad is received, as planned in project.*

Projekat tehnološkog razvoja – naziv:
ISTRAŽIVANJE I RAZVOJ NOVE GENERACIJE VETROGENERATORA VISOKE ENERGETSKE EFIKASNOSTI
Oznaka projekta / akronim:
TR 35005
Web:
Rukovodilac projekta:
Prof. dr Vojislav Miltenović, Mašinski fakultet u Nišu
Rukovodilac projekta sa FTN:
Prof. dr Siniša Kuzmanović
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Istraživanja u oblasti proizvodnje električne energije primenom vetra, kao obnovljivog izvora energije, predstavljaju jedan od prioriteta istraživanja u sektoru energetike. Zbog prenosa snage putem klasičnih zupčastih multiplikatora sa konstantnim prenosnim odnosom, konstrukciona rešenja savremenih vetrogeneratora imaju veliki nedostatak koji se ogleda u nemogućnosti regulacije broja obrtaja rotora generatora u okviru optimalnog intervala. Regulacija broja obrtaja generatora putem zaokretanja lopatica turbine ima za posledicu smanjenje stepena korisnosti turbine. Realizacijom ovog projekta će se značajno unaprediti i proširiti istraživanja u oblasti prenosa snage kod vetrogeneratora primenom lančanih CVT prenosnika. Prenos snage kod vetrogeneratora putem CVT prenosnika zahteva redizajn pogonskog, energetskog i upravljačkog podsistema, te se predviđa proširenje istraživanja i na navedene podsisteme vetrogeneratora. Predviđen je i razvoj i istraživanje ostalih komponenti i podsistema vetrogeneratora koje je moguće proizvesti u Republici Srbiji. Primenom razvijenih komponenti omogućiće se povećanje godišnje proizvodnje električne energije do 10 %. Ključni rezultati projekta su: • kompletna konstrukciono tehnološka dokumentacija za proizvodnju familije vetrogeneratora snage 300 kW do 5 MW, • razvijen složeni sistem za upravljanje radom vetrogeneratora baziran na savremenim tipovima regulatora, • razvijen podsistem za nadzor i dijagnostiku stanja radne ispravnosti vitalnih komponenti vetrogeneratora.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Mašinski fakultet u Nišu, Elektronski fakultet u Nišu, Fakultet zaštite na radu u Nišu, Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Siniša Kuzmanović, Milan Rackov
Oprema nabavljena iz projektnih sredstava
-

Project of Technological Development - Title
RESEARCH AND DEVELOPMENT OF NEW GENERATION WIND TURBINES OF HIGH-ENERGY EFFICIENCY
Project code / Acronym:
TR 35005
Web site:
Grantholder
Professor Vojislav Miltenović, PhD - Faculty of Mechanical Engineering in Niš
Coordinator FTS:
Professor Siniša Kuzmanović, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technological Development
Summary:

Research in the field of electricity generation using wind, as a renewable source of energy, is one of the energy sector research priorities. Due to the power transfer through a gear multiplier with constant transmission ratio in modern wind turbines, their design have a huge shortage that is reflected unsatisfactory regulation of the generator rotor rpm within the optimum interval. Regulation of generator rotor rpm by changing blades pitch has the efficiency reduction of wind turbines as result, which can be avoided by application of CVT in wind turbine power transmission. The project realization will significantly enhance and expand research in the field of wind turbines power transmission by CVT. The transfer of power through wind turbines with CVT transmission requires redesign of drive train, energetic and control subsystems, so research will be expanded to mentioned subsystems also. Project proposal foresees and development of other wind turbine components and subsystems that can be produced in the Republic of Serbia. The application of developed components and subsystems will enable the increase in annual electricity production up to 10%.

The key results of the project are:

- complete technical documentation for manufacturing of wind turbine family with power rating 300 kW - 5 MW,
- developed subsystem for control of the process of wind energy conversion into electric energy,
- Developed subsystem for operation monitoring of vital components and subsystems of wind turbine.

Duration:
2011-2015
***Partners**:*
Faculty of Mechanical Engineering in Niš, Faculty of Electronic Engineering in Niš, Faculty of Occupational Safety in Niš, Faculty of Technical Sciences in Novi Sad
Researchers from the FTS:
Siniša Kuzmanović, Milan Rackov
Equipment purchased from project funds:
-

Projekat tehnološkog razvoja – naziv:
SUŠENJE VOĆA I POVRĆA IZ INTEGRALNE I ORGANSKE PROIZVODNJE KOMBINOVANOM TEHNOLOGIJOM
Oznaka projekta / akronim:
TR 31058
Web:
Rukovodilac projekta:
Prof. dr Mirko Babić, Poljoprivredni fakultet u Novom Sadu
Rukovodilac projekta sa FTN:
Doc. dr Maša Bukurov
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
GLAVNI CILJ POTPROJEKTA - Jedna od najcitiranijih definicija integralne proizvodnje (IFVP) je: „... ekonomična proizvodnja voća, koja daje prioritet ekološki bezbednim metodama, minimizaciji nepoželjnih uticaja sa strane i korišćenja agrohemija, povećavajući bezbednost okoline i ljudskog zdravlja“ (Cross, J.V., and E. Dickler, eds. 1994. Guidelines for Integrated Production of pome fruits in Europe: IOBC Technical Guideline III. IOBC/WPRS Bulletin 17(9):1–8). Uslovi organske proizvodnje su još strožiji, a u Srbiji su propisani Zakonom o organskoj proizvodnji (Sl. glasnik RS, br. 30/2010). Kvalitet dobijen ovakvim tehnologijama proizvodnje voća i povrća treba sačuvati u preradi. Glavni cilj ovog projekta je da se sopstvena originalna tehnologija KTS aplicira na integralnu i organsku proizvodnju voća i povrća. Istraživanje treba da utvrdi parametre procesa i proveri efekte alternativnih rešenja antioksidacione i antimikrobske zaštite sušenog voća, korišćenje obnovljivih izvora energije, adekvatne metode zaštite gotovih proizvoda od štetočina, očuvanje kvaliteta upakovanoh proizvoda, unapređenje organizacije i ekonomičnosti proizvodnje, racionalizaciju potrošnje energije i adekvatno rešenje automatske kontrole procesa. TEMATIKA ISTRAŽIVANJA - Prikaz planirane tematike istraživanja daje se po radnim zadacima: - Istraživanje kinetike osmotskog i konvektivnog sušenja za različite varijante predtretmana i različite parametre sušenje; - Uticaj različitih varijanti predtretmana na promene važnijih fizičkih osobina tokom tehnološkog procesa; - Unapređenje konstrukcija uređaja i automatske kontrole njihog rada u cilju očuvanja kvaliteta voća i povrća; - Uticaj modela proizvodnje korenastog povrća na fizičke osobine sušenih proizvoda; - Proizvodni, tržišni i ekonomski faktori proizvodnje sušenog voća i povrća; - Istraživanje razvića insekata na sušenom voću i povrću i mere borbe protiv njih; - Analiza postojanosti kvaliteta upakovanog sušenog voća u modifikovanoj atmosferi za različite ambalažne materijale; - Razvoj primene obnovljivih izvora energije; - Istraživanje reoloških modela različitih osmotskih rastvora, na bazi voćnih sirupa.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Poljoprivredni fakultet, Tehnološki fakultet, Fakultet tehničkih nauka – Univerziteta u Novom Sadu
Učesnici –istraživači sa FTN
Vladimir Bugarski, Marko Đurđević, Dragan Matić, Maša Bukurov, Siniša Bikić
Oprema nabavljena iz projektnih sredstava
Lap-top

Project of Technological Development - Title
COMBINED TECHNOLOGY OF INTEGRATED AND ORGANIC FRUIT AND VEGETABLE DRYING
Project code / Acronym:
TR 31058
Web site:
Grantholder
Professor Mirko Babić, PhD - Faculty of Agriculture
Coordinator FTS:
Doc. dr Maša Bukurov
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technological Development
Summary:
MAIN OBJECTIVE OF THE PROJECT - One of the most cited definition of IFV production is "…the economical production of high quality fruit, giving priority to ecologically safer methods, to minimizing the undesirable side effects and use of agrichemicals, enhancing the safety of the environment and human health." (Cross, J.V., and E. Dickler, eds. 1994. Guidelines for Integrated Production of pome fruits in Europe: IOBC Technical Guideline III. IOBC/WPRS Bulletin 17(9):1–8). The conditions for organics production are more severe and they are defined by the Law on Organic Production (Official Gazette of Republic of Serbia, No 30/2010). It is very important to preserve the obtained quality of fruit and vegetables in field production during further processing.The main objective of this project is to modify our own original technology CFDT and to apply it on integrated and organics fruit and vegetable production. Therefore, the research should identify the parameters of the processes and test alternative solutions of anti-oxidation and antimicrobial protection of dried fruit and vegetables, establish methods for renewable energy sources, promote secure method for final products pests protection, maintain the quality of packed final products, improve the management of production and economical aspect of production, promote energy consumption rationalization and provide equipped with automatic system control. THE AREAS OF THE RESEARCH **-** The detailed research plan is provided in a separate table; the plan results from the project objectives. The research activities are divided according to the following individual tasks: - Research of the kinetics of osmotic and convective drying with various pre-treatment processes and different level of relevant parameters, - Study of the effects of various pre-treatment procedures on physical properties changes of fruit and vegetable, - Improvement of equipment design and automatic process control in order to preserve initial bio-material quality, - Influence of roof-like vegetable production system on physical properties of dried products, - Production, market and economic factors of dried fruit and vegetable production, - Identification, monitoring and protection from insects in dried fruit and vegetables production, - Analysis of dried bio-materials quality, especially in different wrapping material under modified atmosphere, - Further research activities for introduction of new methods for renewable energy sources, - Research of rheological parameters of osmotic solutions (different fruit syrup). The material for all these tasks is fruit and vegetable from integrated and organics production.
Duration:
2011-2015
***Partners**:*
Faculty of Agriculture, Faculty of Technology, Faculty of Technical Sciences – University of Novi Sad
Researchers from the FTS:
Vladimir Bugarski, Marko Đurđević, Dragan Matić, Maša Bukurov, Siniša Bikić
Equipment purchased from project funds:
Lap-top

Projekat tehnološkog razvoja – naziv:
PRIMENA SAVREMENIH MERNIH I PRORAČUNSKIH TEHNIKA ZA IZUČAVANJE STRUJNIH PARAMETARA VENTILACIONIH SISTEMA NA MODELU ENERGETSKI IZUZETNO EFIKASNOG (PASIVNOG) OBJEKTA
Oznaka projekta / akronim:
TR 35046
Web:
Rukovodilac projekta:
Prof. dr Milan Lečić, Mašinski fakultet u Beogradu
Rukovodilac projekta sa FTN:
Mr Slobodan Tašin
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Osnovna istraživanja
Opis projekta:
Predmet projekta su kompleksna teorijska, eksperimentalna i numerička istraživanja složenog turbulentnog polja brzina vihornog strujanja iza radnih kola aksijalnih ventilatora i njihova korelacija sa geometrijskim i energetskim karakteristikama ventilatora, kao i primena rezultata istraživanja u ventilacionim sistemima energetski izuzetno efikasnih (pasivnih) objekata. Pasivna ventilacija objekata će takođe biti predmet istraživanja u projektu. Istraživanja u okviru projekta će biti podeljena u četiri faze. Prvu fazu čine istraživanja protočnih, energetskih i konstukcijskih karakteristika aksijalnih ventilatora, kao i statističkih karakteristikama vihornog turbulentnog strujanja na pritisnoj strani ventilatora, upotrebom najnovijih eksperimentalnih i numeričkih (CFD) metoda. U planu je ostvarivanje niza tehničkih rešenja za realizaciju ove faze istraživanja. Druga faza obuhvata analizu dinamike vihornog strujanja, polja deformacija i polja koherentnih vihornih struktura, kao i definisanje odgovarajućih teorijskih modela. Treći deo projekta predviđa istraživanje i ispitivanje postojećih ventilacionih sistema u energetski efikasnim objekatima. Izrada računarskog i realnog modela energetski efikasnog objekta predviđa se u četvrtom delu projekta. Planirana je izrada pokretnog objekta sa promenljivim konstrukcijskim i izolacionim karakteristikama. Na ovakvom objektu će biti primenjene savremene merne tehnike kao što su PIV (Particle Image Velocimetry), LDA (Laser Dopler Anemometry), HWA (Hot-wire Anemometriy, merenja termovizijskom kamerom i sl. Lokacija objekta će takođe biti menjana u cilju dobijanja podataka za svetsku bazu pasivnih objekata u Republici Srbiji. Na ovaj način biće sačinjene osnovne podloge za izgradnju energetski efikasnih (pasivnih) objekata.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Arhitektonski fakultet u Beogradu, Institut „Goša", Mašinski fakultet u Beogradu, Fakultet tehničkih nauka
Učesnici –istraživači sa FTN
Slobodan Tašin
Oprema nabavljena iz projektnih sredstava

Project of Technological Development - Title
APPLICATION OF NOVEL MEASUREMENT AND COMPUTATIONAL TECHNIQUES ON INVESTIGATION OF AIR FLOW IN VENTILATION SYSTEMS OF ENERGY EXTREMELY EFFICIENT ("PASSIVE") BUILDINGS
Project code / Acronym:
TR 35046
Web site:
Grantholder
Professor Milan Lečić, PhD - Faculty of Mechanical Engineering
Coordinator FTS:
Mr Slobodan Tašin
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Fundamental research
Summary:
Objects of investigations at this project are complex theoretical, experimental and numerical investigations of the complex turbulent velocity field structure in swirl flow field behind the axial fan impellers and their correlation to the fan geometrical and energy characteristics, as well as their application in ventilation systems of energy extremely efficient (passive) objects. Methods of object passive ventilation will also be investigated in the project. In this sense, investigations at the project will be organized in a four parts. First part would comprise research of flow, energy and design characteristics of the axial fans, as well as statistical characteristics of the turbulent swirl flow field on their pressure side by use of novel experimental and numerical (CFD) methods. It is planned to generate a number of technical solutions for realization of this complex investigation phase. The Second part would implement analysis of vortex dynamics, deformation fields and fields of coherent vortex structures as well as definition of appropriate theoretical models. The third part would involve investigation and testing of existing ventilation systems in energy efficient objects. Computer and real model design of the energy efficient object would be in the fourth part of the project. It is planned to design mobile object with changeable construction and insulation properties. Contemporary measuring techniques, such as PIV (Particle Image Velocimetry), LDA (Laser Doppler Anemometry), HWA (Hot-wire Anemometry), thermovision camera measurements, blower door tests and etc. will be employed at the object. Location of the object will also be changed in order to obtain data for the world basis of passive objects in the Republic of Serbia. In these way fundaments for construction of energy extremely efficient (passive) objects are made.
Duration:
2011-2015
***Partners**:*
Faculty of Arhitecture Belgrade, Institute „Gosa", Faculty of Mechanical Engineering in Belgrade, Faculty of Technical Sciences Novi Sad
Researchers from the FTS:
Slobodan Tašin
Equipment purchased from project funds:

Projekat tehnološkog razvoja – naziv:
ENERGETSKI SISTEMI U JAVNIM ZGRADAMA
Oznaka projekta / akronim:
TR 33058
***Web*:**
Rukovodilac projekta:
Docent dr Jovan Petrović, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Docent dr Jovan Petrović
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Snabdevanje javnih objekata energijom znatno opterećuje budžete svih nivoa vlasti. Sadašnji princip plaćanja ovih troškova se zasniva na tome što korisnik objekta preusmerava troškove na budžete vlasnika. U takvim okolnostima, korisnik uglavnom brine samo o tome da funkcija energetskih sistema ostvari osnovne funkcionalne zahteve. On nema suštinsku obavezu da se brine o energetskim sistemima u cilju otklanjanja nezadovoljavajućeg stanja. Taj deo odgovornosti je takođe u finansijskoj nadležnosti vlasnika objekata. Kako sada u organima vlasti ne postoje menadžeri energetike znatan broj javnih objekata nije adekvatno održavan, narušene su i najosnovnije tehničke i energetske performanse i njihovo korišćenje postaje sve skuplje i skuplje. To se posebno reflektuje na oblast energetske efikasnost ovih objekata. Zato su specifične potrošnje energije po kvadratnom metru i po nekoliko puta veće (2 do 5) nego u državama Evropske Unije. To je u današnjem energetskom i ekološkom trenutku nedopustivo. Sa jedne strane se, i inače nedostajuća, budžetska sredstva nepotrebno rasipaju, a istovremeno zadovoljenje energetskih potreba ovih objekata prouzrokuje povećane emisije gasova koji stvaraju efekat staklene bašte te se dodatno remeti postojeća klimatska ravnoteža. Osim toga energetski sistemi objekta postaju nepouzdani, zastarevaju, ne ispunjavaju sve mikroklimatske uslove na pravi način, mogu da imaju negativan uticaj na zdravstveno stanje korisnika objekata i slično. Energetski sistemi javnih objekata imaju niz zajedničkih elemenata. Oni su uglavnom namenjeni za ostvarivanje lokalne mikroklime u skladu sa namenom objekta (zagrevanje u zimskim uslovima i klimatizacija tokom letnjih meseci ili pak tokom cele godine). Sledeće važne funkcije su obezbeđenje kvalitetnog osvetljenja i rad informacionih tehnologija i drugih uređaja za odvijanje radnih aktivnosti u njima. Ostali energetski uređaji su u funkciji radnih specifičnosti pojedinih objekata i po pravilu su manji korisnici energije. Biće data procena ukupne energetske potrošnje javnih objekata u Srbiji i procena mogućih efekata unapređenja efikasnosti energetskih sistema javnih zgrada. Ta sličnost energetskih sistema i načina njihovog korišćenja omogućava programiranje aktivnosti i preduzimanje mera za promenu zatečenog stanja. To je moguće kroz popravku i osavremenjavanje postojećih tehnoloških rešenja, ali i njihovu zamenu sa novim, savremenim, efikasnijim rešenjima. Zbog toga je izučavanje tipskih korisničkih grupa objekata dobra osnova za sistemsku promenu sadašnjeg, sasvim sigurno, nezadovoljavajućeg stanja. U okviru ovog projekta bi se organizovala detaljna merenja na različitim tipovima energetske infrastrukture i time stekli uslovi za promociju tipskih mera i realizaciju tipskih projekata u cilju celokupnog poboljšanja snabdevanja energijom u javnim objektima. Detaljna merenja će se realizovati na objektima administracije, obrazovanja i zdravstva, jer su to najzastupljenije grupacije javnih objekata. Predložene mere će imati: funkcionalnu, tehničko-tehnološku, energetsku, ekonomsku, socijalnu i zdravstvenu dimenziju i na taj način biće osnova za izradu lokalnih planova za promenu zatečenog stanja.
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Vojin Grković, Milena Petković, Jovan Petrović, Damir Đaković, Strahil Gušavac, Aleksandar Erdeljan, Dušan Gvozdenac, Branka Gvozdenac Urošević, Srđan Vukmirović, Miroslav Kljajić, Aleksandar Anđelković, Milovan Medojević
Oprema nabavljena iz projektnih sredstava
U 2012 godini isporučena su tri laptop računara i u 2014 četiri desktop računara

Project of Technological Development - Title
ENERGY SYSTEMS IN PUBLIC BUILDINGS
Project code / Acronym:
TR 33058
Web site:
Grantholder
Associated professor Jovan Petrović, PhD – Faculty of Technical Sciences
Coordinator FTS:
Associated professor Jovan Petrović, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technological Development
Summary:
Energy supply of public buildings burdens considerably budgets at all levels of authorities. The present principle for payment of these costs is based on the fact that the building's beneficiary is redirecting costs to budgets of owners. In such circumstances, the beneficiary mostly cares only for the energy systems function in order to meet basic functional requirements. It does not have essential obligation to care for energy system for the purpose of improving unsatisfactory conditions. This part of responsibilities is also within the financial competence of the building's owner. Since there are no energy managers in the authorities, significant number of public buildings is not adequately maintained, and even some basic technical and energy performances are disturbed, thus making their utilization more an more expensive. This is particularly reflected in the field of energy efficiency of such buildings. Therefore, their specific consumption of energy per square meter is several times higher (2 do 5) than in the countries of the European Union. With the current energy and environmental awareness, this is unacceptable. On the one hand, otherwise scarce budgetary funds are needlessly spent and at the same time, satisfying energy requirements in such buildings causes increased emissions of gases which create green house effects and additionally disturb the existing climate equilibrium. Also, energy systems of buildings are becoming unreliable, obsolete and do not fulfill all microclimatic conditions in the best way and may have negative impact onto health of buildings' beneficiaries and the like. Energy systems of public buildings have a series of common elements. They are mostly intended for creating local microclimate in line with the purpose of the building (heating in winters and air conditioning in summers and sometimes during the whole year). Some other important functions concern provision of good quality lighting and running of information technologies and other devices for the performance of working activities therein. Other energy devices are in the function of work specific features of certain buildings and as a rule, they are not so energy intensive. The appraisal of overall energy consumption in public buildings of Serbia will be given, as well as the evaluation of possible effects of improving efficiencies of energy systems in public buildings. The similarity between energy systems and the way they are used facilitate programming of activities and undertaking measures to change the existing situation. This will be possible through repairs and modernization of existing technological solutions, but also through their replacement by new ones which are modern and more efficient. Therefore, computation of typical user groups of buildings is good basis for the systemic change of the present, undoubtedly unsatisfactory situation. Within this Project, detailed measurements will be organized for various types of energy infrastructure and thus attain conditions for the promotion of standard measures and implementation of standard projects in order to upgrade overall energy supply to public buildings. Detailed measurements will be carried out for buildings of administration, education and healthcare since they are most common groups of public buildings. The proposed measures will have: functional, technical-technological, energy, economic, social and health dimensions and in this way, they will provide grounds for drafting local plans aimed at changing the existing situation. It is proposed for the Project to last three years with the following structure of tasks per years.
Duration:
2011-2015
Partners:
Associated professor Jovan Petrović, PhD – Faculty of Technical Sciences
Researchers from the FTS:
Vojin Grković, Milena Petković, Jovan Petrović, Damir Đaković, Strahil Gušavac, Aleksandar Erdeljan, Dušan Gvozdenac, Branka Gvozdenac Urošević, Srđan Vukmirović, Miroslav Kljajić, Aleksandar Anđelković, Milovan Medojević
Equipment purchased from project funds:
Three laptops were delivered in 2012 and four desktops in 2014

Projekat tehnološkog razvoja – naziv:
RAZVOJ I IZGRADNJA DEMONSTRACIONOG POSTROJENJA ZA KOMBINOVANU PROIZVODNJU TOPLOTNE I ELEKTRIČNE ENERGIJE SA GASIFIKACIJOM BIOMASE
Oznaka projekta / akronim:
TR 33049
Web:
Rukovodilac projekta:
Prof. dr Goran Jenkes, Mašinski fakultet u Beogradu
Rukovodilac projekta sa FTN:
Prof. dr Vojin Grković
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Cilj projekta je da se na lokaciji korisnika u Šimanovcima izgradi demonstraciono *SNR* postrojenje sa gasifikacijom oklaska kao otpadne biomase, ali i da se testiraju mogućnosti gasifikacije i drugih vrsta komadne biomase koja se na ekonomski prihvatljiv način može pribaviti. Konačan rezultat rada na projektu treba da bude komercijalno primenljivo tehnološko rešenje *SNR* električne snage oko 200 kW koje zadovoljava kriterijume energetske efikasnosti i zaštite životne sredine. Projekat treba da definiše i način pokrivanja potreba za većim snagama kod budućih komercijalnih postrojenja. Projekat je podeljen na sledeće celine: 1. Izgradnja demonstracionog postrojenja. 2. Ispitivanje procesa gasifikacije i prečišćavanja gasa. 3. Rešenje sistema za korišćenje otpadne toplote obuhvata ispitivanje efikasnosti predloženih rešenja razmenjivača toplote i izbor adekvatnih rešenja za komercijalno postrojenje za: a) predgrevanje vazduha za gasogenerator; b) hlađenje generatorskog gasa i proizvodnju toplotne energije; v) korišćenje otpadne toplote iz energetske mašine. 4. Integrisanje gasifikacije biomase i kogeneracije. 5. Analiza funkcionalnosti opreme i predlog rešenja za komercijalno primenljiva tehnološka rešenja obuhvata procene adekvatnosti konstrukcionih rešenja pojedinih elemenata opreme primenjenih na demonstracionom postrojenju i predloge za unapređenja do nivoa kvaliteta i funkcionalnosti neophodnih za komercijalno postrojenje. 6. Ispitivanje uticaja *SNR* postrojenja na životnu sredinu obuhvatiće merenja emisije polutanata i izradu analize uticaja na životnu sredinu. 7. Analiza tehničkih i ekonomskih mogućnosti primene ovakvih postrojenja u Srbiji.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Mašinski fakultet u Beogradu, Fakultet tehničkih nauka u Novom Sadu, Šumarski fakultet u Beogradu
Učesnici –istraživači sa FTN
Vojin Grković, Dušan Gvozdenac, Branka Gvozdenac Urošević, Damir Đaković
Oprema nabavljena iz projektnih sredstava

Project of Technological Development – Title
DEVELOPMENT AND CONSTRUCTION OF A DEMONSTRATION PLANT FOR COMBINED HEAT AND ELECTRICITY FROM BIOMASS GASIFICATION
Project code / Acronym:
TR 33049
Web site:
Grantholder
Professor Goran Jankes, PhD, Faculty of Mechanical Engineering in Belgrade
Coordinator FTS:
Professor Vojin Grković, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technological Development
Summary:
The aim of the project is to be on-site to build a demonstrative Šimanovcima SNR plant with gasification of biomass as a cob, but also to test the possibility of gasification and other parts-of biomass in an economically sound manner can be obtained. The final result of the project should be commercially applicable technology solution SNR electric power of about 200 kW that meet the criteria of energy efficiency and environmental protection. The project aims to define a way of covering large forces near future commercial plants. The project is divided into the following sections: 1. The construction of a demonstration plant. 2. Investigation of coal gasification and gas purification. 3. The solution for the utilization of waste heat focused on the effectiveness of proposed solutions of the heat exchanger and the selection of appropriate solutions for the commercial plant: a) preheating air base bleed unit, b) cooling the generator gas and thermal energy, c) the use of waste heat from power equipment. 4. Integrating biomass gasification and cogeneration. 5. Analysis of the functionality of the equipment and the proposed solution for commercially applicable technology solutions include evaluating the adequacy of structural solutions some of the equipment applied in the demonstration plant and suggestions for improvements to the quality and functionality required for the commercial plant. 6. SNR Investigation of the effect of plants on the environment include measurements of the pollutants and the analysis of environmental impact. 7. Analysis of the technical and economic possibilities of such plants in Serbia.
Duration:
2011-2015
Partners:
Faculty of Technical Sciences in Novi Sad, Faculty of Mechanical Engineering in Belgrade, Faculty of Forestry in Belgrade
Researchers from the FTS:
Vojin Grković, Dušan Gvozdenac, Branka Gvozdenac Urošević, Damir Đaković
Equipment purchased from project funds:
-

Projekat tehnološkog razvoja – naziv:
RAZVOJ MULTIVARIJABILNIH METODA ZA ANALITIČKU PODRŠKU BIOMEDICINSKOJ DIJAGNOSTICI
Project code / Acronym:
TR 32040
Web:
Rukovodilac projekta:
Prof. dr Dragana Bajić
Rukovodilac projekta sa FTN:
Prof. dr Dragana Bajić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Predmet istraživanja je analitička podrška postojećoj biomedicinskoj opremi koja će omogićiti njeno efikasnije korišćenje. Vrhunska oprema analizira vremenske nizove i generiše veliki broj podataka između kojih je teško uspostaviti korelaciju samo vizualnim pregledom, bez dalje obrade. Krajnji cilj 1D segmenta projekta je provera hipoteze postavljene u Neurokardiološkoj laboratoriji KBC Bežanijska kosa – da dejstvo leka zavisi od bazalnog stanja simpatovagalne ravnoteže i da se i lek i doza moraju odrediti za svakog pacijenta pojedinačno. U tom kontekstu dizajniraće se sistem za klasifikaciju pacijenata na, po hipotezi, na 6 osnovnih tipova i ukupno 72 podtipa. Kao niz međurezultata razviće se i testirati veći broj visokospecijalizovanih metoda obrade, naročito za analizu barorefleksa. Dodatno, radiće se na korelaciji 1-D i 2-D metodologije koja pospešuje pouzdanost dijagnostike, praćenje patologija i individualizaciju lečenja. U 2D segmentu analize, rad je posvećen unapređenju postupka akvizicije slike funkcionalnog kardio „gating“ sistem koji sinhroniše rad srca i akviziciju na dinamičkim rentgenima. Takođe, implementiraće se algoritmi za vizuelizaciju snimaka koji su dobijene na više različitih energija sa korisničkim interfejsom za rad u kardiološkoj dijagnostici.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Fakultet tehničkih nauka u Novom Sadu, Medicinski fakultet u Beogradu, Lola Institut u Beograd
Učesnici –istraživači sa FTN
Dragana Bajić, Nikola Lisov, Mladen Kovačević, Tatjana Lončar-Turukalo, Gorana Mijatović, Tamara Ćeranić, Vladimir Petrović, Đorđe Starčević
Oprema nabavljena iz projektnih sredstava
Za FTN: računarska oprema i projektori. Za medicinsku ekipu specifična medicinska oprema

Project of Technological Development – Title
MULTIVARIABLE METHODS FOR ANALYTHICAL SUPPORT TO BIOMEDICAL DIAGNOSTICS
Project code / Acronym:
TR 32040
Web site:
Grantholder
Professor Dragana Bajić, PhD
Coordinator FTS:
Professor Dragana Bajić, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technological Development
Summary:
The basic aim of this project is analytical support to the existing biomedical equipment. The sophisticated equipment that medical part of team uses generates a huge quantity of data (5MB). These data are difficult to correlate visually, without further processing. The final goal is to test the hypothesis established at Neurocardiological laboratory of Bezanijska kosa Hospital: the effect of medicine depends on symphatovagal balance and both the medicine and its quantity should be designed specifically to each patient. Regarding to the hypothesis, a system for automatic patient classification into 6 types and 72 subtypes would be designed. Intermediary results would include numerous highly dedicated biomedical processing methods, mainly for baroreflex analysis. Additional aim is to correlate 1D and 2D methods, since imaging improves diagnostics and it is orientated towards personalized medicine. This project segment is orientated towards development of advanced cardio-gating system that synchronizes hear beats and image acquisition in dynamic Roentgen equipment. Also, image visualization that combines images acquired using different energies will be incorporated into cardiologic diagnostics.
Duration:
2011-2015
Partners:
Faculty of Technical Sciences in Novi Sad, Faculty of Medicine Novi Sad, Lola Institute Belgrade
Researchers from the FTS:
Dragana Bajić, Nikola Lisov, Mladen Kovačević, Tatjana Lončar-Turukalo, Gorana Mijatović, Tamara Ćeranić, Vladimir Petrović, Đorđe Starčević
Equipment purchased from project funds:
For FTN: computer equipment. For medical team: specific medical recording devices

Projekat tehnološkog razvoja – naziv:
RAZVOJ INFORMACIONE MREŽE ZA KONTINUALNO ISPITIVANJE ELEKTROMAGNETSKIH POLJA
Oznaka projekta / akronim:
TR 32055
Web:
http://semont.ftn.uns.ac.rs
Rukovodilac projekta:
Docent dr Nikola Đurić, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Docent dr Nikola Đurić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Projekat predlaže i razvija informacionu mrežu, kao podršku za automatsko i kontinualno ispitivanje ukupnog nivoa elektromagnetskog polja (EM), iz opsega nejonizujućih EM zračenja. Predloženi sistem vrši ispitivanje nivoa polja od svih izvora, koji emituju EM polje, na teritoriji koju informaciona mreža pokriva. Pri tome se na dnevnoj bazi prikupljaju podaci o ukupnom nivou polja i porede sa zakonski propisanim granicama izlaganja. Predložena informaciona mreža je u stanju da vrši ispitivanja EM polja velikog broja izvora, od elemenata elektrodistributivnih sistema i sistema za prenos električne energije (dalekovodi, razvodna i transformatorska postrojenja), preko sistema radio i televizijske difuzije, pa sve do mreža za bežičnu komunikaciju (kao što su GSM, UMTS ili WLAN sistemi). Na teritoriji koju pokriva ovaj sistem, na bazi 24 časa, vrše se ispitivanja ukupnog nivoa EM polja i rezultati se beleže u bazu podataka. Putem Internet mreže, podaci o ispitivanju su trenutno dostupni i omogućavaju informisanje nadležnih institucija, iz domena zaštite životne sredine, o elektromagnetskom zagađenju prouzrokovanom pojedinim izvorima EM polja. Predloženi sistem bi obezbedio ispitivanje i praćenje ukupnog nivoa EM polja permanentno i na dnevnoj bazi. Stoga, predstavlja značajnu podršku u naporima da se na sistematičan način vodi briga o potencijalnim efektima nejonizujućih EM polja na zdravlje populacije, uvažavajući njihovu zabrinutost o efektima dugotrajnog izlaganja EM poljima.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Nikola Đurić, Vera Bajović, Neda Pekarić Nađ, Vladimir Milošević, Karolina Kasaš-Lažetić, Dejana Herceg, Miodrag Milutinov, Dragiša Mišković, Dragan Knežević, Mirjana Trobok, Dragan Kljajić
Oprema nabavljena iz projektnih sredstava

Project of Technological Development – Title
DEVELOPMENT OF AN INFORMATION NETWORK FOR CONTINUOUS INVESTIGATION OF ELECTROMAGNETIC FIELDS
Project code / Acronym:
TR 32055
Web site:
http://semont.ftn.uns.ac.rs
Grantholder
Associated professor Nikola Đurić, PhD – Faculty of Technical Sciences in Novi Sad
Coordinator FTS:
Associated professor Nikola Đurić, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technological Development
Summary:
The project proposes and develops an information network, as support for automatic and continuous investigation of the overall level of electromagnetic (EM) field of non-ionizing EM radiation. The proposed system is able to monitor all sources that emit EM field, over the territory covered by this network. The system collects data about EM field on a daily basis and compares them with the legally prescribed limits of exposure. The proposed network is able to perform investigation for a number of sources, that can be found in power system and systems for power transmission (transmission lines, distribution and substation equipment), through a system of radio and television broadcasting, to the wireless communication networks (like GSM, UMTS or WLAN). The investigation of EM field, based on 24 hours of continuous monitoring, is performed over the territory covered by the system and obtained results are recorded in the database. Through the Internet network, the results are instantly available and provide information to the relevant institutions in the area of environmental protection against the electromagnetic pollution, caused by a number of sources of EM field. The proposed system constantly provides investigation and monitoring of EM field. Therefore, it is a significant support in efforts to take systematic care of potential effects of non-ionizing EM fields on the health of the population, taking into account their concern about long-term exposure to EM field.
Duration:
2011-2015
***Partners**:*
Faculty of Technical Sciences in Novi Sad
Researchers *from the FTS:*
Nikola Đurić, Vera Bajović, Neda Pekarić Nađ, Vladimir Milošević, Karolina Kasaš-Lažetić, Dejana Herceg, Miodrag Milutinov, Dragiša Mišković, Dragan Knežević, Mirjana Trobok, Dragan Kljajić
Equipment purchased from project funds:

Projekat tehnološkog razvoja – naziv:
INOVATIVNE ELEKTRONSKE KOMPONENTE I SISTEMI BAZIRANI NA NEOGRANSKIM I ORGANSKIM TEHNOLOGIJAMA UGRAĐENI U ROBE I PROIZVODE ŠIROKE POTROŠNJE
Oznaka projekta / akronim:
TR 32016
Web:
Rukovodilac projekta:
Prof. dr Ljiljana Živanov, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Ljiljana Živanov
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Projekat je posvećen razvoju inovativnih umreženih ugrađenih elektronskih komponenti i sistam baziranih na neorganskim i organskim tehnologijama za robe i proizvode široke potrošnje (pre svega u oblasti prehrambene industrije, sigurnosti, RF/medicinske elektronike). Oblast ugrađenih elektronski sistema je prepoznata kao jedna od prioritetnih tema u oblasti IKT u Strategiji naučnog i tehnološkog razvojna Republike Srbije u periodu 2009-2014. Budući ugrađeni sistemi vide se kao minijaturni, jeftini, umreženi uređaji utisnuti u okruženje i prisutni u svim sferama ljudskog života.
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Institut za multidisciplinarna istraživanja u Beogradu, Institut za telekomunikacije i elektronku „IRITEL" u Beogradu,Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Veljko Malbaša, Ivan Stojmenović, Ladislav Novak, Mirjana Damnjanović, Goran Stojanović, Staniša Dautović, Rastislav Struharik, Mirjana Videnović – Mišić, Anamarija Juhas, Andrea Marić, Ivan Mezei, Milan Lukić, Predrag Teodorović, Jelena Radić, Alena Đugova, Nelu Blaž, Snežana Đurić, Vuk Vranjković, Bogdan Vukobratović, Milan Radovanović, Bojan Gašparović, Dragana Vasiljević, Nikola Janjićijević, Milica Kisić, Nikola Bednar, Bojan Dakić, Čedo Žlebič.
Oprema nabavljena iz projektnih sredstava

Project of Technological Development – Title
INNOVATED ELECTRONIC COMPONENTS AND SYSTEMS BASED ON INORGANIC AN ORGANIC TECHNOLOGIES EMBEDDED IN CONSUMER GOODS AND PRODUCTS
Project code / Acronym:
TR 32016
Web site:
Grantholder
Professor Ljiljana Živanov, PhD – Faculty of Technical Sciences in Novi Sad
Coordinator FTS:
Professor Ljiljana Živanov, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technological Development
Summary:
This project is aiming to develop networked embedded components and systems based on the inorganic an organic technology, to be applied in consumer goods and products (in particular, in the area of food industry, safety and RF/medical electronics). The field of embedded systems has been aradigmd as one of the priorities in the ICT area, according to the Strategy of scientific and technology development of Republic of Serbia for the period 2009-2014. There is no doubt that upcoming embedded systems will be small, low cost, networked devices, embedded in the environment and present in every activity of human life. This paradigm represents the model of interaction where acquisition and processing of information is integrated into everyday objects and activities.
Duration:
2011-2015
***Partners**:*
Institute for Multidisciplinary Research (IMSI), Institute for Telecommunication and Electronics (IRITEL) Faculty of Technical Sciences in Novi Sad
Researchers from the FTS:
Veljko Malbaša, Ivan Stojmenović, Ladislav Novak, Mirjana Damnjanović, Goran Stojanović, Staniša Dautović, Rastislav Struharik, Mirjana Videnović – Mišić, Anamarija Juhas, Andrea Marić, Ivan Mezei, Milan Lukić, Predrag Teodorović, Jelena Radić, Alena Đugova, Nelu Blaž, Snežana Đurić, Vuk Vranjković, Bogdan Vukobratović, Milan Radovanović, Bojan Gašparović, Dragana Vasiljević, Nikola Janjićijević, Milica Kisić, Nikola Bednar, Bojan Dakić, Čedo Žlebič.
Equipment purchased from project funds:

Projekat tehnološkog razvoja – naziv:
MERENJA U KONCEPTU "PAMETNE" DISTRIBUTIVNE MREŽE
Oznaka projekta / akronim:
TR 32019
Web:
http://www.kelm.ftn.uns.ac.rs/index.php?option=com_content&task=view&id=144&Itemid=110
Rukovodilac projekta:
Prof. dr Vladimir Vujičić, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Vladimir Vujičić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Merenja i merne metode predstavljaju tehničko-tehnološku osnovu upravljanja i efikasnog korišćenja bilo kog, a posebno elektroenergetskog sistema. U ovom projektu će se istraživati merenja i merne metode u „pametnim" distributivnim mrežama, gde su za donošenje odluka od ključnog značaja kvalitetno i pravovremeno merenje velikog broja signala i merne metode koje obezbeđuju pravovremene, što je moguće preciznije osnovne i izvedene podatke – rezultate merenja u cilju optimalnog upravljanja energetskim, prenosnim i distributivnim resursima u cilju povećanja energetske efikasnosti. U neophodnoj meri će biti obuhvaćen i deo problematike telekomunikacija i obrade rezultata merenja. Teme kojima će se baviti projekat su: a) linearna merenja (merenja transformatorima bez jezgra) na niskom i srednjem naponu; b) merenje složenoperiodičnih signala primenom razvijenog stohastičkog A/D konvertora i stohastičkog procesora ortogonalnih transformacija; c) merenje nestacionarnih signala (struje, napona, snage i energije itd.) – kvarovi, dijagnostika, zaštita; d) paralelna merenja, paralelna lokalna obrada i komunikacije; e) obrada rezultata merenja – prepoznavanja potrošača na mreži; f) projekat integrisanih mernih uređaja za nadzor, kontrolu kvaliteta električne energije i obračun; g) razvoj i primena koncepta virtuelne instrumentacije u „pametnoj" distributivnoj mreži; h) dalji razvoj i primena metode merenja na intervalu. Tema a) Planiraju se sledeći konkretni rezultati za temu a): - nulta serija linearnog naponskog mernog transformatora bez jezgra za 20 kV naponski nivo – prototip linearnog naponskog mernog transformatora bez jezgra za 35 kV naponski nivo – prototip linearnog strujnog mernog transformatora bez jezgra za 35 kV naponski nivo – prototip linearnog strujnog mernog transformatora bez jezgra za 0,4 kV naponski nivo – prototip linearnog naponskog mernog transformatora bez jezgra za 0,4 kV naponski nivo – metodologija primene navedenih linearnih naprava i hardver za primenu (stohastički A/D konvertor i stohastički procesor ortogonalnih transformacija) Za temu b) se planira verifikacija univerzalne metode merenja složenoperiodičnih signala u prisustvu značajnijih (izvan limita evropske norme EN50160) poremećaja mrežne frekvencije.
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Elektronski fakultet u Nišu, Elektrotehnički institut „Nikola Tesla" a.d., Institut za hemiju, tehnologiju i metalurgiju u Beogradu, Prirodno-matematički fakultet i Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Nemanja Gazivoda, Željko Beljić, Josif Tomić, Vladimir Vujičić, Ivan župunski, Marjan Urekar, Nebojša Pjevalica, Dragan Pejić, Dejana Herceg, Neda Pekarić Nađ, Platon Sovilj, Slobodan Milovančev, Mirjana Trobok, Zoran Mitrović
Oprema nabavljena iz projektnih sredstava

Project of Technological Development – Title
MEASUREMENTS IN A SMART GRID CONCEPT
Project code / Acronym:
TR 32019
Web site:
http://www.kelm.ftn.uns.ac.rs/index.php?option=com_content&task=view&id=144&Itemid=110
Grantholder
Professor Vladimir Vujičić, PhD – Faculty of Technical Sciences
Coordinator FTS:
Professor Vladimir Vujičić, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technological Development
Summary:
Measurements and metering methods represent the technical and technological base for management and efficient use of any, and especially electrical power distribution system. This project will research on measurements and measuring methods in smart electroenergetical grids, where decision making is crucial for quality and timely measurements of large number of signals, together with measuring methods that provide up to date, most accurate basic and expanded data – measurement results in order to employ the most optimal management of energy, transfer and distributed resources, giving increased energy efficiency. As necessary, some problems of telecommunication and processing measurement results will be covered to a certain extent, Topics that this project addresses are: a) linear measurements (measurements using transformers without core) low and medium voltage; b) measuring non-sinusoidal signals, by applying the developed stochastic A/D convector and stochastic processor of orthogonal transformations; c) measuring non-stationary signals (current, voltage, power, energy etc) – faults, diagnostics, protection; d) parallel measurements, parallel local processing and communication; e) processing measurement results – grid load recognition; f) project of integrated measurement devices for monitoring, quality control of electrical energy and smart metering g) development and application of concept of virtual instrumentation in “smart” distributive grid; h) further development and application of method measurement over the interval. Topic a) The following concrete results are planned for topic a): - experimental series of linear voltage measuring transformer without core for 20 kV voltage level - prototype of linear voltage transformer without core for 35 kV voltage level - prototype of linear current transformer without core for 35 kV voltage level - prototype of linear current transformer without core for 0,4 kV voltage level - prototype of linear voltage transformer without core for 0,4 kV voltage level - methodology for application of above mentioned devices and hardware for application (stochastic A/D converter and stochastic processor of orthogonal transformations) - For topic b) the following is planned. Verification of universal method of measuring complex periodic signals in presence of significant (outside limits of European EN50160 norm) disturbances of grid frequency.
Duration:
2011-2015
***Partners**:*
Faculty of Electronic Engineering in Niš, Nikola Tesla Institute of *Electrical* Engineering, *Institute of Chemistry, Technology and Metallurgy, Faculty of Science, Faculty of Technical Sciences in Novi Sad*
Researchers from the FTS:
Nemanja Gazivoda, Željko Beljić, Josif Tomić, Vladimir Vujičić, Ivan župunski, Marjan Urekar, Nebojša Pjevalica, Dragan Pejić, Dejana Herceg, Neda Pekarić Nađ, Platon Sovilj, Slobodan Milovančev, Mirjana Trobok, Zoran Mitrović
Equipment purchased from project funds:

Projekat tehnološkog razvoja – naziv:
RAZVOJ DIJALOŠKIH SISTEMA ZA SRPSKI I DRUGE JUŽNOSLOVENSKE JEZIKE
Oznaka projekta / akronim:
TR 32035
Web:
www.alfanum.ftn.uns.ac.rs
Rukovodilac projekta:
Prof. dr Vlado Delić, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Vlado Delić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Dijaloški sistemi predstavljaju računarske sisteme čija je osnovna namena da komuniciraju s korisnikom i to na način što približniji prirodnoj komunikaciji između ljudi – tekstualnoj ili govornoj. Dijaloški sistemi mogu kombinovati tekst, govor i druge elemente komunikacije kako na ulazu, tako i na izlazu. Mogućnosti njihove primene su ogromne, a kao najbitnije se izdvajaju pružanje informacija, izdavanje komandi, asistivni sistemi, primene u obrazovanju, zdravstvu itd. Dijaloški sistemi se u velikoj meri oslanjaju na tzv. jezičke i govorne tehnologije, u čemu leži i strateška prednost projektnog tima u razvoju ovih sistema. Naime, u okviru uspešne saradnje FTN i nekoliko NIO i preduzeća iz Srbije i regiona već su razvijene pojedine jezičke i govorne tehnologije visokog kvaliteta za srpski i neke druge južnoslovenske jezike. Ovo je izuzetno važno jer je ove tehnologije nemoguće, kao mnoge druge tehnologije, „uvesti iz inostranstva“, a razvijene su i uspešno primenjene tek za relativno mali broj jezika. Aktivnosti u okviru projekta ograničiće se na sledeće: ● Razvoj automatskog prepoznavanja govora (ASR), govornika i emocija u govoru, te automatske sinteze govora (TTS). ● Razumevanje i generisanje prirodnog jezika ● Upravljanje tokom dijaloga ● Razvoj aplikacija namenjenih pružanju informacija (iz ograničenog skupa) i izdavanju komandi, asistivnih sistema, te aplikacija koje će se koristiti u obrazovanju i zdravstvu
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Elektronski fakultet Niš, Matematički institut SANU, Fakultet tehničkih nauka u Novom Sadu, Filozozski fakultet Novi Sad, Centar za unapređenje životnih aktivnosti d.o.o. Beograd / Partner: AlfaNum d.o.o. Novi Sad
Učesnici –istraživači sa FTN
Nikola Đurić, Milan Sečujski, Dragan Knežević, Nataša Vujnović Sedlar, Darko Pekar, Milan Gnjatović, Dragiša Mišković, Vlado Delić, Nikša Jakovljević, Tatjana Grbić, Ivan Jokić, Milana Bojanić, Stevan Ostrogonac, Stevan Jokić, Branislav Popović, Robert Mak, Edvin Pakoci, Siniša Suzić
Oprema nabavljena iz projektnih sredstava
Laboratorija za snimanje korpusa dijaloga između čoveka i mašine (Spectator Usability Test System, Screenrecorder, Recording computer, Two TFT Monitors (24"), Computer, VGA Splitter, Camera, Two Speakers) - odobrena, ali još uvek nije prošla javne nabavke u JUP-u

Project of Technological Development – Title
DEVELOPMENT OF DIALOGUE SYSTEMS FOR SERBIAN AND OTHER SOUTH SLAVIC LANGUAGES
Project code / Acronym:
TR 32035
Web site:
http://www.alfanum.ftn.uns.ac.rs/index_engleski.html
Grantholder
Professor Vlado Delić, PhD – Faculty of Technical Sciences in Novi Sad
Coordinator FTS:
Professor Vlado Delić, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technological Development
Summary:
Dialogue systems are computer systems whose basic purpose is to communicate with the user in a way as similar as possible to natural human conversation (written or spoken). Such systems can combine text, speech and other modes of communication at both input and output. Their area of application is vast, with the most important applications being information service, command-and-control, assistive systems as well as applications in fields such as education and healthcare. Dialogue systems are heavily dependent on language and speech technologies, which are a strategic strength for the project team, since the project team has already developed some of the language and speech technologies for Serbian and some other South Slavic languages. This is especially important in view of the fact that, unlike most other technologies, these technologies cannot be simply imported from abroad, and they have been developed and successfully applied for a relatively small number of languages. Project activities will focus on the following fields: ● Automatic speech recognition (ASR), recognition of speaker and emotions in speech, as well as text-to-speech synthesis (TTS). ASR and TTS are required for basic functioning of spoken dialogue systems. ● Spoken language understanding and generation. ● Dialogue management. ● Development of systems with limited fields of application (information service, command-and-control, assistive systems, systems to be used in the fields of healthcare and education).
Duration:
2011-2015
***Partners**:*
Faculty of Electronic Engineering Niš, Mathematical Institute of the Serbian Academy of Sciences and Arts, Faculty of Technical Sciences in Novi Sad, Faculty of Philosophy, Center for Advanced Life Activities Belgrade, and AlfaNum d.o.o. Novi Sad
Researchers from the FTS:
Nikola Đurić, Milan Sečujski, Dragan Knežević, Nataša Vujnović Sedlar, Darko Pekar, Milan Gnjatović, Dragiša Mišković, Vlado Delić, Nikša Jakovljević, Tatjana Grbić, Ivan Jokić, Milana Bojanić, Stevan Ostrogonac, Stevan Jokić, Branislav Popović, Robert Mak, Edvin Pakoci, Siniša Suzić
Equipment purchased from project funds:
Laboratory for recording a human-machine dialogue corpus (Spectator Usability Test System, Screenrecorder, Recording computer, Two TFT Monitors (24"), Computer, VGA Splitter, Camera, Two Speakers)

Projekat od značaja za nauku i tehnološki razvoj AP Vojvodine – naziv:
ISTRAŽIVANJE I RAZVOJ ENERGETSKI EFIKASNIH SISTEMA NAPAJANJA I POGONA ELEKTRIČNIH AUTOMOBILA
Oznaka projekta / akronim:
114-451-3508/2013
Web:
Rukovodilac projekta:
Prof. dr Vladimir Katić, E-mail: katav@uns.ac.rs
Rukovodilac projekta sa FTN:
Prof. dr Vladimir Katić, E-mail: katav@uns.ac.rs
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Tehničko-tehnološke nauke / razvojna
Opis projekta:
Predmet istraživanja su električni sistemi napajanja i pogona električnih vozila. U tom smislu projektom se proučavaju energetski efikasni sistemi brzog punjenja i pražnjenja akumulatorskih baterija, algoritmi optimalnog rada električnih potrošača u automobilu, upravljački sistemi pogona visokih performansi te uticaj električnih automobila na distributivnu mrežu. Kao pogonska mašina, istražuje se mogućnost primene višefaznih motora (šestofazni), kao i odgovarajućih energetskih pretvarača za njihov pogon. Takođe, razmatra se i iznalaženje optimalnog upravljanja pogonskim sklopom automobila u cilju minimalne potrošnje energije uz istovremeno ostvarivanje maksimalnih performansi. U žiži interesovanja je i bilateralni energetski pretvarač sa funkcijom kontrole i regulacije protoka aktivne i reaktivne energije između automobila i spoljne distributivne mreže. Cilj projekta je realizacija robustnog, kvalitetnog, energetski efikasnog i po ceni konkurentnog sistema napajanja i pogona električnog automobila.
Trajanje projekta:
4 godine
Institucije učesnici / partneri:
Liverpool John Moores University, School of Engineering, Byrom Street, Liverpool, L3 3AF, U.K.; University of Timisoara, bd. Vasile Parvan 2, RO-300223 Timisoara, Romania
Učesnici – istraživači sa FTN:
Vladimir Katić, Veran Vasić, Darko Marčetić, Đura Oros, Nikola Čelanović, Stevan Grabić, Vlado Porobić, Boris Dumnić, Dejan Reljić, Dragan Milićević, Zoltan Čorba, Evgenije Adžić, Marko Vekić, Zoran Ivanović
Oprema nabavljena iz projektnih sredstava:
Električne mašine, akumulatori i baterije, merni instrumenti, merna i senzorna oprema, transformatori, sklopna i zaštitna oprema, elektronske komponente, računari i računarska oprema itd.

Projects of importance for sciences and technological development of AP Vojvodina – Title:

RESEARCH AND DEVELOPMENT OF ENERGY EFFICIENT SUPPLY AND DRIVE SYSTEMS FOR EVS

Project code / acronym:

114-451-3508/2013

Web site:

Grantholder:

Prof. dr Vladimir Katić, E-mail: katav@uns.ac.rs

Coordinator from the Faculty of Technical Sciences:

Prof. dr Vladimir Katić, E-mail: katav@uns.ac.rs

Scientific Research Field / Type of research (Fundamental / Applied / Development):

Technical and technological sciences / developmental research

Project Summary:

The topic of the project is electrical supply and drive systems in modern EV's. The energy-efficient fast battery charging and discharging systems, the algorithms for optimal operation of EV's electrical loads, algorithms for high performance control and possible impact of EV's charging on the distribution network are the research problems in the framework of this project. As a driving electrical machine, a multi-phase motor (six phases) and corresponding power converter are investigated. Also, the optimal control of EV's power train in order to minimize energy consumption and simultaneously achieve maximum performance is considered. The focus of interest is the bilateral energy converter with the function of the control and regulation of the flow of active and reactive power between the car and the public distribution network.
The aim of the project is to create a robust, high-quality, energy-efficient and price competitive supply and drive system for EVs.

Duration of the project:

4 years

Partners:

Liverpool John Moores University, School of Engineering, Byrom Street, Liverpool, L3 3AF, U.K.; University of Timisoara, bd. Vasile Parvan 2, RO-300223 Timisoara, Romania

Researchers from the FTS:

Vladimir Katić, Veran Vasić, Darko Marčetić, Đura Oros, Nikola Čelanović, Stevan Grabić, Vlado Porobić, Boris Dumnić, Dejan Reljić, Dragan Milićević, Zoltan Čorba, Evgenije Adžić, Marko Vekić, Zoran Ivanović

Equipment purchased from the project funds:

Electrical machinery, accumulators and batteries, measuring instruments, measuring and sensory equipment, transformers, switchgear and protection equipment, electronic components, computers and computer equipment and etc.

Projekat tehnološkog razvoja – naziv:
RAZVOJ SOFTVERSKIH ALATA ZA ANALIZU I POBOLJŠANJE POSLOVNIH PROCESA
Oznaka projekta / skraćeni naziv:
TR 32044
Web:
Rukovodilac projekta:
Prof. dr Ivana Berković, Tehnički fakultet „Mihajlo Pupin" u Zrenjaninu
Rukovodilac projekta sa FTN:
Prof. dr Dragan Ivetić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Ovaj projekat se bavi analizom i unapređenjem poslovnih procesa u malim i srednjim preduzećima (MSP). Prema usvojenoj strategiji Republike Srbije, konkurentna tržišna ekonomija se bazira na razvoju MSP-ova. Istraživanja pokazuju da je broj MSP-ova sa manje od dve godine iskustva (što obuhvata većinu preduzeća koja su u poslovnim inkubatorima) veoma mali i da je takvim preduzećima potrebna pomoć u započinjanju i razvoju posla. U ovom projektu, podrška za te kompanije je realizovana kroz razvoj i implementaciju softverskih alata za analizu i poboljšavanje poslovnih procesa. Softverski alati su bazirani na metodama i tehnikama iz domena softverskog inženjerstva, soft kompjutinga i operacionog istraživanja. Prednosti poboljšavanja procesa su: povećavanje kvaliteta proizvoda i usluga, bolje upravljanje odnosima sa mušterijama, uvećanje zadovoljstva mušterija, smanjivanje troškova, povećavanje produktivnosti, efikasnija upotreba resursa u organizaciji (ljudskih resursa, opreme i vremena) kao i bolja saradnja između radnika i timova.
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Poljoprivredni fakultet, Tehnički fakultet „Mihajlo Pupin" u Zrenjaninu, Fakultet tehničkih nauka Univerziteta u Novom Sadu
Učesnici –istraživači sa FTN
Dragan Ivetić, Dinu Dragan, Veljko Petrović
Oprema nabavljena iz projektnih sredstava
Three PC type 3 and a TFT 23" monitor

Project of Technological Development – Title
THE DEVELOPMENT OF SOFTWARE TOOLS FOR BUSINESS PROCESS ANALYSIS AND IMPROVEMENT
Project code / Acronym:
TR 32044
Web site:
Grantholder
Professor Ivana Berković, PhD – "Mihajlo Pupin" Technical Faculty Zrenjanin
Coordinator FTS:
Professor Dragan Ivetić, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technological Development
Summary:
This project deals with business process assessment and improvement in Small and Medium Enterprises (SMEs). According to adopted development strategy of Republic of Serbia competitive market economy is based on the development of SMEs. Research indicates that the number of SMEs with experience less than two years (most of the companies from business incubators) is very small and that those companies need help with the initiation and development of business. In this project, support for those companies is realized through development and implementation of software tools for analyzing and improving business process. Software tools are based on methods and techniques from domains of software engineering, soft computing and operational research. Benefits from process improvement include: increasing the quality of products and services, better customer relationships management, increasing customer satisfaction, reduction of costs, increasing productivity, more efficient use of resources in the organization (human resources, equipment, time), as well as better cooperation between the people and teams.
Duration:
2011-2015
***Partners**:*
Faculty of Agriculture, "Mihajlo Pupin" Technical Faculty Zrenjanin, Faculty of Technical Sciences – University in Novi Sad
Researchers from the FTS:
Dragan Ivetić, Dinu Dragan, Veljko Petrović
Equipment purchased from project funds:
Three PC type 3 and a TFT 23" monitor

Projekat tehnološkog razvoja – naziv:
RAZVOJ INTELIGENTNOG NADZORA UPRAVLJAČKOG SISTEMA ZA POVEĆANJE ENERGETSKE EFIKASNOSTI ZGRADA
Oznaka projekta / akronim:
TR 33013
Web:
-
Rukovodilac projekta:
Prof. dr Filip Kulić, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Filip Kulić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Predmet istraživanja je izrada ekspertskog sistema za upravljanje radom podsistema u poslovnim objektima u cilju generisanja uštede i povećanja njihove efikasnosti. Ekspertni sistem će se oslanjati na centralni sistem za nadzor i upravljanje poslovnim objektima (BMS- Building Management System) i simulacioni model realnog objekat. BMS je sa jedne strane osnovni izvor podataka ekspertskom sistemu, a sa druge strane alat za implementaciju upravljačkih strategija proisteklih iz njega. Simulacioni model realnog objekta služi ekspertskom sistemu za proveru i upoređivanje upravljačkih akcija i usvajanje najadekvatnije. U dosadašnjoj praksi su BMS, model objekta i strategije za uštedu energije nezavisno razmatrane. Međusobnom integracijom navedenih podsistema stvorili bi se bolji uslovi za uštedu energije u navedenim tipovima objekata. Ekspertni sistem će biti realizovan kao nezavisan programski paket koji predstavlja nadgradnju standardnih BMS. Program će pored korisničkog interfejsa kao osnovnog dela imao i mogućnost sprezanja sa postojećim BMS-om poslovnog objekta putem standarnih komunikacionih protokola (LON, BACNet) i simulacionim modelom posmatranog objekta realizovanog primenom standardnih simulacionih alata (EnergyPlus, DOE, itd). Na ovaj način će se obezbediti provera i analiza efekata određenih upravljačkih strategija i akcija pre njihovih primena na realnom objektu.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Fakultet tehničkih nauka u Novom Sadu, ION Solutions d.o.o.
Učesnici –istraživači sa FTN
Vladimir Bugarski, Jovan Petrović, Zoran Jeličić, Aleksandar Erdeljan, Dragan Matić, Perica Nikolić, Milan Rapaić, Emil Neborovski, Miroslav Kljajić, Velimir Čongradac, Imre Lendak, Nebojša Petrovački, Aleksandar Anđelković, Filip Kulić
Oprema nabavljena iz projektnih sredstava
-

Project of Technological Development – Title
DEVELOPMENT OF INTELLIGENT CONTROL SYSTEM TO INCREASE ENERGY EFFICIENCY IN BUILDINGS
Project code / Acronym:
TR 33013
Web site:
-
Grantholder
Professor Filip Kulić, Faculty of Technical Sciences
Coordinator FTS:
Professor Filip Kulić
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technological Development
Summary:
The objective of this research is the creation of an expert system to control the performance of subsystems in commercial buildings to generate savings and increasing their efficiency. The expert system depends on a central system for monitoring and controlling commercial buildings (BMS - Building Management System) and a simulation of the actual building. The BMS on one hand is the main source of data for the expert system, and on the other hand a tool for implementing strategies that result from it. The simulated model of the actual building depends on an expert system to verify controlling algorithms and determine the best one. In practice so far with BMS, a possible model buildings as well as cost saving strategies were reviewed independently. Each subsystem utilizing these conditions would be created for saving energy in these types of facilities. The expert system would be implemented as software package. The program, besides the main user interface, would be able to couple with the existing BMS buildings through LON and BACNet standard protocols and the simulated model of the observed building created using simulation tools such as EnergyPlus, DOE, and so on. The said expert system would thus provide a test of modern optimization algorithms on the simulation, and their application to the actual building.
Duration:
2011-2015
Partners:
Fakulty of Technical Sciences in Novi Sad, ION Solutions d.o.o.
Researchers from the FTS:
Vladimir Bugarski, Jovan Petrović, Zoran Jeličić, Aleksandar Erdeljan, Dragan Matić, Perica Nikolić, Milan Rapaić, Emil Neborovski, Miroslav Kljajić, Velimir Čongradac, Imre Lendak, Nebojša Petrovački, Aleksandar Anđelković, Filip Kulić
Equipment purchased from project funds:
-

Projekat tehnološkog razvoja – naziv:
RAZVOJ PLATFORME ZA EDUKACIJU U OBLASTI UGRAĐENIH ELEKTRONSKIH SISTEMA
Oznaka projekta / akronim:
TR 32030
Web:
-
Rukovodilac projekta:
Viši naučni saradnik dr Branislav Todorović, *Istraživačko-razvojni institut RT-RK d.o.o.*
Rukovodilac projekta sa FTN:
Vanredni profesor dr Ilija Bašičević
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Ovaj projekat ima za cilj realizaciju jedne opšte platforme koja će pokriti razne oblasti neophodne za obrazovanje inženjera ugrađenih elektronskih sistema, kao što su obrada signala, programiranje računarskih sistema, komunikacioni sistemi i integracija složenih sistema. Ova platforma će uvesti novi način obrazovanja, u kome će se jedna platforma koristiti praktično na svim predmetima iz oblasti informacionih i komunikacionih tehnologija.
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Istraživačko-razvojni institut RT-RK d.o.o., Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Ilija Bašičević, Dušan Majstorović, Ivan Považan
Oprema nabavljena iz projektnih sredstava
Tektronix TLA7000 Series Logic Analyzer

Project of Technological Development – Title
THE PLATFORM FOR EDUCATION IN THE FIELD OF EMBEDDED SYSTEMS ENGINEERING
Project code / Acronym:
TR 32030
Web site:
-
Grantholder
Senior Research Fellow Branislav Todorović, Phd, RT-RK Institute for Computer Based Systems
Coordinator FTS:
Associated professor Ilija Bašičević, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technological Development
Summary:
This project aims to develop a general platform that would cover different areas required in education of engineers of embedded systems, i.e. signal processing, computer programming, communication systems, and integration of complex systems. The platform would introduce new type of education, in which a single platform would be used in all courses in the field of information and communication technologies.
Duration:
2011-2015
Partners:
RT-RK Institute for Computer Based Systems, Faculty of Technical Sciences in Novi Sad
Researchers from the FTS:
Ilija Bašičević, Dušan Majstorović, Ivan Považan
Equipment purchased from project funds:
Tektronix TLA7000 Series Logic Analyzer

Projekat tehnološkog razvoja – naziv:
INTELIGENTNI NADZORNO UPRAVLJAČKI SISTEM ZA RANO OTKRIVANJE I ELIMINACIJU NEŽELJNEIH STANJA I PROMENA NA UREĐAJIMA, OPREMI I PROCESIMA PROCESNE INDUSTRIJE
Oznaka projekta / akronim:
TR 32018
***Web*:**
Rukovodilac projekta:
Prof. dr Zoran Jeličić, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Zoran Jeličić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Cilj projekta je implementacija inteligentnog nadzorno upravljačkog sistema za rano otkrivanje i eliminaciju neželjenih stanja i promena na uređajima opremi i procesima procesne industrije. Posebna pažnja posvećena je ranoj detekciji kvarova asinhronih motora kao osnovnih i najčešće sretanih izvršnih organa u procesnoj industriji. Takođe, posebna pažnja je posvećena projektovanju i implementaciji inteligentnih algoritama, odnosno postupak zasnovanih na principima veštačke inteligenciji, pomoću kojih bi se vršila automatska detekcija neželjenih stanja i radnih režima, pre nego što takva stanja ugroze kvalitet završnog proizvoda i/ili naruše bezbednost osoblja.
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Fakultet tehničkih nauka u Novom Sadu, Victoriaoil a.d.
Učesnici –istraživači sa FTN
Milena Petković, Zoran Jeličić, Milan Rapaić, Željko Kanović, Srđan Vukmirović, Velimir Čongradac, Ilija Kamenko, Boris Jakovljević, Darko Čapko, Filip Kulić
Oprema nabavljena iz projektnih sredstava
Iz projektnih sredstava nabavljena je računarska oprema.

Project of Technological Development - Title
INTELIGENT SUPERVISORY-CONTROL SYSTEM FOR EARLY FAULT DETECTION AND ELIMINATION ON DEVICES, EQUIPMENT AND PLANTS IN PROCESS INDUSTRY
Project code / Acronym:
TR 32018
Web site:
Grantholder
Professor Zoran Jeličić, PhD – Faculty of Technical Sciences
Coordinator FTS:
Professor Zoran Jeličić, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technological Development
Summary:
The goal of the project is to design and implement a supervisory control system for early fault detection and elimination on devices, equipment and plants in process industry. Especially, fault detection in asynchronous electrical machinery has been addressed. Also, the inteligent algorithms will be designed and implemented, enabling early detection of unwanted behavior, i.e. before such behavior degrades product quality and/por compromises safety od human operators..
Duration:
2011-2015
Partners:
Faculty of Technical Sciences in Novi Sad, Victoriaoil a.d.
Researchers from the FTS:
Milena Petković, Zoran Jeličić, Milan Rapaić, Željko Kanović, Srđan Vukmirović, Velimir Čongradac, Ilija Kamenko, Boris Jakovljević, Darko Čapko, Filip Kulić
Equipment purchased from project funds:
Computing equipment has been obtained using project funds.

Projekat tehnološkog razvoja – naziv:
MODELIRANJE STANJA I STRUKTURE PADINSKIH PROCESA PRIMENOM GNSS I TEHNOLOGIJA SKENIRANJA LASEROM I GEORADAROM
Oznaka projekta / akronim:
TR 37017
Web:
Rukovodilac projekta:
Prof. dr Miro Govedarica, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Miro Govedarica
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Cilj ovog projekta je je razvoj i implementacija nove, brže i efikasnije metode za akviziciju, obradu i ekstrakciju parametara neophodnih za modeliranje stanja i strukture padinskih procesa. Time se obezbeđuje olakšan pristup podacima sistema za sanaciju padinskih procesa, podrška u procesima upravljanja i odlučivanja osnosno poboljšanje pouzdanosti i operabilnosti. Problematika analize stanja padinskih procesa kao teme ovog projekta se odnosi na kompletnu severnu padinu Fruške Gore prema Dunavu u dužini od 40km, koja je karakterisana sa izrazitim pojavama padinskih procesa.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Poljoprivredni fakultet i Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Milan Čeliković, Milan Vrtunski, Milinko Vasić, Miro Govedarica, Dušan Jovanović, Slavica Aleksić, Vladimir Ivančević, Srđan Popov, Dubravka Sladić, Aleksandar Ristić, Aleksandra Ristić, Mitar Đogo, Vladimir Pajić, Đorđe Pržulj, Ivana Đorđević, Ivan Alargić, Ivan Luković
Oprema nabavljena iz projektnih sredstava

Project of Technological Development - Title
MODELLING THE STATE AND THE STRUCTURE OF SLOPE PROCESSES USING GNSS, LASER SCANNING TECHNOLOGY AND GROUND-PENETRATING RADAR
Project code / Acronym:
TR 37017
Web site:
Grantholder
Professor Miro Govedarica, PhD – Faculty of Technical Sciences
Coordinator FTS:
Professor Miro Govedarica
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Applied
Summary:
The main task of the project is the development and implementation of new, faster and more efficient methods of data acquisition, processing and extraction of parameters which are necessary for modeling the state and structure of the slope processes. This provides easier access to the data of the system for the recovery of slope processes, support in the control processes and decision-making system for treatment of slope processes, shortly: improving reliability and operability. It also provides a distributed data access and data exchange between all important entities. Issues which are related to analysis of processes and structures of slope processes as topics of this project refer to the entire northern slope of Fruska Gora above the Danube River in the length of over 40 km. The slope is characterized by a persistent phenomenon of slope process. The establishment of an adequate model for external and internal structures of slope processes would be of great importance from the standpoint of simplifying the process of development of existing and designing new road and rail infrastructure in these areas, as also planning and investing in building construction (residential and commercial). The application of research results can be described from the point of the significant time saving in the process of creating project documentation. Research results also have broad application area in terms of natural resource management and in the case of crisis and critical situations.
Duration:
2011-2015
Partners:
Faculty of Agriculture and Faculty of Technical Sciences in Novi Sad
Researchers from the FTS:
Milan Čeliković, Milan Vrtunski, Milinko Vasić, Miro Govedarica, Dušan Jovanović, Slavica Aleksić, Vladimir Ivančević, Srđan Popov, Dubravka Sladić, Aleksandar Ristić, Aleksandra Ristić, Mitar Đogo, Vladimir Pajić, Đorđe Pržulj, Ivana Đorđević, Ivan Alargić, Ivan Luković
Equipment purchased from project funds:

Projekat tehnološkog razvoja – naziv:
RAZVOJ PROGRAMSKE PODRŠKE ZA SAŽIMANJE PODATAKA ZASNOVAN NA METODAMA RAČUNARSKE INTELIGENCIJE
Oznaka projekta / akronim:
TR 32034
Web:
-
Rukovodilac projekta:
Prof. dr Dragan Kukolj, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Dragan Kukolj
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Predmet istraživanja na projektu je razvoj programske podrške za sažimanje visoko-dimenzionalnih podataka, zasnovan na metodama kompjuterske inteligencije, i njegove primene u realnim problemima. Kao osnovni primer primene metoda za sažimanje podataka će biti razmatran problem analize patentnih portfolija. Automatska analiza tekstova patentnih portfolija, sastavljenih često od velikog broja patenata, ima za cilj sticanje suštinskog razumevanja tehnoloških karakteristika kompanije, kao i stanja i trendova u razmatranoj industriji i tržištu. Kao drugi primer primene algoritama za redukciju podataka će poslužiti problem procene kvaliteta video signala gde postoji potreba da se višedimenzionalni prostor mera za ocene nepravilnosti u slici svede na niže-dimenzionalni model lakši za interpretaciju. Kao sledeći test realizacije usvojene metodologuje će poslužiti projekat automatske lokalizacije čvorova u složenoj bežičnoj mreži senzora. Od posebnog zanačaja je mogućnost estimacije pozicije senzora na osnovu prikupljenih merenja, uz minimalan utrošak energije i korišćenje jeftinih senzora.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Istraživačko-razvojni institut RT-RK d.o.o., Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Dragan Kukolj, Boris Radin, Željko Tekić
Oprema nabavljena iz projektnih sredstava
3 računara

Project of Technological Development –Title
SOFTWARE DEVELOPMENT FOR DATA REDUCTION BASED ON COMPUTATIONAL INTELLIGENCE METHODS
Project code / Acronym:
TR 32034
Web site:
-
Grantholder
Professor Dragan Kukolj, PhD – Faculty of Technical Sciences in Novi Sad
Coordinator FTS:
Professor Dragan Kukolj, PhD
ScientificResearch Fields /Type of research(Fundamental / Applied/Development)
Technological Development
Summary:
Data reduction is a key step for solving various problems in business and technical systems in general. The main aim of the research project is an investigation of the most suitable scientific framework and development of software tools based on computational intelligencefor multi-dimensional data redaction and their implementation in real problems. The problem of patent portfolio analysis will be considered as a primary example for the investigation and implementation of data reduction algorithms. The main objective of an automatic patent text analysis is to obtain fundamental understanding of company technological areas of activity, as well to gain an overall insight into trends and state of that particular market. The second test case for the implementation of devised methodologies and tools will be data reduction for video quality assessment where there is an emerging need to reduce multi-dimensional space of objective video quality measures to smaller space which is easier to use and interpret. The next test case for the implementation of adopted methods will be project for automatic node localization in complex wireless sensor networks. In this test case the possibility of sensors position estimation based on collected measurements is of special importance, especially with minimum energy consumption and through utilization of low cost sensors. As main project outcome it is expected to develop software for intellectual property (IP) analysis which will also be tested on the system for video quality assessment and as a tool for node localization in large ad-hoc wireless sensor networks.
Duration:
2011-2015
***Partners**:*
RT-RK Institute for Computer Based Systems, Faculty of Technical Sciences in Novi Sad
Researchers from the FTS:
Dragan Kukolj, Boris Radin, Željko Tekić
Equipment purchasedfrom projectfunds:
3 PCs

Projekat tehnološkog razvoja – naziv:
RAZVOJ METODOLOGIJE TESTIRANJA SOFTVERA U MULTIMEDIJALNIM SISTEMIMA
Oznaka projekta / akronim:
TR32014
***Web*:**
-
Rukovodilac projekta:
Prof. dr Nikola Teslić, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Nikola Teslić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Elektronika, telekomunikacije i informacione tehnologije (Razvoj)
Opis projekta:
Predmet istraživanja je razvoj metodologije koja će omogućiti automatsko testiranje i verifikaciju multimedijalnih sistema kao što su TV prijemnici, DVD uređaji, mobilni telefoni. Ubrzani razvoj novih tehnologija dovodi do pojave sve kompleksnijih sistema sa velikim brojem različitih funkcija, što u velikoj meri utiče na njihov kvalitet. Da bi se obezbedio kvalitet i pouzdanost ovakvih kompleksnih sistema, veliki procenat vremena za razvoj je potrebno posvetiti testiranju. Usled potrebe da se proizvod što pre pojavi na tržištu, proizvođači često skraćuju vreme razvojna, što direktno utiče na kvalitet. Da bi se ponudio proizvod koji je konkurentan u smislu cene i kvaliteta, neophodno je primeniti efikasne metode testiranja. Tendencija je da se ručno testiranje zameni metodama automatskog testiranja i verifikacije. Kako je veliki deo funkcionalnosti multimedijalnih sistema danas realizovan u softveru, neophodno je razviti efikasne metode testiranja softvera. U okviru projekta, razviće se metodologija koja će unaprediti proces tradicionalnog testiranja u smislu brzine, efikasnosti i pouzdanosti, i time obezbediti povećanje kvaliteta sistema.
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Fakultet tehničkih nauka u Novom Sadu,Naučno istraživački institut RT-RK, Istraživačko-razvojni institut RT-RK d.o.o. VESTEL Electronics
Učesnici –istraživači sa FTN
Teslić Nikola, Pap Ištvan,Savić Milan, Majstorović Dušan, Bjelica Milan, Považan Ivan
Oprema nabavljena iz projektnih sredstava
R&S SFE100 Test Transmitter, 1 PC

Project of Technological Development – Title:
THE DEVELOPMENT OF THE METHODOLOGY FOR MULTIMEDIA SOFTWARE TESTING
Project code / Acronym:
TR32014
Web site:
-
Grand holder
Professor Nikola Teslić, PhD - Faculty of Technical Sciences in Novi Sad
Coordinator FTS:
Professor Nikola Teslić, PhD
ScientificResearch Fields /Type of research(Fundamental / Applied/Development)
Electronics and ICT (Development)
Summary:
The purpose of the research is development of the methodology aimed at automated testing and verification of multimedia systems such as TV sets, DVDs, mobile phones, etc. Due to recent fast technological development, there are more complex systems that combine various functionalities, thus considerably affecting the quality. To ensure the quality and reliability of such complex systems, a lot of time intended for development needs to be spent for testing. To ensure fast time-to-market, manufacturers often shorten product development time, thus affecting its quality. As a consequence, to offer a product that is competitive in terms of price and quality, it is necessary to adopt the efficient testing methods. There is a tendency to replace the manual verification methods with the automated ones. As the greatest part of multimedia system functionality is nowadays software-based, there is a necessity to develop efficient methods aimed at testing the software in such systems. In this project, we will develop the methodology that will improve the traditional process of software testing, specifically in terms of speed, effectiveness and reliability, and therefore, provide product quality increase.
Duration:
2011-2015
***Partners**:*
RT-RK Institute for Computer Based Systems, Faculty of Technical Sciences in Novi Sad, VESTEL Electronics, Turkey
Researchers from the FTS:
Teslić Nikola, Pap Ištvan,Savić Milan, Majstorović Dušan, Bjelica Milan, Považan Ivan
Equipment purchasedfrom projectfunds:
*R&S SFE100 Test Transmitter**,** 1 PC*

Projekat tehnološkog razvoja – naziv:
PROGRAMSKA PODRŠKA I ALATI U VIŠEJEZIČNIM SISTEMIMA
Oznaka projekta / akronim:
TR 32031
Web:
-
Rukovodilac projekta:
Prof. dr Miroslav Popović, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Miroslav Popović
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Predmet istraživanja projekta su sistemi sa više procesnih jedinica, počev od više jezgarskih sistema, preko više procesorskih sistema, klastera računara povezanih preko lokalne mreže i rešetke računara povezanih preko Interneta. Osnovni problem koji se rešava je sinteza i verifikacija programske podrške ovakvih sistema, kao i razvoj programskih okruženja i alata za ove potrebe. U istraživanjima se studiraju slučajevi ugradjenih sistema i digitalne obrade signalana višejezgarskim i višeprocesorskim sistemima, ali i druge aplikacije u realnom vremenu na klasterima i rešetkama računara. Deo aktivnosti istraživanja se odnosi i na analizu problema sinteze jedinstvene programske podrške za heterogene procesorske arhitekture koja uključuje apstrakciju memorijskog modela i instrukcijskog seta procesora, u cilju definisanja modela procesne jedinice koji će biti primenljiv na raznorodne procesorske arhitekture. Taj model koriste razvojni alati koji imaju za cilj da delimično ili potpuno, automatizuju metode za paralelizaciju. Osnovni cilj istraživanja je razvoj metodologija za sintezu i verifikaciju programske podrške sistema sa više procesnih jedinica, kao i razvoj programskih okruženja i alata za te potrebe. Konkretni primarni ciljevi su: - Razvoj metoda za paralelizaciju algoritama na višejezgarnim sistemima - Metodologija i razvojni alati za paralelno programiranje - Evaluacija višejezgarnih sistema i primena paralelnog programiranja u primerima obrade signala u realnom vremenu
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Istraživačko-razvojni institut RT-RK d.o.o., Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Miroslav Popović, Ilija Bašičević, Nemanja Lukić, Nenad Četić, Nikola Kuzmanović, Jelena Kovačević, Miodrag Đukić, Branislav Atlagić
Oprema nabavljena iz projektnih sredstava
3. DESKTOP računara

Project of Technological Development –Title
SOFTWARE AND TOOLS IN MULTICORE PROCESSING SYSTEMS
Project code / Acronym:
TR 32031
Web site:
-
Grantholder
Professor Miroslav Popović, PhD – Faculty of Technical Sciences in Novi Sad
Coordinator FTS:
Prof. dr Miroslav Popović
ScientificResearch Fields /Type of research(Fundamental / Applied/Development)
Technological Development
Summary:
The research topic of the project are systems with multiple processing units, ranging from multicore systems and multiprocessor systems, to PC clusters connected via local area network and PC grids connected through the Internet. The main problem that is being addressed is software development and testing in these types of systems, as well as development of required software enviroment and tools. The research will concentrate on case studies which deal embedded in systems and digital signal processing perforemd on multicore and multiprocessing systems, as well as other real-time applications on PC clusters and grids. Part of the research activities will relate to the analysis of the unique program synthesis process for the heterogeneous processor architectures, in order to define model for the parallel software that will be applicable to the various processing architectures and used to develop tools intended to automate the method for the software parallelization. Basically, the goal of the research is development of methodologies for synthesis and verification of the software for the system with multiple processing units, as well as the development of related programming environment and tools. Concrete primary objectives are: ● development of methods for parallelization of the algorithms on multi-core systems ● methodology and development tools for parallel programming ● evaluation of multi-core systems and applications of parallel programming in area of real-time signal processing
Duration:
2011-2015
***Partners**:*
RT-RK Institute for Computer Based Systems, Faculty of Technical Sciences in Novi Sad
Researchers from the FTS:
Miroslav Popović, Ilija Bašičević, Nemanja Lukić, Nenad Četić, Nikola Kuzmanović, Jelena Kovačević, Miodrag Đukić, Branislav Atlagić
Equipment purchasedfromprojectfunds:
3 Personal computers

Projekat tehnološkog razvoja – naziv:
RAZVOJ METODOLOGIJE I SOFTVERA ZA PROCENU KVALITETA VIDEO SIGNALA U MULTIMEDIJALNIM SISTEMIMA
Oznaka projekta / akronim:
TR 32029
Web:
-
Rukovodilac projekta:
Docent dr Jelena Kovačević, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Docent dr Jelena Kovačević
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Multimedijalni signal protiče kroz nekoliko mreža i pod sistema koji mogu uneti degradacije usled raznih obrada i prenosnih uslova mreža pre nego što stigne do krajnjeg korisnika. Estimacija i kontrola video kvaliteta u okviru multimedijalnih sistema i mreža je u tom kontekstu veoma važno pitanje i smatra se kao neophodno za postizanje pouzdanih i visokokvalitetnih usluga multimedijalnih mreža u TV, mobilnimi IPTV aplikacijama. Osnovni cilj predloženog projekta je razvoj sistema u realnom vremenu za subjektivno orjentisanu procenu vizuelnog kvaliteta adaptivnog na video sadržaj, koje bi olakšalo projektovanje i upravljanje naprednih multimedijalnih sistema I mreža sa pouzdanim i kontrolisanim video kvalitetom. U pogledu razvojna algoritma, cilj je da se razviju objektivne mere za opis određenih video smetnji I video sadržaja, koje bi se integrisale na sofisticirani način u sveukupni model za video kvalitet optimizovan za određeni video sadržaj. Još jedan bitan aspect projekta se ogleda u implementaciji razvijenog modela za procenu kvaliteta video signala u sistema za rad u realnom vremenu na standardnim višejezgrovitim kompjuterskim platformama, za šta će biti napravljena demonstracija radi inicijalne validacije performansi sistema. Konačno, integracija sistema za procenu video kvaliteta u multimedijalne mreže je postavljen kao krajnji cilj, koja će poslužiti kao konačna provera performansi sistema sa potencijalnim telekomunikacionim operaterima.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Istraživačko-razvojni institut RT-RK d.o.o., Fakultet tehničkih nauka u NovomSadu
Učesnici –istraživači sa FTN
Jelena Kovačević , Miodrag Temerinac
Oprema nabavljena iz projektnih sredstava
Tektronix PQA500 Picture Quality Analyzer, 5 PCs

Project of Technological Development – Title
VIDEO QUALITY ASSESSMENT METHODOLOGY DEVELOPMENT QUALITY MONITORING IN MULTIMEDIA SYSTEMS
Project code / Acronym:
TR 32029
Web site:
-
Grantholder
Associated professor Jelena Kovačević, PhD – Faculty of Technical Sciences in Novi Sad
Coordinator FTS:
Associated professor Jelena Kovačević, PhD
ScientificResearch Fields /Type of research(Fundamental / Applied/Development)
Technological Development
Summary:
Multimedia stream flows through several networks and subsystems, which can impair degradations due to various processing and transmission conditions, before reaching the end-user. Video quality assessment and control within the multimedia systems is in this context a highly important issue and is considered as a necessity for reliable and high Quality of Service multimedia networks in broadcast, mobile and IPTV applications. The main goal of the proposed project is a real-time system development for content-based and subjective-driven visual quality assessment, which would facilitate design and management of an advanced multimedia systems and networks with reliable and controllable video quality. Concerning the algorithm development the aim is to develop objective measures for particular video artifacts and video content and integrate them in a sophisticated manner into the overall quality model which would be subject-driven quality model optimized for particular video content. Another important aspect of the project is a real-time implementation of the developed video quality model on standard multi-core platforms with pre-validation on a demonstrator. Finally, the integration of such monitoring system into the multimedia networks is targeted, which final validation is planned to be done with potential users (broadcast and telecom operators). The outputs of the project will include: quality assessment methodology, real-time system implementation and integration.
Duration:
2011-2015
***Partners**:*
RT-RK Institute for Computer Based Systems
Researchers from the FTS:
Jelena Kovačević , Miodrag Temerinac
Equipment purchased from project funds:
Tektronix PQA500 Picture Quality Analyzer, 5 PCs

Projekat tehnološkog razvoja – naziv:
RAZVOJ INTERAKTIVNIH SERVISA ZA UREĐAJE U KUĆI
Project code / Acronym:
TR 32041
Web:
-
Rukovodilac projekta:
Dr Igor Dotlić, Istraživačko-razvojni institut RT-RK d.o.o.
Rukovodilac projekta sa FTN:
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Računarski sistemi prilagođeni kontekstu (context-aware) predstavljaju novu generaciju sistema čije je ponašanje prilagođeno okruženju u kojem se nalaze u smislu merljivih ili izračunljivih parametara tog okruženja. Cilj istraživanja je da razvije sistem sa jasno definisanom spregom koji omogućuje inteligentnu detekciju konteksta i objavu zaključaka u primenama od interesa. Sistem bi omogućio otkrivanje pozicije i broja ljudi u prostoru, otkrivanje aktivnog govornika u prostoru i usmerenosti pažnje korisnika na osnovu detekcije lica kao i dobavljanje podataka o položaju i orjentaciji pojedinih objekata korišćenjem 3D kamere, optičke kamere, mikrofonskog niza i akcelerometra. Dalje, sistem bi omogućio procenu aktivnosti korisnika, kao i procenu zauzetosti korisnika u prostoriji, izraženu koeficijentom zauzetosti (intrusiveness level). U okviru istraživanja ispitale bi se sledeće primene: (1) postavljanje profila rada aplikacije u odnosu na kontekst, kao što je utišavanje zvona i uklanjanje bučnih poruka u aplikacijama ukoliko je korisnik zauzet; (2) ušteda energije, tako što se na osnovu procenjene aktivnosti – prisustva korisnika u određenom prostoru automatski uključuje i isključuje svetlo; (3) nove korisničke sprege za unos podataka, poput detekcije gesta korisnika i automatskog izdavanja naredbe korišćenjem gesta. Plasman rešenja omogućen je kroz uspešnu saradnju sa proizvođačima TV prijemnika (Vestel – primena istraživanja za inteligentno postavljanje režima rada TV aplikacije), sistema za nadzor i upravljanje domaćinstvom (Control4 – primena istraživanja za inteligentnu kontrolu svetla, grejanja, brava), sistema za kontrolu rasvete (Atmel - primena istraživanja za kontrolu osvetljenja gestom).
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Istraživačko-razvojni institut RT-RK d.o.o., Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Stanislav Očovaj, Teodora Novković, Milan Bjelica, Robert Pečkai-Kovač
Oprema nabavljena iz projektnih sredstava
4 računara

Project of Technological Development – Title
INTERACTIVE SERVICE DEVELOPMENT FOR HOME DEVICES
Project code / Acronym:
TR 32041
Web site:
-
Grantholder
Dr Igor Dotlić, RT-RK Institute for Computer Based Systems
Coordinator FTS:
ScientificResearch Fields /Type of research(Fundamental / Applied/Development)
Technological Development
Summary:
Context-aware computer systems are a new generation of computer systems which behavior is tailored to best suit the environment they are located. The parameters of that environment are either directly measured or calculated by processing algorithms. The goal of the research is to develop a system with clearly defined application programming interface (API) to intelligently deduce various parameters of the context and to publish expertise to applications of interest. System would provide means to count people in a given area and detect their positions, to detect current speaker position, to estimate user attention to an object by face detection and to acquire data about position and orientation of different objects in space. For these purposes sensing devices such as 3D camera, optical camera, microphone array and accelerometer would be utilized. System would also provide estimation of current user activities, as well as the estimation of user busyness (interruptibility) inside a room, denoted as a global intrusiveness level. Within the research the system would be applied for: (1) setting working profile of an application depending on the context, such as silencing ringtones and obtrusive messages presented by applications in case the user is busy; (2) energy saving, by detecting user activity and presence in a certain area the light is controlled automatically; (3) new user interfaces for data input, such as user gesture recognition and automatic command issuing. Application of the solution is viable through the cooperation with NIT company from Novi Sad, which has been successfully cooperating with set-top box (TV) manufacturers (Vestel, where the research can be applied to automatically set profiles in TV applications), home control equipment manufacturers (Control4, where the research can be applied to intelligently control lighting, HVAC, locks), light control equipment manufacturers (Atmel, where the research can be applied to control light with a gesture).
Duration:
2011-2015
***Partners**:*
RT-RK Institute for Computer Based Systems, Faculty of Technical Sciences in Novi Sad
Researchers from the FTS:
Stanislav Očovaj, Teodora Novković, Milan Bjelica, Robert Pečkai-Kovač
Equipment purchasedfrom projectfunds:
4 PCs

Projekat tehnološkog razvoja – naziv:
ISTRAŽIVANJE MOGUĆNOSTI PRIMENE OTPADNIH I RECIKLIRANIH MATERIJALA U BETONSKIM KOMPOZITIMA SA OCENOM UTICAJA NA ŽIVOTNU SREDINU U CILJU PROMOCIJE ODRŽIVOG RAZVOJNA GRAĐEVINARSTVA U SRBIJI
Oznaka projekta / akronim:
TR 36017
Web:
Rukovodilac projekta:
Prof. dr Vlastimir Radonjanin, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Vlastimir Radonjanin
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Predmet istraživanja ovog projekta su betonski kompoziti na bazi industrijskog, građevinskog i drugog otpadnog materijala. Kroz teorijska i eksperimentalna istraživanja utvrdiće se mogućnost zamene prirodnog agregata u betonu korišćenjem recikliranih domaćih otpadnih materijala i zamene dela cementa industrijskim otpadnim, sekundarnim i drugim mineralnim materijalima. Kao zamena za prirodni agregat, planirana je upotreba recikliranog betona, opeke, stakla i gume, a za supstituciju dela cementa će se koristiti leteći pepeo iz domaćih termoelektrana i mleveni krečnjak. Radi poboljšanja mehaničkih svojstava ovih betona, dodavaće se: aktivni mineralni dodaci (silikatna prašina i metakaolin), hemijski dodaci i mikroarmatura. Posebno će se istražiti mogućnost primene struganog asfalta za izradu asfaltnih mešavina po toplom postupku. Za optimizaciju sastava istraživanih betona koristiće se genetski algoritmi i veštačke neuronske mreže. U cilju dobijanja potpunije slike o istraživanim kompozitima, primeniće se: mikrostrukturna analiza, modeliranje makrostrukture, reološko-dinamička analogija i ispitivanje greda pod dugotrajnim opterećenjem. Oceniće se uticaj istraživanih betonskih kompozita na životnu sredinu primenom "LCA"metodologije. Kao rezultat projekta, osim objavljenih radova, biće formirane grupe betona sa istim mogućnostima primene i definisanim sastavima. Formiraće se “ekološki profili", koji će obuhvatiti relevantne podatke o uticaju na životnu sredinu različitih vrsta betona.
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Fakultet tehničkih nauka u Novom Sadu, Građevinski fakultet u Beogradu, Građevinski fakultet u Subotici, Građevinsko-arhitektonski fakultet u Nišu, IMS – Institut za ispitivanje materijala Srbije a.d.
Učesnici –istraživači sa FTN
Vlastimir Radonjanin, Mirjana Malešev, Ivan Lukić, Vesna Bulatović, Bojan Matić Milan Trivunić, Jasmina Dražić, Vladimir Mučenski, Igor Peško, Miroslava Radeka, Dušan Kovačević, Radomir Folić, Miloš Šešlija, Tiana Tatomirović, Danka Matić
Oprema nabavljena iz projektnih sredstava
Odobrena je nabavka opreme, ali do izrade ovog Izveštaja nije nabavljena

Project of Technological Development - Title
UTILIZATION OF BY-PRODUCTS AND RECYCLED WASTE MATERIALS IN CONCRETE COMPOSITES IN THE SCOPE OF SUSTAINABLE CONSTRUCTION DEVELOPMENT IN SERBIA: INVESTIGATION AND ENVIRONMENTAL ASSESSMENT OF POSSIBLE APPLICATIONS
Project code / Acronym:
TR 36017
Web site:
Grantholder
Professor Vlastimir Radonjanin, PhD, Faculty of Technical Sciences
Coordinator FTS:
Professor Vlastimir Radonjanin, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Applied
Summary:
The subject of this project are normal, self compacting and fiber reinforced concrete composites based on the industrial, construction and other waste materials. Through theoretical and experimental research it will be determined the possibility of replacing the natural aggregate in concrete using recycled domestic waste and replacement of cement with industrial by products and waste materials, as well as other mineral materials. As a substitute for natural aggregate, it is planned usage of recycled concrete, brick, glass and rubber, and as substitution for part of cement will be used fly ash and milled limestone. To improve the mechanical properties of concrete, it will be added silica fume and metakaolin, chemical admixtures and fiber reinforcement. In particular, will be explored the possibility of applying reclaimed asphalt material in hot mix asphalt process. Optimization of the composition of concrete would be done by using genetic algorithms and artificial neural networks. In order to obtain a more complete picture of the investigated composites, will be enforced: micro-structural analysis, macrostructure modelling, rheological-dynamical analogy and testing beams under long-term loading. It will be done evaluation of influence of investigated concretes on the environment using “LCA” methodology. As a result of the project, except for published papers, will be formed groups of concrete with the same capabilities of application and defined composition.
Duration:
2011-2015
***Partners**:*
Faculty of Technical Sciences in Novi Sad, Faculty of Civil Engineering in Belgrade, Faculty of Civil Engineering in Subotica, Faculty of Civil Engineering and Architecture Niš, Institute for Testing Materials – IMS Institute Belgrade
Researchers from the FTS:
Vlastimir Radonjanin, Mirjana Malešev, Ivan Lukić, Vesna Bulatović, Bojan Matić, Milan Trivunić, Jasmina Dražić, Vladimir Mučenski, Igor Peško, Miroslava Radeka, Dušan Kovačević, Radomir Folić, Miloš Šešlija, Tiana Tatomirović, Danka Matić
Equipment purchased from project funds:
The purchase of equipment is approved, but not purchased until the preparation of this Report

Projekat tehnološkog razvoja – naziv:
ISTRAŽIVANJE UTICAJA VIBRACIJA OD SAOBRAĆAJA NA ZGRADE I LJUDE U CILJU ODRŽIVOG RAZVOJNA GRADOVA
Oznaka projekta / akronim:
TR 36046
Web:
Rukovodilac projekta:
Prof. dr Mira Petronijević, Građevinski fakultet u Beogradu
Rukovodilac projekta sa FTN:
Prof. dr Đorđe Lađinović
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Građevinske konstrukcije se projektuju tako da izdrže uticaje od karakterističnih tipova opterećenja: stalnog (sopstvena težina i težina korisnog tereta), povremenog (sneg, vetar) i izuzetnog (zemljotre, požar, udari vetra, eksplozije). Vibracije od saobraćaja nisu opterećenja na koja se proračunavaju građevinske konstrukcije, ali usled dugotrajnog dejstva one mogu izazvati sitne pukotine i oštećenje maltera i tzv. Plastike, starih, zaštićenih objekata. Međutim, jedan drugi aspekt uticaja vibracija je veoma nepovoljan - vibracije od saobraćaja izazivaju nepovoljno dejstvo na ljude i opremu u objektima, tako da sa porastom saobraćaja u gradovima postaju sve veći predmet istraživanja u svetu danas. Predložena istraživanja bi se sprovela kroz 7 modula: Modul 1. Analiza izmerenih vibracija na linići budućeg metroa u Beogradu Modul 2. Analiza i poređenje inostrane tehničke regulative i predlog primene izabranih propisa Modul 3. Numeričko modeliranje prenosa vibracija kroz tlo Modul 4. Numeričko modeliranje prenosa vibracija kroz konstrukciju Modul 5. Određivanje funkcija impedancije temelja primenom Modul 6. Određivanje dinamičkih karakteristika tla (dinamičkog modula smicanja) na području grada Beograd laboratorijskim ispitivanjem. Modul 7. Merenje vibracija usled kretanja tramvaja duž nove trase u Bulevaru kralja Aleksandra i poređenje istih sa postojećim merenjima izvedenim kada se tramvaj kretao po staroj trasi.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Građevinski fakultet u Beogradu, Fakultet tehničkih nauka
Učesnici –istraživači sa FTN
Igor Džolev, Đorđe Lađinović, Ranko Okuka
Oprema nabavljena iz projektnih sredstava

Project of Technological Development – Title
TOWARDS DEVELOPMENT OF SUSTAINABLE CITIES: INFLUENCE OF TRAFFIC INDUCED VIBRATIONS ON BUILDINGS AND HUMANS
Project code / Acronym:
TR 36046
Web site:
Grantholder
Professor Mira Petronijević, PhD – Faculty of Civil Engineering in Belgrade
Coordinator FTS:
Professor Đorđe Lađinović, PhD – Faculty of Technical Scineces in Novi Sad
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technological Development
Summary:
Even today, the traffic induced vibrations have not been sufficiently investigated in Serbia, neither in the theoretical sense, nor in the normative one (there no relevant technical codes). The research proposed in this project tend to broaden the theoretical basis of existing knowledge, to develop numerical models to simulate moving source, propagation of vibrations in the soil and response of the structure, to define the corresponding methodology for measurement and quantification of vibrations and assessment of its effects on humans and their health, as well as to analyze and propose measurements to mitigate the problem. The research will be conducted through seven modules: Modulus 1. Analysis of existing measurements in Belgrade Modulus 2. Analysis and comparison of international technical norms and proposition of the chosen code Modulus 3. Numerical modeling of wave propagation through the soil Modulus 4. Numerical modeling of wave propagation through the structure Modulus 5. Determination of the impedance functions of the foundations Modulus 6. Laboratory investigation of the dynamic properties of the soil (dynamic shear modulus) in Belgrade area Modulus 7. Measurement of the tram-induced vibrations along the new tram line in Belgrade
Duration:
2011-2015
***Partners**:*
Faculty of Civil Engineering in Belgrade, Faculty of Technical Scineces in Novi Sad
Researchers from the FTS:
Igor Džolev, Đorđe Lađinović, Ranko Okuka
Equipment purchased from project funds:

Projekat tehnološkog razvoja – naziv:
RAZVOJ I PRIMENA SVEOBUHVATNOG PRISTUPA PROJEKTOVANJU NOVIH I PROCENI SIGURNOSTI POSTOJEĆIH KONSTRUKCIJA ZA SMANJENJE SEIZMIČKOG RIZIKA U SRBIJI
Oznaka projekta / akronim:
TR 36043
***Web*:**
Rukovodilac projekta:
Prof. dr Đorđe Lađinović, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Đorđe Lađinović
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Primarni cilj projektovanja objekata u seizmički aktivnim područjima je obezbeđenje odgovarajuće sigurnosti i performansi objekata u toku i nakon dogođenih zemljotresa. Građevinske konstrukcije moraju biti projektovane i građene da izdrže zemljotresno dejstvo bez lokalnog ili potpunog rušenja, a po prestanku zemljotresa konstrukcije moraju zadržati svoj integritet i moraju imati dovoljan kapacitet preostale nosivosti. Pored sigurnosti na lom konstrukcije, za različite tipove zgrada i drugih konstrukcija, mora se obezbediti i adekvatan stepen zaštite objekata od pojave oštećenja ili ograničenja u funkcionisanju objekta. Osnovna intencija ovog istraživanja je da se ukaže na principijene probleme pri dimenzionisanju podzemnih konstrukcija na delovanje jakih zemljotresa, i to ne samo u vezi sa neposrednim delovanjem već i sa posrednim delovanjima koja se javljaju usled promena u ponašanju okolne sredine oko podzemnih objekata. Deo istraživanja odnosi se i na analizu nestabilnosti klizišta i drugih labilnih terena, povećanju obrušavanja i odronjavanja u kontaktnim zonama strmih lesnih odseka, kao i u likvifakciji određenih vrsta peskovitog tla i dr.
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Građevinski fakultet u Beogradu, Građevinski fakultet u Subotici, Građevinsko-arhitektonski fakultet u Nišu, Državni univerzitet u Novom Pazaru, Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Bojan Matić, Igor Džolev, Dušan Kovačević, Đeorđe Lađinović, Radomir Folić, Ranko Okuka, Zoran Bujić, Milinko Vasić, Tatajana Kočetov Mišulić, Milan Trivunić, Milan Dimić, Mitar Đogo, Jasmina Dražić, Igor Peško
Oprema nabavljena iz projektnih sredstava

Project of Technological Development – Title
DEVELOPMENT AND APPLICATION OF A COMPREHENSIVE APPROACH TO THE DESIGN OF NEW AND SAFETY ASSESSMENT OF EXISTING STRUCTURES FOR SEISMIC RISK REDUCTION IN SERBIA
Project code / Acronym:
TR 36043
Web site:
Grantholder
Professor Đorđe Lađinović, PhD – Faculty of Technical Sciences in Novi Sad
Coordinator FTS:
Professor Đorđe Lađinović
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technological Development
Summary:
The primary objective of designing buildings in seismically active areas is to provide adequate security and performance of buildings during and after occurred earthquakes. Building structures must be designed and built to withstand a seismic effect without local or total demolition, and after the earthquake, structures must retain its integrity and have sufficient remaining load capacity. In addition to structure protection against failure, for different types of buildings and other structures, an appropriate level of protection against the appearance of damage or limitation of the object serviceability must be provided. For earthquakes with a higher probability of occurrence than the designed, which can happen several times during exploitation period of the structure, it is necessary to ensure that no such damage or delay in the use of the building can occur, whose price would have been too high compared to its price. The main intention of this research is to highlight the principal issues in designing the underground structures for the activity of strong earthquakes, not only related to direct action but also to the indirect actions that are occurred due to changes in the behaviour of the surrounding environment around underground structures. Part of the research refers to the analysis of instability of landslides and other unstable terrain, increasing of abrade and abruption in the contact zones of steep loess sections, as well as in liquefaction of certain sandy types of soil etc.
Duration:
2011-2015
Partners:
Faculty of Civil Engineering in Belgrade, Faculty of Civil Engineering in Subotica, State University in Novi Pazar, Faculty of Civil Engineering and Architecture in Niš, Faculty of Technical Sciences in Novi Sad
Researchers from the FTS:
Bojan Matić, Igor Džolev, Dušan Kovačević, Đeorđe Lađinović, Radomir Folić, Ranko Okuka, Zoran Bujić, Milinko Vasić, Tatajana Kočetov Mišulić, Milan Trivunić, Milan Dimić, Mitar Đogo, Jasmina Dražić, Igor Peško
Equipment purchased from project funds:

Projekat tehnološkog razvoja – naziv:
RAZVOJ HIDROINFORMACIONOG SISTEMA ZA PRAĆENJE I RANU NAJAVU SUŠA
Oznaka projekta / akronim:
TR 37003
Web:
Rukovodilac projekta:
Prof. dr Slaviša Trajković, Građevinsko-arhitektonski fakultet u Nišu
Rukovodilac projekta sa FTN:
Prof. dr Srđan Kolaković
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Osnovni cilj projekta jeste razvoj informacionog sistema za pouzdano praćenje i ranu najavu suše na osovu modela koji koristi optimalan skup hidrometeoroloških parametara po kriterijumima: minimalnog broja, raspoloživosti (dostupnoati) i rasprostranjenosti mernih mesta. Praćenje relevantnih hidrometeoroloških parametara (padavine, temperatura vazduha, vlažnost zemljišta, proticaj reka, nivoi podzemnih voda) i izrada odgovarajućih prognostičkih alata u okviru hidroinformacionog sistema praćenja i rane najave suše, služili bi kao osnova za donošenje odluka u cilju ublažavanja posledica suše. Zadaci koji će se izvoditi na projektu obuhvatiće sve aspekte uspostavljanja interoperabilnosti sistema za praćenje kao što su: analiza zahteva korisnika, kreiranje kataloga metapodataka, dizajniranje i razvoj opštih modela podataka, opisivanje i implementiranje protokola, modela i ontologija. Takođe, deo zadataka odvijaće se na polju razvojna infrastrukture modela podataka i implementiranju Web servisa. U okviru projekta planiraju se sledeća istraživanja: - Analiza primenljivosti postojećih indeksa suša (SPI, EDI, RDI, ...). - Analiza i predikcija suše na osnovu upoređivanja odabranih indeksa suše. - Analiza pokazatelja hidrološke suše - Analiza mogućnosti povezivanja meteorološke, poljoprivredne i hidrološke suše (zavisno od raspoloživih podataka i socio-ekonomske suše) - Razvoj modela za praćenje i ranu najavu suše na osnovu serija prikupljenjih podata sa izabranih hidrometeoroloških stanica. - Primena ontologije za semantičku integraciju skupova podataka iz različitih centara (podaci sa teritorije Srbije i SAD – a). Implementacija ontologije vodnih resursa i poljoprivrede, a za rad sistema za monitoring biće implementirane i ontologije koje se odnose na sušu. - Analiza procesa prenosa prikupljenih podataka korišćenjem GIS Web servisa. - Integracija monitoringa suše u okviru posebne softverske infrastruktuire i njegova dostupnost preko web portala. - Identifikacija zona rizika vezanog za sušu i prioritetnih oblasti za navodnavanje na osnpovu postojećih podataka i strateške važnosti. Izrada mapa rizika i prioritetnih oblasti za navodnjavanje. - Uporedno analiza studija slučaja sa područja Srbije i SAD-a. Projekt će se osloniti, između ostalih, na rezultate skorašnjih projekata „Hidrološka osnova vodoprivrednog razvojna Srbije i međunarodne saradnje u oblasti voda“ – tema „Razvoj sistema za monitoring suša na prostoru Srbije „ (NPV – 21A) i „Proučavanje ekstremne hidrološke pojave: poplave i suše u Srbiji“ (TR – 22005).
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Građevinsko-arhitektonski fakultet u Nišu, Poljoprivredni fakultet u Novom Sadu, Šumarski fakultet u Beogradu, Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Srđan Kolaković, Ana Frank, Goran Jeftenić, Slobodan Kolaković
Oprema nabavljena iz projektnih sredstava
Računarska oprema

Project of Technological Development – Title

DEVELOPMENT OF HYDRO-INFORMATION SYSTEM FOR MONITORING AND EARLY DROUGHT WARNING

Project code / acromin:

TR 37003

Web site:

Grantholder

Professor Slaviša Trajković, PhD - Faculty of Civil Engineering and Architecture in Niš,

Coordinator FTS:

Professor Srđan Kolaković, PhD

Scientific Research Fields / Type of research (Fundamental / Applied / Development)

Technological Development

Summary:

The main aim of the proposed project is the development of information system for reliable monitoring and early drought warning based on model with optimal set of hydro meteorological parameters: minimal number, availability of gauge data, and spatial distribution of measuring locations. Monitoring the relevant hydro meteorological parameters and creation of the suitable forecast tools within a hydro-information system of monitoring and early drought warning would serve as a platform for decision making in drought effects reduction. The tasks to be carried out in the project will include all the aspects of establishing interoperability of the monitoring system such as: user demand analysis, metadata catalogue formation, general data model design and development, protocol, ontology and model description and implementation.

Additionally, part of the tasks will be carried out in the domain of data model infrastructure development and web service implementation. The following research is planned for the project:

- Analysis of existing drought indices (SPI, EDI, RDI.) applicability.
- Analysis and prediction of drought on the basis of selected drought indices comparison.
- Analysis of hydrologic drought indicators.
- Analysis of potential bonding the meteorological, agricultural and hydrological drought (depending on data availability, possibly a socio-economic drought too).
- Development of monitoring and early drought warning model based on the series of collected data from the selected hydro meteorological stations.
- Application of ontologies for semantic integration of data sets from various centers (Serbia and USA). Implementation of water resources and agriculture ontology, and for the monitoring system operation, the ontologies related to drought will be implemented.
- Analysis of the collected data transfer process using GIS web service.
- Integration of drought monitoring within a special software infrastructure and its accessibility through a web portal.
- Identification of risk zones related to drought and priority irrigation areas, based on data availability and strategic importance. Compilation of risk maps and priority irrigation areas.
- Comparative case study analysis from Serbia and USA

Duration:

2011-2015

***Partners**:*

Faculty of Civil Engineering and Architecture in Niš, Faculty of Agriculture, Faculty of Forestry of the University of Belgrade, Faculty of Technical Sciences

Researchers *from the FTS:*

Srđan Kolaković, Ana Frank, Goran Jeftenić, Slobodan Kolaković

Equipment purchased from project funds:

Computer equipment

Projekat tehnološkog razvoja – naziv:
RAZVOJ SISTEMA PODRŠKE ODLUČIVANJU ZA POTREBE INTEGRALNOG UPRAVLJANJA VODNIM RESURSIMA NA SLIVU
Oznaka projekta / akronim:
TR 37018
Web:
Rukovodilac projekta:
Prof. dr Srđan Kolaković, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Srđan Kolaković
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Predmet istraživanja u ovom projektu biće integralni pristup rešavanju problema upravljanja vodnim resursima na slivu, koji podrazumeva sagledavanje, upoznavanje i analizu svih komponenata i ciljeva složene strukture i njihovih međuzavisnosti korišćenjem postojećih istorijskih i tekućih baza podataka, savremenih simulacionih i optimizacionih modela, pažljivog planiranja i izrade odgovarajućih scenarija, u cilju postizanja optimalnih strategija visoke efikasnosti. U okviru istraživanja integralnog pristupa rešavanju problema upravljanja vodnim resursima na slivu, posebna pažnja će biti posvećena razvoju sistema podrške odlučivanju. Ovako definisan sistem podrške odlučivanju biće značajna pomoć i podrška projektantima, planerima i donosiocima odluke u rešavanju složenih problema integralnog upravljanja vodnim resursima na slivu i omogućiće: - Razumevanje komponenata i procesa na slivnom području vezanih za korišćenje, uređenje i zaštitu vodnih resurs - Identifikaciju i rangiranje problema koje treba rešiti - Uspostavljanje jasnih ciljeve - Definisanje seta ograničenje i kriterija za odlučivanje - Identifikacija metoda za upoređivanje alternativnih rešenja - Definisanje liste alternativnih scenarija upravljanja vodnim resursima - Ispitivanje efikasnosti izvodljivih upravljačkih scenarija, njihov uticaj na vodne resurse, životnu sredinu i ceo sliv, ekonomske, ekološke, zakonske i druge posledice njihove realizacije - Izbor najpoviljnijih upravljačkih scenarija za definisane ciljeve, ograničenja i kriterijume i njihovo prezentovanje donosiocima odluke - Definisanje jasne i sveobuhvatne procedure implementacije upravljačke strategije koju su odabrali donosioci odluke.
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Građevinsko-arhitektonski fakultet u Nišu, Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Srđan Kolaković, Toša Ninkov, Vladimir Bulatović, Svetlana Vujović, Ana Frank, Duško Đurić, Borislav Mašić, Maja Sremački
Oprema nabavljena iz projektnih sredstava
Računarska oprema

Project of Technological Development – Title

RIVER BASIN WATER RESOURCE INTEGRAL MANAGEMENT SUPPORT SYSTEM DEVELOPMENT

Project code / acromin:

TR 37018

Web site:

Grantholder

Professor Srđan Kolaković, PhD – Faculty of Technical Sciences

Coordinator FTS:

Professor Srđan Kolaković, PhD

Scientific Research Fields / Type of research (Fundamental / Applied / Development)

Technological Development

Summary:

The subject of research in this project will be the integral approach to river basin water resource integral management, which comprises analysis, learning of and analysis of all the components and goals of the complex structure and their interdependencies using existing historical and current data bases, contemporary simulation and optimization models, careful planning and production of appropriate scenarios in order to attain optimal high efficiency strategies. Within research of the integral approach to solving the river basin water resources management issue, a special attention will be paid to the development of the decision making support system.

A decision making support system thus defined will be a significant assistance and support to designers, planners and decision makers in solving the complex problems of integral management of water resources in the basin, and it will facilitate:

- Understanding of components and processes in the river basin area related to usage, training and protection of water resources
- Identification and ranking of the problems to be solved
- Establishment of clear goals and finding of optimal solutions for achieving them
- Definition of a set of limitations and criteria for decision making
- Identification of methods for comparison of alternative solutions
- Definition of a list of alternative scenarios of water resources management
- Examination of efficiency of feasible management scenarios, their impact on water resources, environment and the entire watershed, economic, ecologic, legal and other consequences of their realization
- Choice of most favourable scenario for defined goals, limitations and criteria and their presentation to decision makers
- Definition and development of clear and comprehensive procedure of implementation of management strategy selected by decision makers.

Duration:

2011-2015

Partners:

Faculty of Civil Engineering and Architecture in Niš, Faculty of Technical Sciences in Novi Sad

Researchers *from the FTS:*

Srđan Kolaković, Toša Ninkov, Vladimir Bulatović, Svetlana Vujović, Ana Frank, Duško Đurić, Borislav Mašić, Maja Sremački

Equipment purchased from project funds:

Computer equipment

Projekat tehnološkog razvoja – naziv:

REINŽENJERING MREŽE OPERATERA UNIVERZALNOG POŠTANSKOG SERVISA UZ ORGANIZACIJUSKU SINERGIJU DRŽAVNIH I PRIRODNIH RESURSA

Oznaka projekta / akronim:

TR 36040

Web:

Rukovodilac projekta:

Prof. dr Momčilo Kujačić, Fakultet tehničkih nauka u Novom Sadu

Rukovodilac projekta sa FTN:

Prof. dr Momčilo Kujačić

Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)

Tehnološki razvoj

Opis projekta:

Pod pojmom re-inženjeringa poštanske mreže podrazumevamo radikalan redizajn poštanske mreže operatora univerzalnog poštanskog servisa radi dramatičnog poboljšanja performansi. Ovo dramatično povećanje performansi podrazumeva povećanje dostupnosti jedinica poštanske mreže i značajno smanjenje troškova mreže univerzalnog poštanskog servisa. Od redizajnirane poštanske mreže očekuje se da zadovolji potrebe korisnika za univerzalnom poštanskom uslugom, uz povećanje kvaliteta usluge. Cilj je da se postigne sinergija između javnog poštanskog oparatora, organa državne uprave, lokalne samouprave i privrede. Posebna korist se očekuje od organizacijske sinergije sa ostalim operatorima univerzalnih servisa, posebno u segmentu telekomunikacionih servisa. Cilj je da se odredi potreban obim poštanskog, a posebno univerzalnog servisa i definišu standardi u pogledu kvaliteta, rokova prenosa i dostupnosti mreže javnog operatora. Postoji niz rešenja za racionalizaciju poštanske mreže u Srbiji.

Ovim projektom planiramo da identifikujemo doprinos koji pošta daje lokalnoj zajednici i analiziramo načine na koji pošta može doprineti ciljevima Vlade. Veliki broj ljudi spreman je da kaže "selo ne bi bilo selo bez pošte". U mnogim zemljama u Evropi pitanje ruralnih pošta se posebno izučava. Tako na primer u Velikoj Britaniji od 18400 pošta, 9900 se nalazi u ruralnim oblastima i sve su ugovorne. U Velikoj Britaniji postoje i neka rešenja kao što su: kancelarije zajednica; mobilne kancelarije (pokretne pošte); lutajući menadžeri (mobilni menadžer); inovativne lokacije (lokacije poput pabova, mesnih zajednica ili čak dnevnih soba); dobrovoljne akcije (udruživanje meštana da bi održali poštu); podrška lokalnih saveta (kroz smanjenje lokalnih poreza). Pristup koji predlažemo treba da: bitno poveća efikasnost i operativnost angažovanih organa, organizacija i institucija na ruralnim područjima Srbije; bitno poveća efikasnost, produktivnost i prihode javnog operatora na neprofitabilnim područjima; omogući kvalitetnije pružanje univerzalne poštanske usluge i definišu standardi i ciljevi kvaliteta; podrži ekonomičan pristup regionalnom i ruralnom razvoju uz racionalno angažovanje sredstava iz budžeta i iz pristupnih fondova međunarodnih institucija; podrži razvoj informacionog društva u Republici Srbiji.

Trajanje projekta:

2011-2015

Institucije učesnici / partneri:

Fakultet tehničkih nauka u Novom Sadu, Republička agencija za poštanske usluge RAPIS, JP PTT saobraćaja „Srbija”

Učesnici –istraživači sa FTN

Momčilo Kujačić, Predrag Atanasković, Ivan Tričković, Bojan Jovanović, Dragana Šarac, Obrad Peković, Slaviša Dumnić, Đorđije Dupljanin

Oprema nabavljena iz projektnih sredstava

Računarska oprema

Project of Technological Development – Title
RE-ENGINEERING OF THE NETWORK OPERATOR FOR UNIVERSAL POSTAL SERVICE WITH THE ORGANIZATIONAL SYNERGY OF THE STATE AND NATURAL RESOURCES
Project code / Acronym:
TR 36040
Web site:
Grantholder
Professor Momčilo Kujačić, PhD - Faculty of Technical Sciences in Novi Sad,
Coordinator FTS:
Professor Momčilo Kujačić, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technological Development
Summary:
The term re-engineering of postal network refers to a radical redesign of the network of postal operator of the universal postal service for dramatic performance improvements. This dramatic increase in performance means increased availability of postal network units, significantly reducing the cost of universal postal service network. From the redesigned postal network is expected to meet the needs of users of universal postal service, while increasing the quality of service. The aim is to achieve synergy between public postal operator, public administration bodies, local government and industry. A special benefit is expected from organizational synergies with other operators of universal service, particularly in the area of telecommunications services. The aim is to determine the required volume of postal and especially the universal service and define standards in terms of quality, deadlines for delivery and availability of public operator network. With this project we plan to identify the contribution that Post provides to the local community and analyze the ways in which Post can contribute to the objectives of the Government. Recognizable social benefits of Post are reflected in: support to entrepreneurs who are interested in opening contractual posts and preserving perhaps the last of entrepreneurs in rural areas; support the socially threatened and persons with special needs; keeping the community close together; for many older people visit to the post office represents a unique social event. A large number of people is willing to say "village is not a village if it doesn‘t have post." In many countries in Europe the issue of rural post office in particulary studied. For example, in the UK of 18,400 postal units, 9900 is located in rural areas and they are all contracting. In the UK there are also some solutions such as: community offices, mobile office (mobile posts); wandering managers (mobile managers); innovative sites (such as pubs, local communities or even living rooms); voluntary actions (joining locals in order to preserve post); support of local councils (through the reduction of local taxes). The approach we suggest should: significantly increase the efficiency and operativity of involved organs, organizations and institutions in rural areas of Serbia; substantially increase the efficiency, productivity and income of public operator on non-profitable areas; facilitate better providing of universal postal services and define the standards and quality objectives; support economical aprouch to regional and rural development with rational use of funds from the budget and from access funds from international institutions, support the Information Society Development Strategy in Serbia.
Duration:
2011-2015
***Partners**:*
Faculty of Technical Sciences in Novi Sad, Republic Agency *for Postal Services in Belgrade, P. E. of PTT Communications "Srbija"*
Researchers from the FTS:
Momčilo Kujačić, Predrag Atanasković, Ivan Tričković, Bojan Jovanović, Dragana Šarac, Obrad Peković, Slaviša Dumnić, Đorđije Dupljanin
Equipment purchased from project funds:
Computer equipment

Projekat tehnološkog razvoja – naziv:
MODEL INTEGRACIJE TRANSPORTNOG SISTEMA
Oznaka projekta / akronim:
TR 36024
Web:
Rukovodilac projekta:
Prof. dr Vladimir Škiljaica, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Vladimir Škiljaica
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Transportna politika Evropske Unije zasnovana je na principu integracije transportne ponude kako unutar pojedinačnih sistema tako i u podsistemima-vidovima transporta. Transportni sistem Srbije još uvek ne funkcioniše kao jedan i još uvek nije integrisan što kao posledicu ima nizak kvalitet usluge i visoke troškove transporta. Deintegracija je prisutna na svim nivoima, počevši od pojedinačnih vidova transporta, preko fizičke, logičke i tarifne integracije. Ovaj projekat ima za cilj razvijanje optimalnog modela integracije u stvarnom transportnom sistemu. Integracija obuhvata drumski, železnički i rečni-vodni podsistem i sa ovakvom integracijom biće postignuta multimodalnost transportnog sistema. Model uključuje fizičku, dinamičku i tarifnu integraciju. Fizička integracija podrazumeva integraciju mreža, mesta veza putnika, pretovarnih terminala, informacionih sistema, itd. Dinamička integracije podrazumeva usklađivanje radnih vremena podsistema, usklađivanje redova vožnji, zajednički centar za upravljanje saobraćajem, itd. Tarifna integracija podrazumeva formiranje “tarifnih klubova”, sisteme jedne karte, zajednički kontrolni sistem, itd. Razvijeni model integracije biće primenljiv za transportni sistem Srbije i omogućiće racionalnu upotrebu postojećih transportnih kapaciteta u uslovima održivog razvojna. Na ovaj načinrazvoj transportnog sistema, sredstva za organizaciju i upravljanje saobraćajem biće u mogućnosti da definišu nove standarde kvaliteta transportnog sistema Srbije.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Saobraćajni fakultet u Beogradu, Fakultet tehničkih nauka, AD Centra za puteve Vojvodine, Dunav grupa agregati, JP Direkcija za izgradnju opštine Inđija, A.D. Luka Novi Sad, Telix D.O.O. preduzeće za računarski inženjering
Učesnici –istraživači sa FTN
Pavle Gladović, Pitka Pavle, Zoran Papić, Ivan Škiljaica, Milja Leković, Vuk Bogdanović, Milica Miličić, Valentina Basarić, Nenad Ruškić, Nenad Saulić, Dragan Živanić, Milan Simeunović, Svetozar Kostić, Jelena Mitrović
Oprema nabavljena iz projektnih sredstava
Softver Sidra Intersections 5.1, softver Synchro 8.0

Project of Technological Development - Title
MODELS OF INTEGRATION OF TRANSPORT SYSTEM
Project code / Acronym:
TR 36024
Web site:
Grantholder
Professor Vladimir Škiljaica, PhD – Faculty of Technical Sciences in Novi Sad
Coordinator FTS:
Professor Vladimir Škiljaica, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Applied
Summary:
Traffic policy of the European Union is based on the principle of transport offer integration both within individual systems and in subsystems-modes of transport. Transport system of Serbia still doesn't function as one and it is not integrated which as a consequence low quality of service and high transport has cost. Deintegration is present on all levels, starting from the individual modes of transport, over physical, logical and tariff integration. This project has a goal to develop optimal model of integration in a real transport system. Integration will include road, rail and river-water subsystems and with this integration multimodality of the transportation system will be accomplished. The model will include physical, dynamical and tariff integration. Physical integration includes integration of networks, passenger connection points, reloading terminals, information system etc. Dynamic integration includes adjustment of working hours of subsystems, harmonization of time tables, joint center for traffic management, etc. Tariff integration includes forming of a „tariff club", single ticket system, single control system, etc. Developed integration model will be applicable for the transport system of Serbia and it will enable rational use of existing transport capacities in the conditions of sustainable development. In this manner development of transport systems, means for organization and traffic management will be able which will define new quality standard of the transport system of Serbia.
Duration:
2011-2015
***Partners**:*
Faculty of Transport end Traffic Engineering in Belgrade, Faculty of Technical Sciences in Novi Sad, AD Center for Road in Voivodina, Danube Group Ltd., P.E. Directorate for construction of municipality of Indjija, A.D. Port of Novi Sad, Telix D.O.O. company for computer engineering
Researchers from the FTS:
Pavle Gladović, Pitka Pavle, Zoran Papić, Ivan Škiljaica, Milja Leković, Vuk Bogdanović, Milica Miličić, Valentina Basarić, Nenad Ruškić, Nenad Saulić, Dragan Živanić, Milan Simeunović, Svetozar Kostić, Jelena Mitrović
Equipment purchased from project funds:
Software Sidra Intersections 5.1, software Synchro 8.0

Projekat tehnološkog razvoja – naziv:
RAZVOJ I PRIMENA OPTIMIZACIONIH METODA U OBLIKOVANJU LANCA SNABDEVANJA I DISTRIBUCIJE PRI OBLIKOVANJU DISTRIBUTIVNOG CENTRA ZA LOGISTIČKU PODRŠKU VELIKOSERIJSKOJ PROIZVODNJI
Oznaka projekta / akronim:
TR 36030
Web:
Rukovodilac projekta:
Doc. dr Đurđica Stojanović, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Doc. dr Đurđica Stojanović
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Lanac snabdevanja se može definisati kao sinhronizovana, vremenski usklađena realizacija operacija transporta, pretovara i skladištenja kojima se obezbeđuje protok materijalnih dobara od isporučioca do primaoca (kupca), direktno ili indirektno, u skladu sa zahtevima primaoca. Sredstva za realizaciju transfera materijalnih dobara u lancu snabdevanja su mašine, uređaji, postrojenja, prevozna sredstva i drugi elementi tehničke baze logističkih sistema. Tokovi materijalnih dobara u lancima snabdevanja, u prostornom smislu, realizuju se delovanjem logističkih sistema. Saglasno tome, ova istraživanja obuhvataju naročito: Sagledavanje savremenih promena u razvoju tehnologija distribucije; Identifikovanje tehnoloških rezervi u logistici snabdevanja i distribucije; Istraživanje mogućnosti povećanja eficijencije lanaca snabdevanja projektovanjem i uvođenjem novih logističkih tehnologija, sa poboljšanim tehno-eksploatacionim karakteristikama; Vrednovanje promena u redosledu značaja pojedinih relevantnih faktora konkurencije (pouzdanost, informisanost, kvalitet, fleksibilnost, brzina, cena); Istraživanje uslova za poboljšanje konkurentske pozicije kompanije povećanjem kvaliteta lanaca snabdevanja (customer value); Ocena mogućnosti povećanja logističke fleksibilnosti i brzine reagovanja kompanije na izmenjene tržišne zahteve; Analiza promene tržišnih uslova i vrednovanje njihovog uticaj na realizaciju lanaca snabdevanja; Projektovanje i primena optimalnih logističkih tehnologija u realizaciji lanaca snabdevanja; Upravljanje logističkim tokovima i troškovima promenama vrednosti duž lanca snabdevanja; Istraživanje mogućnosti racionalizacije i unapređenja tehničkih, tehnoloških, kvalitativnih, ekonomskih i informatičkih komponenata eficijencije lanaca snabdevanja; Projektovanje i razvoj optimalnog logističkog kontrolinga u lancima snabdevanja. Na osnovu opisa istraživačkog obuhvata, ceo projekat je rasčlanjen na odgovarajući broj tema, logično složenih i podeljenih u četiri faze (četiri istraživačke godine), koje obuhvataju celokupno područje istraživanja.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Mašinski fakultet u Kraljevu, Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Đurđica Stojanović, Svetozar Kostić, Svetlana Nikolić, Marinko Maslarić, Ilija Tanackov, Vladeta Gajić, Gordan Stojić, Dragan Simić, Jovan Tepić, Siniša Sremac, Milomir Veselinović, Miloš Kopić, Bogdan Sovilj, Mirko Đelošević, Vladimir Ilin, Dejan Mirčetić, Marko Veličković, Anja Bašić, Miroslav Božović
Oprema nabavljena iz projektnih sredstava
Osam računarskih konfiguracija

Project of Technological Development - Title
DEVELOPMENT AND APPLICATION OF OPTIMIZATION TOOLS IN SHAPING THE SUPPLY CHAIN
Project code / Acronym:
TR 36030
Web site:
Grantholder
Associated professor Djurdjica Stojanovic, PhD – Faculty of Technical Sciences in Novi Sad
Coordinator FTS:
Associated professor Đurđica Stojanović, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Fundamental research
Summary:
The supply chain can be defined as synchronized, timed implementation of transport operations, transhipment and storage to ensure the flow of material goods from the supplier to the recipient (buyer), directly or indirectly, in accordance with the requirements of the recipient. Funds for the implementation of the transfer of material goods in the supply chain as machinery, equipment, plant, vehicles and other elements of technical base logistics systems. Flows of material goods in the supply chain, in terms of space, the actions implemented logistics system. Accordingly, this research includes in particular: Assessment of changes in the development of modern technology distribution; identification of technology provisions in the logistics supply and distribution; study the possibility of increasing eficijencije supply chain design and implementation of new logistics technology, improved techno-exploitation characteristics; Evaluation of changes in the order of importance certain relevant factors of competition (reliability, knowledge, quality, flexibility, speed, price); research requirements for improving the competitive position of the company by increasing the quality of the supply chain (customer value); Review the possibility of increasing logistic flexibility and responsiveness of the company to the changing market requirements, analysis of changes evaluation of market conditions and their impact on the implementation of the supply chain; design and implementation of optimal logistics technologies in the implementation of the supply chain, managing logistics flows and the cost of changing the value of the supply chain, and research opportunities to rationalize and improve the technical, technological, qualitative, economic and informational components eficijencije chains supply; design and development of optimal logistics controlling in supply chains. Based on the description of the research scope, the entire project is broken down into the appropriate number of topics, logically complex and divided into four stages (the four study years), covering the entire area of research.
Duration:
2011-2015
***Partners**:*
Faculty of Mechanical Engineering in Kraljevo, Faculty of Technical Sciences in Novi Sad
Researchers from the FTS:
Đurđica Stojanović, Svetozar Kostić, Svetlana Nikolić, Marinko Maslarić, Ilija Tanackov, Vladeta Gajić, Goran Stojić, Dragan Simić, Jovan Tepić, Siniša Sremac, Miloš Kopić, Milomir Veselinović, Mirko Đelošević, Vladimir Ilin, Dragan Marčetić, Bogdan Sovilj
Equipment purchased from project funds:
8 PC

Projekat tehnološkog razvoja – naziv:

RAZVOJ I PRIMENA MODELA UPRAVLJANJA RIZICIMA NA KORIDORIMA VII I X SA ASPEKATA UNAPREĐENJA SAOBRAĆAJNOG SISTEMA SRBIJE

Oznaka projekta / akronim:

TR 36007

Web:

Rukovodilac projekta:

Prof. dr Todor Bačkalić, Fakultet tehničkih nauka u Novom Sadu

Rukovodilac projekta sa FTN:

Prof. dr Todor Bačkalić

Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)

Tehnološki razvoj

Opis projekta:

Ekonomski i društveni napredak čovečanstva praćen je efikasnim transferom ljudi i robe, uz zahteve za povećanom bezbednošću, čistijim životnim okruženjem i većom brigom o zdravlju ljudi. Predloženi projekat ima za cilj da pomogne donosiocima odluka u procesu odlučivanja pri pronalaženju optimalne ravnoteže između pozitivnih i negativnih uticaja, koje saobraćaj ima na ekonomsku, ekološku i socijalnu dimenziju društva, i tako pomogne unapređenju saobraćajnog sistema.

Rešenje problema nudi se kroz razvoj i primenu modela upravljanja rizicima u saobraćajnom sistemu, koji će integrisati poznate principe strategije upravljanja rizicima sa rešavanjem problema efikasnosti i unapređenja saobraćajnog sistema. Stoga, osnovni predmet istraživanja su rizici u saobraćajnom sistemu, sa posebnim osvrtom na analizu bezbednosti saobraćajnih i transportnih procesa, kao i njihovog uticaja na životnu sredinu. Sa prostornog aspekta, istraživanja obuhvataju međunarodne saobraćajne koridore VII i X. Osnovni rezultat istraživanja je razvoj novog modela upravljanja rizicima u saobraćaju, zasnovanog na teorijskim principima risk management-a i dobroj praksi razvijenih zemalja, a koji će uvažavati specifičnosti društvenog sistema Republike Srbije.

Posebna pažnja biće usmerena ka: transferu znanja; formiranju informacione osnove o posledicama rizika; razvoju analitičkih modela za identifikaciju i vrednovanje rizika; razvoju softverskih rešenja vezanih za baze podataka, analizu rizika i podršku odlučivanju pri upravljanju rizicima.

Trajanje projekta:

2011-2015

Institucije učesnici / partneri:

Fakultet tehničkih nauka u Novom Sadu, Kriminalističko policajska akademija Beograd

Učesnici – istraživači sa FTN

Todor Bačkalić, Dragan Jovanović, Svetlana Bašić, Marinko Maslarić, Goran Vujić, Nemanja Stanisavljević, Bojan Batinić, Željko Kanović, Slobodan Ilić

Oprema nabavljena iz projektnih sredstava

Project of Technological Development - Title

DEVELOPMENT AND APPLICATION OF RISK MANAGEMENT MODELS ON CORRIDORS VII AND X FROM THE ASPECT OF IMPROVEMENT OF THE TRANSPORTATION SYSTEM OF SERBIA

Project code / Acronym:

TR 36007

Web site:

Grantholder:

Professor Todor Bačkalić, PhD – Faculty of Technical Sciences in Novi Sad

Coordinator FTS:

Professor Todor Bačkalić, PhD

Scientific Research Fields / Type of research (Fundamental / Applied / Development)

Applied

Summary:

Economic and social progress of mankind is followed by efficient transport, with demands for increased safety, a cleaner environment and greater care for people's health. The proposed project aims to assist in the decision-making process for finding the optimal balance between the positive and negative impacts that transport has on the economic, ecological and social dimensions of society.

The main goal is the development and application of risk management models in the transportation system that will integrate risk management strategy principles with solving the problem of efficiency and improvement of the transportation system. The main subject of research is the risks of the transportation system, with a special emphasis on the analysis of safety of the transport processes, as well as their impact on the environment. From the spatial aspect, research includes EU corridors VII and X. The main result of the research is the development of a new risk management model in transportation, based on the theoretical principles of risk management and good practice in developed countries, which will also take into consideration the specificities of the social system of the Republic of Serbia.

Special attention will be focused on: the transfer of knowledge; the formation of a risk database; the development of analytical models for the identification and evaluation of risk; the development of the databases software applications, risk analysis and decision support in risk management.

Duration:

2011-2015

***Partners**:*

Faculty of Technical Sciences in Novi Sad, Academy of Criminalistic and Police Studies, Beograd

Researchers from the FTS:

Todor Bačkalić, Dragan Jovanović, Svetlana Bašić, Marinko Maslarić, Goran Vujić, Nemanja Stanisavljević, Bojan Batinić, Željko Kanović, Slobodan Ilić

Equipment purchased from project funds:

Projekat tehnološkog razvoja – naziv:
OPTIMIZACIJA ARHITEKTONSKOG I URBANISTIČKOG PROJEKTOVANJA U FUNKCIJI ODRŽIVOG RAZVOJNA SRBIJE
Oznaka projekta / akronim:
TR 36042
Web:
Rukovodilac projekta:
Prof. dr Nađa Kurtović Folić
Rukovodilac projekta sa FTN:
Prof. dr Nađa Kurtović Folić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Ovim istraživačkim projektom arhitektonsko i urbanističko planiranje i projektovanje, кao jedan segment strateškog razvojna Srbije treba da se usmerava i približava evropskim strateškim shemama održivosti, da se prilagodi i unapredi u skladu sa čitavom novom generacijom dokumenata o održivom razvoju, koji tek treba da se izrade i usvoje u Srbiji. Optimizacija, termin koji se danas vezuje najviše za informacione tehnologije, u projektu se koristi u starom, izvornom značenju: ostvariti optimalno rešenje niza parametara za modeliranje, koji stvaraju najbolje rezultate kada se porede sa datim ulaznim podacima, odnosno učiniti ih sve zajedno efikasnijim. Istraživanje se odnosi na kritičku analizu savremenih oblika planiranja i projektovanja, kroz koju treba da se izdvoje oni parametri (činioci) i pokazatelji (indikatori) pomoću kojih se kroz ove procese mogu značajno unaprediti funkcionalna rešenja, tehnologija gradnje, konstruktivni sklopovi i estetsko oblikovanje gradnje. Optimizacija se istražuje u dva paralelna pravca, poboljšanjem samog planerskog i projektantskog procesa kao misaonog produkta i putem inovacija u kompjuterski podržanom projektovanju, pa su istraživanja podeljena u tri podprojekta. Na osnovu istraživanja treba da proisteknu sledeći najznačajniji rezultati: 1) principi, osnovna strategija i metodologija optimizacije arh. I urb. Planiranja i projektovanja u funkciji održivog razvojna; 2) formulisanje i rešavanje geometrijskih problema u digitalnoj produkciji i njihova aplikacija u arhitektonsku praksu ("*from geometry to factory*"), s aspekta održivosti.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Građevinski fakultet u Subotici, Građevinsko-arhitektonski fakultet u Nišu, Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Jelena Atanacković-Jeličić, Jovan Đerić, Ljiljana Vukajlov, Aleksandra Milinković, Anica Tufegdžić, Bojan Tepavčević, Vesna Stojaković, Vladimir Kubet, Darko Reba, Dejana Nedučin, Dimitrije Nikolić, Dragana Konstantinović, Ivana Bajšanski, Ivana Miškeljin, Igor Maraš, Ksenija Hiel, Lea Škrinjar, Marija Silađi, Marina Carević, Marko Todorov, Marko Jovanović, Milan Šijakov, Milena Krklješ, Milica Kostreš, Miloš Mandić, Nađa Kurtović Folić, Predrag Šiđanin, Radovan Štulić, Stefan Škorić.
Oprema nabavljena iz projektnih sredstava
16 notebook računara, 1 desktop računar

Project of Technological Development - Title
OPTIMIZATION OF ARCHITECTURAL AND URBAN PLANNING AND DESIGN IN FUNCTION OF SUSTAINABLE DEVELOPMENT IN SERBIA
Project code / Acronym:
TR 36042
Web site:
Grantholder
Professor Nađa Kurtović Folić, PhD – Faculty of Technical Sciences in Novi Sad
Coordinator FTS:
Professor Nađa Kurtović Folić, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Applied
Summary:
In this project, we define the methods of optimization through which the process of architectural and urban planning and design are adjusted and improved, in accordance with the whole new generation of documents in the field of sustainable development which are yet to be made and adopt in Serbia. Optimization is used in its original meaning: achieving optimal number of parameters for modeling which give the best results when compared with given input data. Through critical analysis of current models of planning and design in architecture and urbanism, those parameters (factors) and indicators are being identified, by which these processes can significantly improve, before all, functional solutions. The optimization in architectural and urban planning and design is researched in two parallel courses: improvement of architectural and urban design and planning process and through innovation in a domain of computer aided design, and that is why this project is structured in 3 subprojects. Based on the research, several result will be achieved, from which the most important are: 1) principles of optimization, basic strategy and methodology of optimization in architectural and urban planning and design in respect to sustainable development; 2) formulation and solving of geometrical problems in digital production and its application in architectural practice ("*from geometry to factory*"), in respect to sustainable concept.
Duration:
2011-2015
***Partners**:*
Faculty of Civil Engineering in Subotica, Faculty of Civil Engineering and Architecture in Niš, Faculty of Technical Sciences in Novi Sad
Researchers from the FTS:
Jelena Atanacković-Jeličić, Jovan Đerić, Ljiljana Vukajlov, Aleksandra Milinković, Anica Tufegdžić, Bojan Tepavčević, Vesna Stojaković, Vladimir Kubet, Darko Reba, Dejana Nedučin, Dimitrije Nikolić, Dragana Konstantinović, Ivana Bajšanski, Ivana Miškeljin, Igor Maraš, Ksenija Hiel, Lea Škrinjar, Marija Silađi, Marina Carević, Marko Todorov, Marko Jovanović, Milan Šijakov, Milena Krklješ, Milica Kostreš, Miloš Mandić, Nađa Kurtović Folić, Predrag Šiđanin, Radovan Štulić, Stefan Škorić.
Equipment purchased from project funds:
16 notebook, 1 desktop computer

Projekat tehnološkog razvoja – naziv:
TEHNIČKO-TEHNOLOŠKO STANJE I POTENCIJALI OBJEKATA DOMOVA KULTURE U REPUBLICI SRBIJI
Oznaka projekta / akronim:
TR 36051
Web:
www.scen.org.rs
Rukovodilac projekta:
Prof. dr Radivoje Dinulović, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Radivoje Dinulović
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Arhitektonski objekti domova kulture predstavljaju jednu od karakterističnih tipoloških grupa objekata kulture, i , dalje, javnih objekata. Ovoj tipološkoj grupi pripadaju brojni objekti izgrađeni načelno u gotovo svim opštinama u Srbiji (kao i u čitavoj nekadašnjoj SFR Jugoslaviji) u periodu između 1945. i 1990.godine. Ovi objekti su sa zadatkom da omoguće produkciju i realizaciju događaja iz oblasti scenskih i likovnih umetnosti, kao i kulture u najširem smislu reči. Domovi kulture, šire gledano, kao i pozorišta, koncertne sale, muzički centri, bioskopi, kulturni i lokalni centri i ostali javni objekti u kojima kao dominantan, ili jedan od dominantnih prostornih sklopova postoji scensko-gledališni prostor spadaju u kategoriju objekata za scenske događaje. U metodološkom smislu, projekat će biti realizovan u tri faze: FAZA 1 u okviru koje će biti izvršena situaciona analiza, biće organizovana u tri podfaze: Podfaza 1a: Identifikacija arhitektonskih objekata Domova kulture, Podfaza 1b: Prikupljanje podataka o objektima i institucijama, Podfaza 1v: Obrada podataka o obejktima i institucijama i formiranja baza podataka. Faza 1 će biti zaključena izradom i prezentacijom Baze podataka o arhitektonskim objektima Domova kulture u Republici Srbiji. FAZA 2 će biti posvećena vrednovanju istraženih objekata na osnovu niza kriterijuma, a zatim uspostavljanju tipoloških klasifikacija i uporednog prikaza karakteristika, vrednosti i potencijala svih istraženih objekata. FAZA 3 će biti posvećena izradi Programskih pretpostavki za izradu planskih dokumenata za očuvanje, rekonstrukciju, razvoj ili zamenu arhitetkonskih obejekata Domova kulture u Srbiji.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Akademija umetnosti u Novom Sadu, Fakultet dramskih umetnosti u Beogradu, Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Darko Reba, Radivoje Dinulović, Dragana Konstantinović, Ljiljana Vukajlov, Miljana Zeković, Nađa Kurtović Folić, Aleksandra Pešterac, Maja Momirov, Dragana Pilipović, Višnja Žugić, Tatjana Dadić Dinulović
Oprema nabavljena iz projektnih sredstava
3 laserska metra, kompjuterska oprema, audio oprema i oprema rasvete

Project of Technological Development - Title
TECHNICAL AND TECHNOLOGICAL CONDITION AND POTENTIALS OF COMMUNITY CULTURAL CENTRE BUILDINGS IN THE REPUBLIC OF SERBIA
Project code / Acronym:
TR 36051
Web site:
www.scen.org.rs
Grantholder
Professor Radivoje Dinulović, PhD – Faculty of Technical Sciences
Coordinator FTS:
Professor Radivoje Dinulović, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Applied
Summary:
Architectural buildings of community cultural centres represent one of characteristical typological groups of cultural buildings, and also public buildings. Numerous buildings generally in almost all municipalities in Serbia (like in almost all Former Yugoslavia) in the period between 1945 and 1990 belong to this typological group. These buildings were built with the aim to enable production and realization of performances in the field of scene and visual arts, as well as culture in the broadest sense of the word. Cultural community centres, widely viewed, as well as theatres, concert halls, musical centres, cinemas, cultural and local centres and other public buildings in which as dominant, or one of dominant spatial combination is space with stage and spectator area, belong to category of buildings for stage performing. In chrological sense, we can view building of Cultural community centre sin Serbia, within Former Yugoslavia, as generally homogenous category. In methodological sense, the project will be realised in three phases: PHASE 1 during which the situation analysis will be carried out, will be organized in three subphase: Subphase 1a: Identification of architectural buildings of Cultural community centres, Subphase 1b: Data gathering on buildings and institutions (on the basis of direct research in the field – architectural and filming of buildings, inspection of documentation that institutions-users have, inspection of documentation of local expert institutions, special interviews and surveys; on the basis of inspection of archive documentation, as well as official documentation of relevant republic, provincial and local institutions; other available methods) Subphase 1c: Data processing on buildings and institutions and creation of data base PHASE 2 will be dedicated to evaluation of inspected buildings on the basis of numerous problem criteria, and then to establishing of typological classifications and comparatively presentation of characteristics, values and potentials of all inspected buildings. PHASE 3 will be dedicated to making Program assumptions for creation of preservation planning documentation, reconstruction, development or substitution of architectural buildings of Cultural community centres in Serbia.
Duration:
2011-2015
***Partners**:*
Academy of Arts in Novi Sad, Faculty of Dramatic Arts in Belgrade, Faculty of Technical Sciences in Novi Sad
Researchers from the FTS:
Darko Reba, Radivoje Dinulović, Dragana Konstantinović, Ljiljana Vukajlov, Miljana Zeković, Nađa Kurtović Folić, Aleksandra Pešterac, Maja Momirov, Dragana Pilipović, Višnja Žugić, Tatjana Dadić Dinulović
Equipment purchased from project funds:
3 laser meters, computer equipment, audio equipment, light equipment

Projekat tehnološkog razvoja – naziv:
RAZVOJ SOFTVERA ZA UPRAVLJANJE REMONTOM I UGRADNJOM KOČIONIH SISTEMA ŠINSKIH VOZILA
Oznaka projekta / akronim:
TR 35050
Web:
/
Rukovodilac projekta:
Prof. dr Ilija Ćosić, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Ilija Ćosić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Problem u ostvarenju kvalitetnih operativnih odluka leži, u neusklađenosti podataka i nosilaca informacija, nedovoljnoj integralnosti poslovno proizvodnih procesa, razumevanju ljudskih resursa i nedovoljnoj primeni savremenih informaciono-komunikacionih tehnologija. Osnovna tematika istraživanja na projektu je ravoj opšteg modela integracije procesa i optimizacija osnovnih struktura i na tim osnovama projektovanje aplikativnog softvera za planiranje, upravljanje i kontrolu procesa remonta i ugradnje kočionih sistema uz razmatranje ponašanja u toku životnog veka. Pored razvojna osnovnih aplikacija, istraživanje će obuhvatiti i integraciju podataka merenja za odgovorne delove kočionih sistema, njihovo praćenje u toku životnog ciklusa i utvrđivanje i definisanje plana otklanjanja rizika. Kao poseban deo projekta biće razvijen model za optimalno upravljanje remontom i ugradnjom kočionih sistema u Železnicama Srbije, što povećava efikasnost i bezbednost transporta. Osnovni očekivani rezultati ovog projekta su: (1) razvijen modularni koncept u projektovanju i razvoju radnih i funkcionalnih jedinica preduzeća koja se bave remontom i ugradnjom sklopova, (2) razvijen prilaz funkcionalne integracije sistema bazirane na modularnim principima, (3) razvijen sistem ključnih indikatora performansi poslovanja preduzeća koji integriše procesne i ekonomske parametre u preduzećima koja se bave remontom i ugradnjom sklopova, (4) razvijen savremeni model informacionog sistema, (5) primena Interneta za povezivanje procesa sa više udaljenih lokacija, njihova integracija i automatizacija, (6) smanjenje vremena trajanja ciklusa i snižavanje ukupnih troškova, (7) smanjenje nivoa zaliha i dr.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Fakultet tehničkih nauka, Intermehanika doo
Učesnici –istraživači sa FTN
Sonja Ristić, Branislav Stevanov, Bojan Lalić, Marija Rakić-Skoković, Bogdan Kuzmanović, Rafa Klara, Srđan Vulanović, Nikola Suzić, Danijela Gračanin, Igor Kesić, Bato Kamberović, Slobodan Morača, Rado Maksimović, Nikola Radaković, Nemanja Sremčev, Zdravko Tešić, Nemanja Tasić, Danijela Lalić, Đorđe Lazarević, Vladimir Todić, Milovan Lazarević
Oprema nabavljena iz projektnih sredstava
-

Project of Technological Development - Title
OVERHAUL CONTROLL OF ROLLING STOCK SOFTWARE DEVELOPMENT - OVERROLLSOFT
Project code / Acronym:
TR 35050
Web site:
/
Grantholder
Professor Ilija Ćosić, PhD – Faculty of Technical Sciences Novi Sad
Coordinator FTS:
Professor Ilija Ćosić, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Applied
Summary:
The problem in achieving the quality of operational decisions is in the inconsistency of data and information repositories, lack of business integration of production processes, the understanding of human resources and insufficient use of modern information and communication technologies. The main theme of the project research is development of processes integration model, the optimization of the basic structure and on this basis design of application software for planning, management and control of brake systems reparation and installation during the life cycle. Besides the development of basic applications, the research will include the integration of measurement data for the important parts of brake systems, their monitoring during the life cycle and identifying and defining the plan to risk eliminating. As a special part of the project, model for optimal control of repairs and installation of the brake system in the Railways of Serbia will be developed, which increases efficiency and safety of transport. The expected results of this project are: (1) developed a modular concept in design and developing of companies business and functional units which are involved in repair and installation of components, (2) developed a functional approach to system integration based on modular principles, (3) developed a system of key performance indicators that integrates process and economic parameters of the companies involved in repair and installation of components, (4) developed a modern information system model, (5) use the Internet for processes connection from several locations, their integration and automation, (6) cycle time and costs reduction, (7) reduce inventory levels and others.
Duration:
2011-2015
***Partners**:*
Faculty of Technical Sciences, Intermehanika doo
Researchers from the FTS:
Sonja Ristić, Branislav Stevanov, Bojan Lalić, Marija Rakić-Skoković, Bogdan Kuzmanović, Rafa Klara, Srđan Vulanović, Nikola Suzić, Danijela Gračanin, Igor Kesić, Bato Kamberović, Slobodan Morača, Rado Maksimović, Nikola Radaković, Nemanja Sremčev, Zdravko Tešić, Nemanja Tasić, Danijela Lalić, Đorđe Lazarević, Vladimir Todić, Milovan Lazarević
Equipment purchased from project funds:
-

Projekat tehnološkog razvoja – naziv:
AUTOMATIZOVANI SISTEMI ZA IDENTIFIKACIJU I PRAĆENJE OBJEKATA U INDUSTRIJSKIM I NEINDUSTRIJSKIM SISTEMIMA
Oznaka projekta / akronim:
TR 35001
Web:
Rukovodilac projekta:
Prof. dr Stevan Stankovski, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Stevan Stankovski
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Identifikacija i praćenje karakteristika proizvoda/objekta u svim fazama njegovog životnog ciklusa predstavlja osnovu za garantovanje kvaliteta i originalnosti, koju korisnik očekuje. U cilju skraćenja vremena trajanja procesa u kojem je angažovan proizvod/objekat potrebno je smanjiti vreme neophodno za identifikaciju. Tehnologije poput barkoda, RFID (Radio Frequency Identification), OCR (Optical character recognition) omogućavaju automatizovanu identifikaciju, čime se u značajnoj meri skraćuje trajanje svih procesa koji zahtevaju postupke identifikacije. Istraživanja u okviru ovog projekta baziraće se na osnovama i iskustvima dobijenim iz prethodnih projekata. Glavni cilj istraživanja je unapređenje upravljanja i efikasnosti rada sistema sofisticiranom obradom prikupljenih podataka dobijenih integracijom različitih tehnologija za automatsku identifikaciju i praćenje objekata. Realizacija postavljenog cilja omogućiće tehnološki razvoj u oblastima kao što su: upravljanje tokovima materijala, nadgledanje i praćenje stanja proizvoda/objekata koji se nalaze u različitim fazama životnih ciklusa (na zatvorenim ili otvorenim prostorima), sprečavanje prodaje proizvoda koji ne zadovoljavaju standarde kvaliteta i upotrebljivosti, nadgledanje i sprečavanje otuđenja svojine, elektronska naplata, nadzor i upravljanje pristupom, industrijska automatizacija bazirana na primeni identifikacionih tehnologija. Pored toga, rezultati istraživanja uticaće i na dalja istraživanja u oblastima: industrijska proizvodnja, prehrambena i farmaceutska proizvodnja, zaštita životne sredine, bezbednost ljudi i dobara…
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Fakultet tehničkih nauka u Novom Sadu, JKP „Parking servis" Novi Sad, Unihemkom d.o.o.
Učesnici –istraživači sa FTN
Ivana Šenk, Robert Kovač, Igor Zečević, Laslo Tarjan, Sabolč Horvat, Gordana Ostojić, Rado Maksimović, Stevan Stankovski, Milovan Lazarević, Srđan Tegeltija
Oprema nabavljena iz projektnih sredstava

Project of Technological Development - Title

AUTOMATED SYSTEMS FOR IDENTIFICATION AND OBJECT TRACKING IN INDUSTRIAL AND NONINDUSTRIAL SYSTEMS

Project code / Acronym:

TR 35001

Web site:

Grantholder

Professor Stevan Stankovski, PhD – Faculty of Technical Sciences in Novi Sad

Coordinator FTS:

Professor Stevan Stankovski, PhD

Scientific Research Fields / Type of research (Fundamental / Applied / Development)

Technological Development

Summary:

Identification and tracking of product/object characteristics in each phase of its life cycle is fundamental for guaranteeing the quality and originality, the user expects. In order to shorten the duration of the process that has involved a product / object is necessary to reduce the time required for identification. Technologies such as barcodes, RFID, OCR allow automated identification, which significantly shortens the time of execution of all processes that require the identification procedures.

Research in this project will be based on the foundations and experience gained from previous projects. The main objective of this research is to improve the efficiency of the system's sophisticated processing of the acquired data obtained by the integration of various technologies for automatic identification and tracking of objects. The realization of the set goal will enable technological developments in areas such as material flow management, supervision and monitoring products / objects that are in various stages of life cycles (for indoor or outdoor), preventing the sale of products that do not meet standards of quality and usability, monitoring and preventing the alienation of property, electronic billing, monitoring and access management, automation based on the application of identification technology.

In addition, the results will affect the future research in the fields of industrial production, food processing and pharmaceutical production, environmental protection, safety of people and property.

Duration:

2011-2015

Partners:

Faculty of Technical Sciences in Novi Sad, JKP „Parking servis" Novi Sad, Unihemkom d.o.o.

Researchers from the FTS:

Ivana Šenk, Robert Kovač, Igor Zečević, Laslo Tarjan, Sabolč Horvat, Gordana Ostojić, Rado Maksimović, Stevan Stankovski, Milovan Lazarević, Srđan Tegeltija

Equipment purchased from project funds:

Projekat tehnološkog razvoja – naziv:
ISTRAŽIVANJE I RAZVOJ AMBIJENTALNO INTELIGENTNIH SERVISNIH ROBOTA ANTROPOMORFNIH KARAKTERISTIKA
Project code / Acronym:
TR 35003
Web:
Trenutno nedostupan
Rukovodilac projekta:
Prof. dr Veljko Potkonjak, Elektrotehnički fakultet u Beogradu
Rukovodilac projekta sa FTN:
Prof. dr Branislav Borovac
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Opšti cilj istraživanja obuhvata oblast ambijentalno inteligentne servisne robotike antropomorfnih karakteristika (humanoidni roboti i pokretne robotske platforme sa robotskim rukama) namenjene za izvršavanje svakodnevnih radnih zadataka u unutrašnjim radnim prostorima. Planirana istraživanja obuhvataju sledeće oblasti: a) matematičko modeliranje i simulaciju servisnog robotskog sistema personalne namene, b) projektovanje sistema percepcije servisnog robota na bazi fuzije heterogenih senzora i integracije sa algoritmima za obradu signala, c) integracija mobilne platforme i manipulativnog robota humanoidne strukture, d) razvoj modula za 3D planiranje kretanja i inteligentnu navigaciju u prostoru nepokretnih i pokretnih prepreka, e) razvoj inteligentnog koordinisanog upravljanja kretanjem i manipulativnim radnjama servisnog robotskog sistema na bazi kognitivnih osobina. Finalni razvojno-istraživački cilj projekta predstavlja razvoj labaratorijskog prototipa autonomnog servisnog sistema personalne namene za enterijerne aplikacije poput personalnog robota – družbenika ili servisnog robota – pomoćnika u domaćinstvu, na radnom mestu, javnim ustanovama, trgovinama, itd. Kroz ovaj projekat vrši se integracija „pametne“ kućne tehnologije budućnosti sa društvenim robotima za personalne namene. Labaratorijski prototip servisnog robotskog sistema biće ispitan i vrednovan u karakterističnim kućnim zadacima što bi trebalo da otvori mogućnost njegove komercijalne primene.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Elektrotehnički fakultet u Beogradu, Institut „Mihajlo Pupin” u Beogradu, Institut tehničkih nauka SANU, Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Mirko Raković, Milutin Nikolić, Branislav Borovac
Oprema nabavljena iz projektnih sredstava

Project of Technological Development - Title
AMBIENT INTELLIGENT SERVICE ROBOTS OF ANTROPOMORPHIC CHARACTERISTICS
Project code / Acronym:
TR 35003
Web site:
Not available at the moment
Grantholder
Professor Veljko Potkonjak, PhD - Elektrotehnički fakultet u Beogradu
Coordinator FTS:
Prof. dr Branislav Borovac
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technological Development
Summary:
The project theme is research and development of ambient-intelligent service robot (humanoid robots and mobile wheeled robot platforms with robot arms) intended for realization of everyday working tasks in indoor spaces. The research encompass a) mathematical modeling and simulation of personal service robot system, b) design of perception system based on fusion of heterogeneous sensors and integration with signal processing algorithms, c) integration of mobile platform and intelligent manipulation system, d) development of module for 3d motion planning and intelligent navigation, e) development of intelligent coordinated motion and manipulation control using cognitive functions. The final research and development project aim is development of laboratory prototype of autonomous personal service robot for indoor applications (personal robot –companion or service robot-assistant) at home, public institutions, shopping malls, etc. The second important aim is realization of a new simulation platform, which ensures a simple virtual approach to service robots of different types (locomotion robots and mobile robots) and their examination in the frame of broad range of possible service applications.
Duration:
2011-2015
***Partners**:*
School of Electrical Engineering, Institute „Mihailo Pupin" in Belgrade, Institute of Technical Sciences of SASA, Faculty of Technical Sciences in Novi Sad
Researchers from the FTS:
Mirko Raković, Milutin Nikolić, Branislav Borovac
Equipment purchased from project funds:

Projekat tehnološkog razvoja – naziv:
RAZVOJ SOFTVERSKOG MODELA ZA UNAPREĐENJE ZNANJA I PROIZVODNJE U GRAFIČKOJ INDUSTRIJI
Oznaka projekta / akronim:
TR 35027
Web:
www.grid.uns.ac.rs
Rukovodilac projekta:
Prof. dr Dragoljub Novaković, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Dragoljub Novaković
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Predmet istraživanja je područje grafičke industrije kroz razvoj softverskog modela unapređenja znanja i proizvodnje primenom savremenih računarskih i programskih sistema. Obzirom na kompleksnost i širinu područja grafičke delatnosti realizacija istraživanja bi obuhvatila najznačajnije segmente bitne za razvoj znanja implementiranog u softverski model. Iz usvojenog modela znanja bi se razvijali pojedinačni moduli. Ti softverski moduli bi obuhvatili unapređenje ključnih saznanja razvojem baze znanja pripreme, štampe i završne grafičke obrade kao osnovnih faza grafičke proizvodnje. Softverski model bi se zasnivao na savremenim WEB tehnologijama koje bi omogućile pristup i korišćenje rezultata istraživanja. Rezultati istraživanja bi obuhvatili primenu novih znanja u tehnikama štampe, materijalima, načinima reprodukcije i uticaj na konačan kvalitet proizvoda, posebno ambalaže. Rezultati bi se ostvarili pomoću analize načina proizvodnje, definisanjem uticaja štamparskih podloga, boja, formi i mašina, procesa oplemenjivanja i njihovog uticaja na percepcirani rezultat. Implementacija pojedinačnih delova digitalnog i analognog proizvodnog radnog toka kroz integraciju WEB tehnologija bi omogućilo izradu i pretpostavku za automatizaciju proizvodnje i izradu eksperstkog sistema grafičke proizvodnje. Objedinjavanje rezultata bi se realizovalo razvojem On-line grafičkog centra koji bi predstavljao informacioni sistem zasnovan na web tehnologijama koji bi unapredio prenos znanja i tehnologija grafičke industrije.
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Akademija umetnosti i Fakultet tehničkih nauka u Novom Sadu / Rotografika a.d. Subotica
Učesnici –istraživači sa FTN
Dragoljub Novaković , Igor Karlović , Živko Pavlović, Ivan Pinćer, Ivana Tomić, Sandra Dedijer, Gojko Vladić, Neda Milić, Magdolna Pal, Uroš Nedeljković, Željko Zeljković, Nemanja Kašiković, Darko Avramović, Ivana Jurič,
Oprema nabavljena iz projektnih sredstava
Radna stanica za ispitivanje i prikaz psihofizičkih i perceptualnih stimulusa, Roller Nip Indicator (RNI), Preassure Indicator (PI)

Project of Technological Development - Title
THE DEVELOPMENT OF SOFTWARE MODULE FOR IMPROVEMENT OF KNOWLEDGE AND PRODUCTION IN GRAPHIC ARTS INDUSTRY
Project code / Acronym:
TR 35027
Web site:
www.grid.uns.ac.rs
Grantholder
Professor Dragoljub Novaković, PhD – Faculty of Technical Sciences
Coordinator FTS:
Professor Dragoljub Novaković, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technological Development
Summary:
The subject of research area is the printing industry through the development of software models to improve the knowledge transfer and production, using modern computer and software systems. The research activities would include the most important segments for the knowledge development implemented in the software model. From the adopted knowledge model further separate modules will be developed. These software modules will improve the key findings and would be included through the development of a knowledge base for basic graphics production. The software model would be based on modern Web technologies that allow access to and use of research results. The research results would include the application of new knowledge in printing techniques, materials, methods of reproduction and final impact on the quality of the product, espicially packaging. Additional results would be achieved through the analysis of production, defining the influence of printing substrates, colour, forms and machines, the process of surface enhancement and their influence on final appereance results. Implementation of the individual components of digital and analog production workflow through the integration of Web technologies. Merged results would be practically implemented throgh the development of on-line graphic center that would constitute an information system based on web technologies that would improve the transfer of knowledge and technologies in the printing industry.
Duration:
2011-2015
***Partners**:*
Academy of Arts in Novi Sad, Faculty of Technical Sciences / Rotografika a.d. Subotica
Researchers from the FTS:
Dragoljub Novaković , Igor Karlović , Živko Pavlović, Ivan Pinćer, Ivana Tomić, Sandra Dedijer, Gojko Vladić, Neda Milić, Magdolna Pal, Uroš Nedeljković, Željko Zeljković, Nemanja Kašiković, Darko Avramović, Ivana Jurič
Equipment purchased from project funds:
Work station for testing and review of physical and psycho perceptual stimuli Roller Nip Indicator (RNI), Preassure Indicator (PI)

Projekat tehnološkog razvoja – naziv:
KARAKTERIZACIJA KINETIKE I UTICAJA VISOKO HAZARDNIH (EMERGING) POLUTANATA OTPADNIH VODA GRAFIČKE INDUSTRIJE
Oznaka projekta / akronim:
TR 34014
Web:
Rukovodilac projekta:
Prof. dr Jelena Kiurski, Fakultet tehničkih nauka
Rukovodilac projekta sa FTN:
Prof. dr Jelena Kiurski
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Otpadni tokovi grafičke industrije su veliki zagađivači osnovnih recipijenata ekosistema, jer u toku tehnološkog procesa generišu visoko hazardne (emerging) polutante: tragovi teških metala, antipenušavci, kompleksna jedinjenja, deterdženti, aromati, nano čestice – carbon black, TiO_2, Al_2O_3, biocidi, buka, i uv-zračenje. Zagađenja koja izazivaju proizvodni grafički procesi u odnosu na životnu sredinu mogu se ublažiti primenom jednog od dva osnovna postupka: primenom tehničkih rešenja zasnovanih na kontroli zagađenja – tehnologijama tretmana zagađenja na kraju proizvodnog procesa i prevencijom zagađenja čistijom proizvodnjom. Cilj projekta je monitoring i kvantifikacija osnovnih polutanata kao i emerging polutanata, evaluacija postojećih kriterijuma za pouzdanost procene ekotoksikoloških podataka, utvrđivanje kinetike i praćenje trendova emisije visoko hazardnih materijala u grafičkoj industriji radi sniženja nivoa rizika od negativnih dejstava, ispitivanje mogućnosti primene nestandardnih metoda za određivanje visoko hazardnih (emarging) polutanata, matematičkog modelovanja i unapređenje dostupnosti informacija javnosti radi podizanja ekološke svesti. Dobijenim pregledom i klasifikacijom podataka u realnim uslovima funkcionisanja selektovanih grafičkih subjekata, predložiće se adekvatna supstitucija pojedinačnih toksičnih supstanci ekološki prihvatljivim, čije osnovne fizičko-hemijske karakteristike imaju benefitni uticaj na tehnološki proces i celokupan kvalitet životne i radne sredine.
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Univerzitet EDUCONS, Fakultet tehničkih nauka, participant STOJKOV ŠTAMPARJA DOO
Učesnici –istraživači sa FTN
Vladimir Đaković, Lidija Čomić, Branislav Marić, Maja Turk Sekulić, Ilija Kovačević, Ljubo Nedović, Ivana Oros, Jelena Kiurski, Jelena Radonić, Aleksandra Mihailović, Maja Đogo, Nebojša Ralević, Mirjana Vojinović Miloradov
Oprema nabavljena iz projektnih sredstava
Senzorske glave za monitor gasova AEROQUAL za: amonijak, ugljenik(II) oksid, metan, ozon, azot(IV) oksid, NMHC, perhloetilen, sumpor(IV) oksid, VOC, ugljenik(IV) oksid

Project of Technological Development - Title
CHARACTERISATION OF KINETICS AND INFLUENCE OF EMERGING POLLUTANTS OF WASTE FLOW IN GRAPHIC INDUSTRY
Project code / Acronym:
TR 34014
Web site:
Grantholder
Professor Jelena Kiurski, PhD – Faculty of Technical Sciences
Coordinator FTS:
Professor Jelena Kiurski, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technological Development
Summary:
Printing industry wastes flow are the very high polluter of basic ecosystem recipiens, because the emerging pollutants are generated from the printing processes as toxic metals, antifoaming agents, complexes detergents, phthalates, aromatic compounds, and nano particles as like as carbon black, TiO_2 and Al_20_3, biocides, noise and UV-radiances. Pollutions from graphic industry could be lowered due to the two basic processes: with appliance the technical decision based on polluting control – treatment technologies of waste on the end of processes and with prevention method of clean productions. The project objectives are: monitoring and quantification of basic pollutants like as emerging pollutants, evaluation of existing criteria for appraisal assurance with prevention cleaner production, determining the kinetics and emission trends of high hazard substances possibility of nonstandard methods for emerging pollutants determination, mathematical modeling and advance attainable information for the public consciousness. With obtained reviewable and classification data in real conditions of selected printing subject function the adequate substation of toxic substances with eco-frendly will be propose. The basic physico-chemical properties have a benefit influence on technological processes in hall quality of environmental and working surroundings.
Duration:
2011-2015
Partners:
EDUCONS University, Faculty of Technical Scineces, participant: STOJKOV ŠTAMPARJA DOO
Researchers from the FTS:
Vladimir Đaković, Lidija Čomić, Branislav Marić, Maja Turk Sekulić, Ilija Kovačević, Ljubo Nedović, Ivana Oros, Jelena Kiurski, Jelena Radonić, Aleksandra Mihailović, Maja Đogo, Nebojša Ralević, Mirjana Vojinović Miloradov
Equipment purchased from project funds:
Aeroqual Sensor Heads: Ammonia sensor, Carbon monoxide sensor, Methane sensor, Ozone sensor, Nitrogen dioxide sensor, Non methane hydrocarbon sensor, Perchlorethylene sensor, Sulphur dioxide sensor , Volatile organic compounds sensor, Carbon dioxide sensor

Projekat tehnološkog razvoja – naziv:
UNAPREĐENJE TEHNOLOGIJA REMEDIJACIJE SEDIMENATA U CILJU ZAŠTITE VODA
Oznaka projekta / akronim:
TR 37004
Web:
Rukovodilac projekta:
Doc. dr Srđan Rončević, Prirodno-matematički fakultet u Novom Sadu
Rukovodilac projekta sa FTN:
Doc. dr Miljana Prica
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Unapređenje tehnologija remedijacije sedimenta zagađenog metalima i/ili organskim polutantima - za odabrane lokalitete bi se razvijala tehnička rešenja za njihovo čišćenje. Način remedijacije će se odabrati sagledavanjem karakteristika lokaliteta, specifičnosti projekta, specifičnosti sedimenta i dr. Veoma je bitno pri tome napraviti balans između zaštite životne sredine i ekonomske efikasnosti. Unapredićе se tehnike: 1. imobilizacija toksičnih metala u sedimentu primenom različitih agenasa i ispitivanje postojanosti; 2. bioremedijacija - aerobna i anaerobne stabilizacije sedimenta sa visokim sadržajem organskih materija, kao i uklanjanje organskih polutanata biodegradacijom; 3. elektrokinetička remedijacija sedimenta zagađenog toksičnim metalima. Da bi odredili prihvatljivu završnu tačku remedijacije sa aspekta zaštite životne sredine, razvijaće se testovi za procenu rizika tokom tretmana sedimenta i za određivanje ciljne vrednosti čišćenja. Dalje, ispitivaće se iznalaženje optimalne tehnike deponovanja sedimenta u skladu sa principima onemogućavanja širenja zagađujućih materija u okolinu. Širi cilj projekta je održivo upravljanje vodama u skladu sa ekološkim principima. Direktni cilj istraživanja je unapređenje različitih tehnika in- i ex-situ remedijacije sedimenta kontaminiranog teškim metalima i organskim polutantima i razvoj tehničkih rešenja za sanaciju ekoloških problema kontaminiranog sedimenta.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Prirodno-matematički fakultet, Tehnološki fakultet, Fakultet tehničkih nauka – Univerziteta u Novom Sadu
Učesnici –istraživači sa FTN
Miljana Prica
Oprema nabavljena iz projektnih sredstava

Project of Technological Development - Title
IMPROVING SEDIMENT REMEDIATION TECHNOLOGIES TO PROTECT WATER
Project code / Acronym:
TR 37004
Web site:
Grantholder
Associated professor Srđan Rončević, PhD – Faculty of Sciences Novi Sad
Coordinator FTS:
Associated professor Miljana Prica, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technological development
Summary:
Improving remediation technologies for sediments contaminated with metals and/or organic pollutants for selected sites, in order to develop technical solutions for their cleansing. Remediation methods will be evaluated based on the features of the site selected, project demands and sediment and other specifics. It is important to find a balance between environmental protection and economic efficiency. Techniques to be improved: 1. immobilization of toxic metals in sediments using different agents and durability testing; 2. bioremediation - aerobic and anaerobic stabilization of sediments with high organic matter content, as well as the removal of organic pollutants by biodegradation; 3. Electrokinetic remediation of sediments contaminated with toxic metals. In order to define an end-point for remediation in terms of environmental protection, tests will be developed for risk assessment during the sediment treatments to determine target clean-up values. Optimal techniques of sediment disposal will be investigated in accordance with the principle of preventing the spread of pollutants in the environment. The broad objective of the project is sustainable water management in accordance with ecological principles. The direct objective of this research is to improve different in-and ex-situ remediation techniques for sediments contaminated with heavy metals and organic pollutants and the development of technical solutions for the environmental problems posed by contaminated sediments.
Duration:
2011-2015
Partners:
Faculty of Sciences, Faculty of Technology, Faculty of Technical Sciences – University of Novi Sad
Researchers from the FTS:
Miljana Prica
Equipment purchased from project funds:

Projekat tehnološkog razvoja – naziv:
RAZVOJ NOVIH SORTI I POBOLJŠANJE TEHNOLOGIJA PROIZVODNJE ULJANIH BILJNIH VRSTA ZA RAZLIČITE NAMENE
Oznaka projekta / akronim:
TR 31025
Web:
http://www.mpn.gov.rs/nauka/page.php?page=264
Rukovodilac projekta:
Dr Ana Marijanović Jeromela, Institut za ratarstvo i povrtarstvo u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Milan Martinov
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehnološki razvoj
Opis projekta:
Projektom je obuhvaćeno unapređenje sortimenta, gajenja i korišćenja uljanih biljnih vrsta. Tim sa FTN koncentrisao se na inženjerske zadatake. U toku prve dve godine to je sušenje uljane tikve, *Cucurbita pepo* L. Takođe, razmatraju se količine biljne mase uljanih biljni vrsta, žetvenih ostataka, njihovo korišćenje u energetske svrhe i postupci ubiranja, transporta i skladištenja.
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Institut za ratarstvo i povrtarstvo u Novom Sadu, Ekonomski fakultet u Subotici, Poljoprivredni fakultet, Fakultet tehničkih nauka – Univerziteta u Novom Sadu
Učesnici –istraživači sa FTN
Milan Martinov, Savo Bojić, Marko Golub, Branislav Veselinov, Đorđe Đatkov
Oprema nabavljena iz projektnih sredstava
Oprema je naručena, još nije isporučena! *1. Vaga za utvrđivanje vlage materijala.* *2. Merač temperature, vlage, brzine vazduha.* *3. Senzor relativne vlažnosti vazduha.* *4. Kranska vaga.* *5. Terenski lap top za snimanje podataka.* *6. Kalorimetar.* *7. Merač težina bala- hidraulični dizač+merna ćelija.* *8. Razna laboratorijska oprema.*

Project of Technological Development - Title
DEVELOPMENT OF NEW SORTS AND IMPROVEMENT OF NEW TECHNOLOGIES FOR THE PRODUCTION OF OIL SEEDS FOR MISCELLANEOUS APPLICATIONS
Project code / Acronym:
TR 31025
Web site:
http://www.mpn.gov.rs/nauka/page.php?page=264
Grantholder
Dr Ana Marijanović Jeromela, Institute of Field and Vegetable Crops, Novi Sad
Coordinator FTS:
Professor Milan Martinov, PhD
ScientificResearch Fields /Type of research (Fundamental / Applied/Development)
Technological Development
Summary:
The project, in general, is related to improve varieties, growing and utilization technologies of oil crops. The Faculty team is concentrate to the engineering problems. During two first years this is drying of naked seeded oil pumpkin seeds, *Cucurbitapepo* L. Simultaneously, and especially during third and fourth year, the efforts are oriented toward defining of oil crops residual biomass, its utilization as energy source, development of harvesting, transportation and storage procedures.
Duration:
2011-2015
***Partners**:*
Institute of Field and Vegetable Crops, Novi Sad, Faculty of Economics in Subotica, Faculty of Agriculture, Faculty of Technical Sciences – University in Novi Sad
Researchers from the FTS:
Milan Martinov, Savo Bojić, Marko Golub, Branislav Veselinov, Đorđe Đatkov
Equipment purchasedfrom projectfunds:
The equipment has been purchased, but not delivered yet! *1. Scale for moisture content determination.* *2. Temperature, humidity, speed meter for air.* *3. Sensor of relative air humidity.* *4. Crane scale.* *5. Lap top for data collection on site.* *6. Calorimeter.* *7. Device for weighing of bales- hidraulic errector + measuring cell.* *8. Miscellaneous laboratory equipement.*

Projekat tehnološkog razvoja – naziv:

RAZVOJ METODA PROCENE RIZIKA I TEHNOLOGIJA REMEDIJACIJE U CILJU ZAŠTITE UGROŽENIH VODENIH RESURSA U APV

Oznaka projekta / akronim:

114-451-1158/2014-02

Web:

Rukovodilac projekta:

Prof. dr Božo Dalmacija – Prirodnomatematički fakultet u Novom Sadu

Rukovodilac projekta sa FTN:

Docent dr Miljana Prica

Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):

primenjena

Opis projekta:

Zagađeni sedimenti predstavljaju dugotrajne sekundarne izvore zagađivanja površinskih i podzemnih voda. Kvalitet sedimenta postaje posebno značajan tokom operacija izmuljivanja vodotokova, kada je potrebno razmotriti različite opcije remedijacije i odlaganja ako su u pitanju zagađeni sedimenti. Brojne lokacije u AP Vojvodini trebaju biti detaljnije istražene. Ovakvo stanje nalaže neophodnost sistematskog angažovanja, kao i preduzimanje hitnih mera sanacije koje će doprineti popravljanju i rešavanju trenutnog stanja. Prvi korak u okviru aktivnosti sanacije ugroženih lokaliteta jeste procena rizika.

U okviru predloženog projekta razvijaju se fizičko-hemijske, hemijske i biološke metode analize i procene biodostupnosti polutanata u sistemu voda-sediment što predstavlja osnovu za procenu rizika zagađenih lokaliteta, ali i za predviđanje remedijacionog, naročito biodegradacionog, potencijala. Drugi fokus istraživanja predstavlja razvoj efikasnih i ekonomski isplativih tehnologija remedijacije u cilju snižavanja ekološkog rizika i eventualnog dobijanja materijala koji bi se mogao koristiti u druge svrhe (npr. kao građevinski materijal). Razvoj remedijacionih tehnologija se vrši u laboratorijskim uslovima na maloj skali, na laboratorijskom pilot postrojenju ali se, u skladu sa raspoloživim sredstvima, sprovode i on-site pilot istraživanja.

Trajanje projekta:

2011-2015

Institucije učesnici / partneri:

Prirodno-matematički fakultet, Novi Sad; Tehnološki fakultet, Novi Sad; Fakultet tehničkih nauka, Novi Sad

Učesnici – istraživači sa FTN:

Miljana Prica

Oprema nabavljena iz projektnih sredstava:

Project of Technological Development - Title

DEVELOPMENT OF RISK ASSESSMENT AND REMEDIATION TECHNOLOGIES TO PROTECT VULNERABLE WATER RESOURCES IN APV

Project code / acronym:

114-451-1158/2014-02

Web site:

Grantholder:

Professor Božo Dalmacija, PhD - Faculty of Sciences Novi Sad

Coordinator from the Faculty of Technical Sciences:

Associated professor Miljana Prica, PhD

Scientific Research Field / Type of research (Fundamental / Applied / Development):

Applied

Project Summary:

Contaminated sediments represent long-term secondary sources of pollution of surface and groundwater. Sediment quality becomes especially important during dredging, when you need to consider various options for remediation and disposal, especially if the sediment is contaminated. Numerous sites in AP Vojvodina should be further explored. It suggests a need for a systematic engagement and urgent rehabilitation measures that will contribute improving the resolution of the current situation. The first step is risk assessment. The proposed project will develop a physical-chemical, chemical and biological methods of analysis and evaluation of bioavailability of pollutants in the water-sediment as a basis for risk assessment of contaminated sites, but also for the prediction of remediation potential. Another research focus is the development of efficient and economically applicable remediation technologies in order to minimize the environmental risks and the potential of obtaining materials that could be used for other purposes (eg., as building material). Development of remediation technologies is carried out in the laboratory on a small scale, on a laboratory pilot plant but, in line with available resources, but is implemented also on-site.

Duration of the project:

2011-2015

Partners:

Faculty of Sciences, Novi Sad; Faculty of Technology, Novi Sad; Faculty of Technical Sciences, Novi Sad

Researchers from the FTS:

dr Miljana Prica

Equipment purchased from the project funds:

Projekat tehnološkog razvoja – naziv:
KONKURENTNOST I ZNANJE KAO NOSIOCI RAZVOJA AP VOJVODINE
Oznaka projekta / akronim:
-
Web:
-
Rukovodilac projekta:
Prof. dr Ilija Ćosić, Fakultet tehničkih nauka
Rukovodilac projekta sa FTN:
Prof. dr Ilija Ćosić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvoja)
Pravno-ekonomske nauke / razvojna istraživanja
Opis projekta:
Visoka konkurentnost države vodi održivom privrednom razvoju, visokoj stopi zaposlenosti i socijalnoj koheziji. Stoga je 2000. godine Evropska komisija kao jedan od svojih glavnih strateških ciljeva postavila povećanje konkurentnosti, a što je poznato kao tzv. Lisabonska strategija. Ključna komponenta ove strategije je razvoj i unapređenje znanja. Informatička revolucija sa kraja XX veka, potvrdila je da dalji napredak društvene zajednice ne zavisi više isključivo od čisto ekonomskih parametara, već znanje, inovativnost, preduzetništvo, osvajanje novih tehnologija i sl., postaju ključni uslovi rasta nacionalne konkurentnosti. Nova desetogodišnja strategija „Europa 2020“ koja je 2011. stupila na snagu, takođe u svoj fokus stavlja konkurentnost, zasnovanu na tri ključna stuba razvoja: znanju, održivom razvoju i inkluzivnosti. Srbija, kao zemlja potencijalni kandidat za članstvo u EU, definisala je strateški dokument pod nazivom „Srbija 2020“, koji prati strukturu Evropske komisije, uzimajući u obzir specifičnosti Republike Srbije. Iako obe strategije definišu jasne ciljeve, osnovni problem, koji se javlja, jeste definisanje merljivih indikatora, monitoring i kontrola postavljenih ciljeva. Opšte je poznato da postoji mnoštvo indeksa konkurentnosti koji prate različite faktore. Rang Srbije po ovim indeksima je po pravilu slab, tj. Srbija se nalazi na samom začelju evropskih država, što za posledicu ima slab imidž zemlje i loše startne pozicije. Međutim, pomenuti indeksi su razvijeni za potrebe EU i nedovoljno realno odslikavaju realno stanje u Srbiji, kao zemlje u tranziciji. Položaj AP Vojvodine, kao „lokomotive" razvoja Srbije, je potpuno nepoznat i ne prati se. Sve ove činjenice upućuju da postoji potreba da se definišu kvalitetniji kriterijumi, zasnovani na opšte prihvaćenim statističkim i drugim podacima, koji će realnije, celishodnije i jasnije ukazati na stepen ostvarenja ciljeva strategije, uvažiti tranzicioni karakter našeg društva, biti realni indikator stanja i koji će ukazivati na položaj AP Vojvodine na putu ka društvu znanja.
Trajanje projekta:
2011-2014. godine
Institucije učesnici / partneri:
Fakultet tehničkih nauka u Novom Sadu, Ekonomski fakulte u Subotici, Fakultet za uslužni biznis Sremska Kamenica, Mašinski fakultet Univerziteta u Mariboru
Učesnici –istraživači sa FTN
Ilija Ćosić, Ilija Kovačević, Jelena Borocki, Andrea Katić, Željko Tekić, Nemanja Sremčev
Oprema nabavljena iz projektnih sredstava

Project of Technological Development – Title:

COMPTITIVENESS AND KNOWLEDGE AS DEVELOPMENT DRIVER IN VOJVODINA

Project code / acromin:

-

Web site:

-

Grandholder

Professor Ilija Ćosić, PhD – Faculty of Technical Sciences

Coordinator FTN:

Professor Ilija Ćosić , PhD

Scientific Research Fields / Type of research (Fundamental / Applied / Development)

Law and Economic Sciences

Summary:

The high national competitiveness leads to sustainable economic growth, high employment rates and social cohesion. Therefore, in 2000 the European Commission put increment of competitiveness as one of its main strategic goals, which is known as the so-called Lisbon strategy. A key component of this strategy was the development and advancement of knowledge. The information revolution of the late twentieth century, stress that the further progress of the community is not depend exclusively on purely economic parameters, but the knowledge, innovation, and entrepreneurship have become key terms of growth of national competitiveness. The new ten-year strategy "Europe 2020", set in 2011, is also focused on competitiveness, and is based on three key pillars of development: knowledge, sustainability and inclusiveness. Serbia as a candidate country for EU membership, has defined the strategic document "Serbia 2020", which follows the structure of the European Commission, taking into account the specificities of the Republic of Serbia. Although both strategies define clear objectives, a basic problem that arises, is how to define measurable indicators, monitor and control set objectives.

It is common know that there are many competitiveness indices, which monitors various factors. Serbia's ranking on these indices is usually weak; Serbia is located at the header field of the European countries, which results in poor image of the country and the poor starting position.

However, the above indices were developed for the EU and not enough reflect the real situation in Serbia, as a country in transition. Position of AP Vojvodina, is completely unknown and is not monitored. All these facts indicate that there is a need for defining quality criteria, based on generally accepted statistical and other data, which will more realistically, more appropriate, and more clearly indicate the degree of objectives fulfillment, take into account the transitional nature of our society, and be a real indicator which will indicate the position of the AP of Vojvodina in knowledge society.

Duration:

Years 2011-2014.

***Partners**:*

Faculty of Technical Sciences in Novi Sad, Faculty of Economics in Subotica, Faculty of Service Business in Sremska Kamenica, Faculty of mechanical Engineering University in Maribor

Researchers *from the FTS:*

Ilija Ćosić, Ilija Kovačević, Jelena Borocki, Andrea Katić, Željko Tekić, Nemanja Sremčev

Equipment purchased from project funds:

Projekat tehnološkog razvoja – naziv:
RAZVOJ ROBOTSKE PLATFORME ANTROPOMORFNIH KARAKTERISTIKA ZA OSTVARIVANJE SOCIJALNO PRIHVATLJIVE I ADEKVATNE INTERAKCIJE U RADNOM OKRUŽENJU ČOVEKA
Oznaka projekta / akronim:
114-451-2116/2011-01
Web:
Rukovodilac projekta:
Prof. dr Branislav Borovac – Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Branislav Borovac
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Robotika/Primenjena istraživanja
Opis projekta:
S' obzirom da se očekuje da će uskoro roboti deliti životnu i radnu okolinu sa čovekom potrebno je da se obezbedi adekvano (socijalno prihvatljivo i u što je moguće većoj meri antropomorfno) ponašanje robota. Osnovna karkteristika okoline u kojoj se čovek kreće je njena nestruktuiranost. To zahteva korišćenje velikog broja senzora, a podrazumeva nekonvencionalnu obradu i «tumačenje» signala. Osnovni način uvida u reakcije robota je posmatranjem njegovog delovanja što uključuje fizičko delovanje na okolinu kao i komunikaciju (verbalnu i neverbalnu). Stoga je jasno da je za istraživanja ovog tipa neophodan posebno projektovan prototip koji hardverski mora da omogući sva očekivanja od robota (uključujući i neverbalnu komunikaciju), dok su u upravljačkom smislu kognitivni aspekti nezobilazni. Pošto je za delovanje u okolini koja je potpuno podešena čoveku najpogodniji antropomorfni oblik robota smatramo da takav treba da bude i ovaj prototip. Realizacija dvonožnog sistema zahteva isuviše velike resurse i u ovim uslovima nije ostvariva, pa mehanička struktura treba da predstavlja samo gornji deo tela. Sistem će imati ruke, pokretnu glavu sa ekspresivnim licem i pokretan trup. Potreba za dostizanjem visokog stepena antropomorfnosti pokreta pred konstrukciju postavlja ozbiljne zadatke u smislu praktične realizacije velikog broja stepeni slobode, malih pokretnih masa itd.
Trajanje projekta:
2011-2014
Institucije učesnici / partneri:
Fakultet tehničkih nauka, Medicinski fakultet, Akademija umetnosti, Univerzitet u Segedinu
Učesnici – istraživači sa FTN:
Branislav Borovac, Nađ Laslo, Mirko Raković, Milutin Nikolić, Milan Nikolić, Kalman Babković.
Oprema nabavljena iz projektnih sredstava:
Sitna oprema za potrebe razvoja robotske platforme

Project of Technological Development – Title:
DEVELOPMENT OF ANTHROPOMORPHIC ROBOTIC PLATFORM FOR SOCIALLY ACCEPTABLE AND ADEQUATE INTERACTIONS IN HUMAN WORKING ENVIRONMENT
Project code / acronym:
114-451-2116/2011-01
Web site:
Grantholder:
Professor Branislav Borovac, PhD – Faculty of Technical Sciences
Coordinator from the Faculty of Technical Sciences:
Professor Branislav Borovac, PhD
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Robotics/Applied research
Project Summary:
Since it is expected that robots will soon share the living and working environment with humans it is necessary to provide adequate (socially acceptable, and to the greatest possible extent anthropomorphic) behavior of the robots. The basic characteristic of human's environment is that it is unstructured. This requires the use of a large number of sensors, and implies unconventional signal processing and "interpretation". The easiest way to evaluate the behavior of the the robot is by observing the robot when acting in the environment, which includes both physical activity on the environment and communication (verbal and nonverbal). Therefore, it is clear that for this research it is necessary to design special prototype hardware that will provide all the expectations from the robot (including non-verbal communication), while in terms of control the cognitive aspects are unavoidable. Since the robots should act in an environment that is completely adopted to humans the most suitable form of robots is humanoid and we believe that the prototype developed in this project should be such. Realization of biped system requires large amount of resources and in this moment it is not feasible. Thus, the mechanical structure should represent only the upper part of the body. The system will have arms, head with an expressive face and torso. The need for achieving a high degree of anthropomorphic movements sets high requirements for the construction of the robot in the terms of practical implementation of a large number of degrees of freedom, small moving mass etc.
Duration of the project:
2011-2014
Partners:
Faculty of Technical Sciences, Faculty of Medicine, Academy of Arts, University of Szeged
Researchers from the FTS:
Branislav Borovac, Nađ Laslo, Mirko Raković, Milutin Nikolić, Milan Nikolić, Kalman Babković.
Equipment purchased from the project funds:
Small equipment needed for the development of robotic platform

Ministarstvo prosvete, nauke i tehnološkog razvojna
Republike Srbije

Projekti Integralnih i interdisciplinarnih istraživanja

III

Ministry of Education, Science and Technology Development
Republic of Serbia

Projects of Integral and Interdisciplinary Research

IIR

Projekti Integralnih i interdisciplinarnih istraživanja – naziv:

RAZVOJ I PRIMENA MULTIFUNKCIONALNIH MATERIJALA NA BAZI DOMAĆIH SIROVINA MODERNIZACIJOM TRADICIONALNIH TEHNOLOGIJA

Oznaka projekta / akronim:

III 45008

***Web*:**

Rukovodilac projekta:

Prof. dr Jonjaua Ranogajec, Tehnološki fakultet u Novom Sadu

Rukovodilac projekta sa FTN:

Prof. emeritus Leposava Šiđanin

Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)

Integralna interdisciplinarna istraživanja – III

Opis projekta:

Razvoj inovativnih građevinskih materijala sa dodatom vrednošću i novim funkcijama u zaštiti okoline, zasnovan na valorizaciji domaćih sirovinskih resursa i primeni sekundarnih sirovina, uz optimizaciju energetske potrošnje primenom manje energetski intenzivnih tehnologija je glavni cilj istraživanja.
Projekat se sastoji od tri podprojekta:

1. Podprojekat 1: Pucolanski malteri na bazi kalcinisanih glina mineraloški nižeg kvaliteta i sekundarnih sirovina, rukovodilac Jonjaua Ranogajec, redovni profesor, TF, Novi Sad
2. Podprojekat 2: Razvoj materijala sa fotokatalitičkom funkcijom samočišćenja, rukovodilac Tatjana Vulić, docent, TF, Novi Sad
3. Podprojekat 3: Proizvodnja opekarskih proizvoda poboljšanih svojstava na bazi primarnih i sekundarnih sirovina, rukovodilac Zagorka Radojević, naučni savetnik, IMS, Beograd

Razvoj efikasnih tehnologija u cilju valorizacije sirovina siromašnih glinenim mineralima i sekundarnih sirovina (industrijskih nusproizvoda) u proizvodnji serije pucolanskih maltera očekivan je rezultat potprojekta 1. Novi komercijalni malteri visoke pucolanske aktivnosti i niže cene i reparaturni malteri za objekte kulturne baštine doprineće ekonomiji i zaštiti okoline. Potprojekat 2 je usmeren na razvoj novih fotokatalitičkih nanokompozita na bazi slojevitih hidroksida i TiO2 i/ili drugih poluprovodnika, i njihovu primenu u dobijanju građevinskih materijala sa funkcijom samočišćenja (razgradnje organskih, mikrobioloških i neorganskih polutanata). Fundamentalna saznanja o fizičko-hemijskim i katalitičkim osobinama osnov su za dobijanje novih proizvoda sa dodatnom vrednošću (fasadne boje, glineni, pucolanski i stenski materijali). Primena industrijskog otpada u cilju dobijanja visokoporoznih opekarskih proizvoda, matematičko modelovanje procesa sušenja i razvoj vatrostalnih materijala za sanaciju industrijskih peći predstavlja predmet istraživanja potprojekta 3.

Trajanje projekta:

2011-2015

***Institucije učesnici / partneri**:*

Tehnološki fakultet u Novom Sadu, Fakultet tehničkih nauka u Novom Sadu, IMS- Institut za ispitivanje materijala, Institut za nuklearne nauke „Vinča", Institut za tehnologiju nuklearnih i drugih mineralnih sirovina, Poljoprivredni fakultet u Novom Sadu, Prirodnomatematički fakultet u Novom Sadu, Fakultet za graditeljski menadžment Union univerziteta u Beogradu

Učesnici –istraživači sa FTN

Leposava Šiđanin, Dragan Rajnović, Sebastian Baloš, Miroslava Radeka

Oprema nabavljena iz projektnih sredstava

Projects of Integral and Interdisciplinary Research -Title
DEVELOPMENT AND APPLICATION OF MULTIFUNCTIONAL MATERIALS USING DOMESTIC RAW MATERIALS IN UPGRADED PROCESSING LINES
Project code / Acronym:
III 45008
Web site:
Grantholder
Professor Jonjaua Ranogajec, PhD - Faculty of Technology in Novi Sad,
Coordinator FTS:
Professor emeritus Leposava Šiđanin
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Integral Interdisciplinary Research - III
Summary:
Project is directed towards development of innovative environmental friendly building materials with value added functions, based on valorization of available resources and secondary raw materials, developing lower energy intensive technologies and optimizing energy consumption. Novel technology for production of materials with high pozzolanic activities using low grade clays and industrial by-products is the objective of Subproject 1, contributing to both economy of production and environmental protection. A series of commercial mortars based on pozzolanic active phase will be developed, including new repair mortars for architectural heritage restoration, compatible with original material matrix. Photocatalytic nanocomposites, layered double hydroxides associated to TiO2 and/or other semiconductors, and their application in design of self-cleaning building materials are in the focus of Subproject 2. Knowledge on interactions of photoactive coatings with different inorganic substrates will form the basis for design of new value added building materials on regional market. Subproject 3 subject will be brick drying process development, industrial waste application (organic and inorganic waste as additives for porous bricks), mathematical modeling and development of refractory materials for industrial furnaces reparation. The outcome will be: bricks with highly improved properties, constructive-refractory materials and improved energetic efficiency of industrial plants.
Duration:
2011-2015
***Partners**:*
Faculty of Technology in Novi Sad, Faculty of Technical Sciences in Novi Sad, IMS Institute Belgrade - Institute for Testing of Materials, Vinca Institute for Nuclear Sciences, Institute for Technology of Nuclear and other Raw Materials (ITNMS) Belgrade, Faculty of Agronomy in Novi Sad, Faculty of Sciences in Novi Sad, Faculty of Construction Management, Union University
Researchers from the FTS:
Leposava Šiđanin, Dragan Rajnović, Sebastian Baloš, Miroslava Radeka
Equipment purchased from project funds:

Projekti Integralnih i interdisciplinarnih istraživanja – naziv:
PAMETNE ELEKTRODISTRIBUTIVNE MREŽE ZASNOVANE NA DISTRIBUTIVNOM MENADŽMENT SISTEMU I DISTRIBUIRANOJ PROIZVODNJI
Oznaka projekta / akronim:
III 42004
Web:
Rukovodilac projekta:
Prof. dr Dragan Popović, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Dragan Popović
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Integralna interdisciplinarna istraživanja – III
Opis projekta:
Funkcionalnost elektrodistributivnih mreža ovim projektom podići će se na vrlo visok nivo nametnut potrebama 21. veka. Taj nivo je definisan konceptom pametnih elektrodistributivnih mreža. Ovim projektom se koncept pametnih mreža tretira kao integracija dva velika softverska proizvoda: DMS Softver i SCADA sistem, s jedne strane i distribuirane proizvodnje i ostalih energetskih resursa s druge strane. Sociološkim i aspektima zaštite životne sredine u ambijentu s primenjenim pametnim mrežama posvećena je posebna pažnja. Osnovna istraživanja DMS Softvera vršena su i vrše se na Katedri za elektroenergetiku FTN; SCADA sistem se razvija u Institutu Mihajlo Pupin. Time je obezbeđena kvalitetna osnova za integraciju ta dva velika softverska sistema u DMS (Distributivni menadžment sistem). S druge strane, osnovna istraživanja potrebna za razvoj koncepta distribuirane proizvodnje vrše se na Katedri za energetsku elektroniku i pretvarače FTN kao i u Institutu Mihajlo Pupin. Time je stvorena kvalitetna osnova za integraciju distribuirane proizvodnje s DMS-om. Konačno, sociološki i aspekt zaštite životne sredine u ambijentu pametnih elektrodistributivnih mreža istražuju se na Departmanu za opšte discipline u tehnici i Departmanu za inženjerstvo zaštite životne sredine i zaštite na radu FTN, respektivno. Na taj način, realizatori ovog projekta u potpunosti su spremni da se suoče sa interdisciplinarnošću predmeta projekta - pametnih mreža - kao jednim od najvećih izazova na početku 21. veka.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Institut „Mihajlo Pupin" u Beogradu, Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Vladimri Strezorski, Vlado Porobić, Marko Vekić, Vladimir Katić, Boris Dumnić, Veran Vasić, Branka Nakomčić-Smaragdakis, Dragan Popović, Dejan Reljić, Miroslav Nimrihter, Jovan Lukić, Goran Švenda, Đura Oros, Predrag Vidović, Izabela Stefani, Evgenije Adžić, Duško Bekut, Zoran Ivanović, Andrija Šarić, Ervin Varga, Radoš Radivojević, Aleksandar Janjić, Dragan Milićević, Nikola Čelanović, Darko Marčetić, Marko Gecić, Milan Gornik, Neven Kovački, Stevan Cvetićanin, Stevan Grabić
Oprema nabavljena iz projektnih sredstava

Projects of Integral and Interdisciplinary Research -Title
SMART ELECTRICITY DISTRIBUTION GRIDS BASED ON DISTRIBUTION MANAGEMENT SYSTEM AND DISTRIBUTED GENERATION
Project code / Acronym:
III 42004
Web site:
Grantholder
Professor Dragan Popović, PhD - Faculty of Technical Sciences in Novi Sad
Coordinator FTS:
Professor Dragan Popović, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Integral Interdisciplinary Research - III
Summary:
This project will raise the functionality of electricity distribution networks to a very high level imposed by the 21st century needs. This level is defined by Smart Grid concept which is considered in this project as an integration of two large software products: DMS Software and SCADA system on one, and distributed generation and other energy resources on the other side. Special attention will be paid to both sociological and environmental protection aspects of the Smart Grid effects. Basic researches on DMS Software are done at the Power Engineering Department at the Faculty of Technical Sciences (FTS) and ones on SCADA system at Mihajlo Pupin Institute, providing a quality basis for the integration of the two software systems in DMS (Distribution Management System). Basic research necessary for distributed generation concept is done at the Department of Power Electronics and Converters at FTS as well as at the Mihajlo Pupin Institute, providing a quality basis for the integration of distributed generation with DMS. Finally, the researches on sociological and environmental protection aspects are done at the Department for Fundamental Disciplines and the Department for Environmental Engineering at FTS, respectively. In this way, executors of this project are fully prepared to face the interdisciplinary nature of this project subject - Smart Electricity Distribution Grids - as one of the biggest challenges at the beginning of the 21st century.
Duration:
2011-2015
***Partners**:*
Nikola Tesla Institute of Electrical Engineering in Belgrade, Faculty of Technical Sciences in Novi Sad
Researchers from the FTS:
Vladimri Strezorski, Vlado Porobić, Marko Vekić, Vladimir Katić, Boris Dumnić, Veran Vasić, Branka Nakomčić-Smaragdakis, Dragan Popović, Dejan Reljić, Miroslav Nimrihter, Jovan Lukić, Goran Švenda, Đura Oros, Predrag Vidović, Izabela Stefani, Evgenije Adžić, Duško Bekut, Zoran Ivanović, Andrija Šarić, Ervin Varga, Radoš Radivojević, Aleksandar Janjić, Dragan Milićević, Nikola Čelanović, Darko Marčetić, Marko Gecić, Milan Gornik, Neven Kovački, Stevan Cvetićanin, Stevan Grabić
Equipment purchased from project funds:

Projekti Integralnih i interdisciplinarnih istraživanja – naziv:
ZAJEDNIČKA ISTRAŽIVANJA MERENJA I UTICAJA JONIZUJUĆEG ZRAČENJA U UV ZRAČENJA U OBLASTI MEDICINE I ZAŠTITE ŽIVOTNE SREDINE
Oznaka projekta / akronim:
III 43011
Web:
http://www.apl.elfak.rs/III43011/index.php
Rukovodilac projekta:
Prof. dr Goran Ristić, Elektronski fakultet u Nišu
Rukovodilac projekta sa FTN:
Ljubica Župunski
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Integralna interdisciplinarna istraživanja – III
Opis projekta:
Projekat III 43011 predstavlja integralni i interdisciplinarni projekat koji obuhvata istraživanja iz oblasti fizike, elektronike, medicine, biologije, hemije, sociologije i psihologije. Projekat predstavlja kombinaciju osnovnih i primenjenih istraživanja i razvojna u oblasti merenja jonizujućeg i UV zraćenja, primene u dijagnostici i terapiji u medicini kao i radiološkoj zaštiti i zaštiti životne sredine.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Građevinsko-arhitektonski fakultet u Nišu, Elektronski fakultet u Nišu, Medicinski fakultet u Nišu, Prirodnomatematički fakultet u Nišu, Tehnički fakultet u Boru, Tehnološko-metalurški fakultet u Beogradu, Fakultet zaštite na radu u Nišu, Fakultet tehničkih nauka u Novom Sadu, Filozofski fakultet u Nišu, Filozofski fakultet u Novom Sadu
Učesnici –istraživači sa FTN
Ivan Župunski, Zoran Mitrović, Ljubica Župunski
Oprema nabavljena iz projektnih sredstava
Softver Wolfram Mathematica, PC

Projects of Integral and Interdisciplinary Research -Title
JOINT RESEARCH OF MEASUREMENTS AND EFFECTS OF IONIZING AND UV RADIATION IN MEDICINE AND ENVIRONMENTAL PROTECTION
Project code / Acronym:
III 43011
Web site:
http://www.apl.elfak.rs/III43011/index.php
Grantholder
Professor Goran Ristić, Faculty of Electronic Engineering
Coordinator FTS:
Ljubica Župunski
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Integral Interdisciplinary Research – III
Summary:
Project III43011 is an integral and interdisciplinary project gathering the people from various institutions and various research fields of physics, electronics, medicine, biology, chemistry, sociology and psychology. The project is a combination of basic, applied and developmental research in the fields of measurements of ionizing and UV radiation, their applications within diagnostics and therapy in medicine, and environmental and radiological protection.
Duration:
2011-2015
***Partners**:*
Faculty of Civil Engineering and Architecture in Nis, Faculty of Electronic Engineering in Nis, Faculty of Medicine in Nis, Faculty of Science and Mathematics in Nis, Technical Faculty in Bor, Faculty of Technology and Metallurgy in Belgrade, Faculty of Occupational Safety in Nis, Faculty of Technical Sciences in Novi Sad, Faculty of Philosophy in Nis, Faculty of Philosophy in Novi Sad
Researchers from the FTS:
Ivan Župunski, Zoran Mitrović, Ljubica Župunski
Equipment purchased from project funds:
Software Wolfram Mathematica, PC

Projekti Integralnih i interdisciplinarnih istraživanja – naziv:

RAZVOJ METODA, SENZORA I SISTEMA ZA PRAĆENJE KVALITETA VODE, VAZDUHA I ZEMLJIŠTA

Oznaka projekta / akronim:

III 43008

Web:

Rukovodilac projekta:

Prof. dr Miloš Živanov, Fakultet tehničkih nauka u Novom Sadu

Rukovodilac projekta sa FTN:

Prof. dr Miloš Živanov

Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)

Integralna interdisciplinarna istraživanja – III

Opis projekta:

Izučava se više tema koje su povezane sa kvalitetom vode, vazduha i zemljišta. Prvo su izvršen detaljne analize postojećih metoda određivanja parametara životne sredine. Razmatraju se različite, hemijske i fizičke metode analiza kvaliteta okoline. Primenom novih saznanja i novih modernih tehnologija predložene su nove i usavršene stare metode. Na osnovu postojećih i novih znanja razvijaju se novi senzori. Pomoću postojećih i novih senzora projektovaju se sistemi za automatsko i kontinualno praćenje stanja okoline. Razvijeni sistemi će se postaviti u realnim uslovima i testirati u dužem vremenskom periodu. Projekat je podeljen na 7 tematskih podprojekata:

1. Razvoj senzora i sistema
2. Hemijska i fizička svojstva u terenskim i laboratorijskim uslovima
3. Razvoj komunikacionih sistema i sistema za nadzor i besprekidno napajanje obnovljivim izvorima energije
4. Fotospektroskopija u terenskim i laboratorijskim uslovima
5. Projetovanje RF i analognih elektronskih kola za senzore
6. Razvoj instrumenata i sistema za merenja parametara vode u bušotinama
7. Pravna regulativa instalisanja mernih sistema i regulativa patentnih prava.

Pored naučnih istrživanja, cilj projekta je projektovanje i realizacija konkretnih uređaja koji će se koristiti u terenskim uslovima. U planu je patentiranje i komercijalizacija razvijenih uređaja. Kao rezultat projekta očekuje se nekoliko tehničkih rešenja i patenata, nekoliko doktorskih teza i veći broj naučnih radova u časopisima i konferencijama.

Trajanje projekta:

2011-2015

Institucije učesnici / partneri:

Institut za telekomunikacije „IRITEL" a.d., Pravni fakultet, Prirodnomatematički fakultet i Fakultet tehničkih nauka Univerziteta u Novom Sadu , Novilog, D.O.O.

Učesnici –istraživači sa FTN

Josif Tomić, Borivoj Stepanov, Đurić Slavko, Vladimir Rajs, Jelena Radić, Vladimir Milosavljević, Laslo Nađ, Višnja Mihajlović, Mirjana Videnović-Mišić, Dragan Stupar, Dušan Sakulski, Đorđe Ćosić, Jovan Bajić, Miloš Slankamenac, Biljana Miljković, Miloš Živanov, Kalman Babković, Alena Đugova, Živorad Mihajlović, Đorđe Obradović, Dalibor Sekulić, Viktor Dogan, Miodrag Brkić, Miodrag Brkić, Ana Joža, Zorica Dudarin, Srđan Popov, Miodrag Jelić, Bojan Dakić, Miodrag Jelić, Bojan Dakić, Miodrag Jelić, Lazo Manojlović, Nebojša Cvijić, Dusan Zivkovic

Oprema nabavljena iz projektnih sredstava

Projects of Integral and Interdisciplinary Research -Title
DEVELOPMENT OF THE METHODS, SENSORS AND SYSTEMS FOR MONITORING QUALITY OF WHATER, AIR AND SOIL
Project code / Acronym:
III 43008
Web site:
Grantholder
Professor Miloš Živanov, PhD – Faculty of Technical Sciences in Novi Sad
Coordinator FTS:
Professor Miloš Živanov
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Integral Interdisciplinary Research – III
Summary:
A number of subjects related to the quality of water, air and soil will be researched. Different chemical and physical methods of analysis of the quality of the environment will be considered. On the basis of existing and new knowledge, new sensors will be developed. Using existing and new sensors, systems for automatic and continuous monitoring of environmental conditions will be designed. The developed systems will be installed in real conditions and tested during a long period of time. The project is divided into 7 thematic subprojects: 1. Development of sensors and systems, 2. Chemical and physical properties in the field and laboratory conditions, 3. Development of communication systems for monitoring and uninterrupted power supply by renewable energy sources, 4. Photospectroscopy in the field and laboratory conditions, 5. Design of RF and analog electronic circuits for sensors, 6. Development of instruments and systems for measuring of parameters in water wells and 7. Legislation of installation of measuring systems and regulation of patent rights. In addition to scientific research, the aim of the project is the design and implementation of concrete devices to be used in field conditions. The plan is the patenting and commercialization of the developed devices. As a result of the project several technical solutions and patents, several PhD theses and a number of scientific papers in journals and at conferences will be expected.
Duration:
2011-2015
***Partners**:*
Institut za telekomunikacije „IRITEL" a.d., IRITEL – Institute for Telecommunication Networks Design and Engineering, Faculty of Low, Faculty of Sciences and Faculty of Technical Sciences University of Novi Sad, Novilog, D.O.O.
Researchers from the FTS:
Josif Tomić, Borivoj Stepanov, Đurić Slavko, Vladimir Rajs, Jelena Radić, Vladimir Milosavljević, Laslo Nađ, Višnja Mihajlović, Mirjana Videnović-Mišić, Dragan Stupar, Dušan Sakulski, Đorđe Ćosić, Jovan Bajić, Miloš Slankamenac, Biljana Miljković, Miloš Živanov, Kalman Babković, Alena Đugova, Živorad Mihajlović, Đorđe Obradović, Dalibor Sekulić, Viktor Dogan, Miodrag Brkić, Miodrag Brkić, Ana Joža, Zorica Dudarin, Srđan Popov, Miodrag Jelić, Bojan Dakić, Miodrag Jelić, Lazo Manojlović, Nebojša Cvijić, Dusan Zivkovic
Equipment purchased from project funds:

Projekti Integralnih i interdisciplinarnih istraživanja – naziv:
DIGITALNE MEDIJSKE TEHNOLOGIJE I DRUŠTVENO-OBRAZOVNE PROMENE
Oznaka projekta / akronim:
III 47020
Web:
Rukovodilac projekta:
Prof. dr Milica Andevski, Filozofski fakultet u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Željen Trpovski
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Integralna interdisciplinarna istraživanja – III
Opis projekta:
Multidisciplinarni projekat bavi se uticajem novih tehnologija na društvene promene. Podeljen je na nekoliko celina: 1. Analiza procesa digitalizacije proizvodnje i prenosa televizijskog programa, 2. Analiza i oblikovanje vaspitne uloge medija u digitalnom kontekstu 3. Transformacija novinarske prakse u digitalnom okruženju.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Akademija umetnosti u Novom Sadu, Pedagoški fakultet u Somboru, Fakultet za menadžment u Novom Sadu, Fakultet za uslužni biznis, Sremska Kamenica, Fakultet tehničkih nauka u Novom Sadu, Filozofski fakultet u Novom Sadu, Filološki fakultet u Beogradu
Učesnici –istraživači sa FTN
Željen Trpovski, Ljubica Duđak, Leposava Grubić Nešić, Nikša Jakovljević
Oprema nabavljena iz projektnih sredstava
Nema

Projects of Integral and Interdisciplinary Research -Title
DIGITAL MEDIA TECHNOLOGIES AND SOCIO-EDUCATIONAL CHANGES
Project code / Acronym:
III 47020
Web site:
Grantholder
Professor Milica Andevski, PhD - Faculty of Philosophy in Novi Sad
Coordinator FTS:
Professor Željen Trpovski, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Integral Interdisciplinary Research - III
Summary:
Multidisciplinary project concerns the influence of new technologies upon the social changes. The projects consists of several entities: 1. Analyzing the process of digitalization of TV program production and transmission, 2. Analyzing and shaping the educational role of digital media 3. Transform the journalist experience in digital surrounding.
Duration:
2011-2015
***Partners**:*
Academy of Arts in Novi Sad, Faculty of Education in Sombor, Faculty of Management in Novi Sad, University Educons, Faculty of Technical Sciences in Novi Sad, Faculty of Philosophy in Novi Sad, Faculty of Philosophy in Belgrade
Researchers from the FTS:
Željen Trpovski, Ljubica Dođak, Leposava Grubić Nešić, Nikša Jakovljević
Equipment purchased from project funds:
None

Projekti Integralnih i interdisciplinarnih istraživanja – naziv:
OPTOELEKTRONSKI NANODIMENZIONI SISTEM – PUT KA PRIMENI
Oznaka projekta / akronim:
III 45003
Web:
http://ons.raf.rs
Rukovodilac projekta:
Dr Nebojša Romčević, Institut za fiziku
Rukovodilac projekta sa FTN:
Docnent dr Miloš Slankamenac
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Integralna interdisciplinarna istraživanja – III
Opis projekta:
Aktivnosti ovog projekta su fokusirane na sintezu, eksprimentalna i teorijska istraživanja na širokom spektru nanodimenzionih optoelektronskih materijala sa ciljem približavanja praktičnoj realizaciji do nivoa invencije. Sveobuhvatna istraživanja sprovodiće se na sedam potprojekata: - Sinteza nanomaterijala i struktura - Teorija optičkih osobina nanostruktura - Elektronski principi formiranja i funkcionisanja nanostruktura - Primena računara u povezivanju teorijskih, eksperimentalnih i primenjenih istraživanja - Karakterizacija nanočestica i nanostruktura - Ispitivanje električnih karakteristika novih materijala i projektovanje senzora sa optičkim vlaknima - Nanostrukturni optoelektronski senzorski sistemi
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Geoekonomski fakultet u Beogradu, Građevinski fakultet u Beogrdau, Elektrotehnički fakultet u Beogradu, Institut za nuklearne nauke „Vinča", Institut za fiziku u Beogradu, Mašinski fakultet u Beogradu, Stomatološki fakultet u Beogradu, Tehnološko-metalurški fakultet u Beogradu, Univerzitet Union – Računarski fakultet, Fakultet za poslovne studije u Vršcu, Fakultet tehničkih nauka u Novom Sadu, Novilog, doo, Novi Sad
Učesnici –istraživači sa FTN
Vladimir Rajs, Vladimir Milosavljević, Dragan Stupar, Jovan Bajić, Miloš Slankamenac, Miloš Živanov, Živorad Mihajlović, Đorđe Obradović, Dalibor Sekulić, Viktor Dogan, Miodrag Brkić, Miodrag Jelić, Lazo Manojlović, Nebojša Cvijić
Oprema nabavljena iz projektnih sredstava
- S153A Splicer - prenosni spajač optickih vlakana (splajser) + S325A Cleaver (Sekač) *- Reference 600 Potentiostat/Galvanostat/ZRA+ EIS300 Electrochemical Impedance Spectroscopy Software License+ Electrochemical. Cel.I. .Kit* *- SR830 DSP Lock-In Amplifier* *- Set opreme za optičku klupu* *- Set opreme za rad sa staklenim i plastičnim optičkim vlaknima* *- Set fotopredajnika i fotoprijemnika* *- Oscilloscope MSO2024* *- 85070E Dielectric Probe Kit*

Projects of Integral and Interdisciplinary Research -Title
OPTOELECTRONICS NANODIMENSION SYSTEMS - THE ROUT TOWARDS APPLICATIONS
Project code / Acronym:
III 45003
Web site:
http://ons.raf.rs
Grantholder
Nebojša Romčević, PhD - Institute of Physics
Coordinator FTS:
Ass. Professor Miloš Slankamenac, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Integral Interdisciplinary Research - III
Summary:
The activities of this project are focused on the synthesis of experimental and theoretical research on a wide range nanodimenzionih optoelectronic material with the aim of making practical implementation to the level of inventiveness. A comprehensive survey will be conducted in seven sub-projects.
Duration:
2011-2015
***Partners**:*
Faculty of International Economics, Megatrend University, Faculty of Civil Engineering, School of Electrical Engineering, Vinca Institute for Nuclear Scinences, Institute of Physics, Faculty of Mechanical Engineering, Faculty of Dental Medicine, Faculty of Technology and Metallurgy, Union University - Faculty of Computer Science, e Faculty of Business Studies of Megatrend University, Faculty of Technical Sciences in Novi Sad, Novilog, doo, Novi Sad
Researchers from the FTS:
Vladimir Rajs, Vladimir Milosavljević, Dragan Stupar, Jovan Bajić, Miloš Slankamenac, Miloš Živanov, Živorad Mihajlović, Đorđe Obradović, Dalibor Sekulić, Viktor Dogan, Miodrag Brkić, Miodrag Jelić, Lazo Manojlović, Nebojša Cvijić
Equipment purchased from project funds:
- S153A Splicer + S325A Cleaver (Sekač) *- Reference 600 Potentiostat/Galvanostat/ZRA+ EIS300 Electrochemical Impedance Spectroscopy Software License+ Electrochemical. Cel.I. .Kit* *- SR830 DSP Lock-In Amplifier* *- Set of equipmnt for the optical bench* *- Set of equipment to work with glass and plastic optical fiber* *- Set photo-transmitters and photo-receivers* *- Oscilloscope MSO2024* *- 85070E Dielectric Probe Kit*

Projekti Integralnih i interdisciplinarnih istraživanja – naziv:
ISTRAŽIVANJE I RAZVOJ PLATFORME ZA NAUČNU PODRŠKU U ODLUČIVANJU I UPRAVLJANJU NAUČNIM I TEHNOLOŠKIM RAZVOJEM U SRBIJI
Oznaka projekta / akronim:
III 47005
Web:
http://www.pupin.rs/naucnoistrazivacki-projekti/nacionalni-projekti/
Rukovodilac projekta:
Dr Đuro Kutlača, Institut Mihajlo Pupin u Beogradu
Rukovodilac projekta sa FTN:
Prof. dr Vojin Šenk
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Integralna interdisciplinarna istraživanja – III
Opis projekta:
Cilj projekta je kreiranje metodološke, informaciono-dokumentacione i analitičke podrške upravljanja naučnim i tehnološkim (NT) razvojem u Srbiji. U te svrhe istraživanja se organizuju u dva podprojekta: prvi čine istraživanja kvantitativnih pokazatelja NT razvojna, koja treba da za rezultat daju međunarodno uporedive indikatore nauke, tehnologije i inovacija u Srbiji, kao i istraživanje mehanizama kojima se naučnim istraživanjima utičej na održivi razvoj celog društva; drugi podprojekat su istraživanja inovacionih aktivnosti u ekonomiji u Srbiji, u cilju izgradnje instrumenata i mehanizama za efikasan transfer i difuziju tehnologija, podsticanje inovacionih aktivnosti i povećanje kapaciteta za prihvatanje tehnologija u preduzećima i ukupnih inovacionih kapaciteta preduzeća u Srbiji, kao i izgradnju mreža za transfer i difuziju tehnologija u Srbiji. Prvi podprojekat je "Mapiranje oblasti nauka i tehnologija u Srbiji", sa dve teme: Tema 1 je razvoj indikatora i informacionih alata za praćenje i evaluaciju nauke i tehnologije u Srbiji. Tema 2 je održivi razvoj izabranih oblasti nauke i tehnologije u Srbiji. Koncept održivog razvojna je globalna potreba. Drugi podprojekat je "Razvoj nacionalnog inovacionog sistema u Srbiji“, sa tri teme. Prva tema je istraživanje mehanizama za transfer i difuziju tehnologija u Srbiji, i to: (a) analiza različitih programa uz isticanje studija "najbolje prakse", u cilju identifikacije procedura za monitoring i evaluaciju programa za transfer i difuziju tehnologija; i (b) sinteza mehanizama i instrumenata za izgradnju kapaciteta za prihvatanje tehnologija u preduzećima, povećanje inovacionih aktivnosti u preduzećima, kao i izgradnju mreža za transfer i difuziju tehnologija u Srbiji. Druga podtema je merenje performansi preduzeća u cilju određivanja njihovih inovacionih kapaciteta, da se odredi njihov karakter sa aspekta radikalnih i evolutivnih efekata i utvrdi kauzalne veze sa performansama efektivnosti i efikasnosti. Treća tema je razvoj markoekonomskog modela za izabrane sektore ekonomije Srbije, u okviru koje se istražuju konkurentnost i evropska integracija Srbije; održivi razvoj Srbije u uslovima globalnih ekonomskih promena; kao i značaj NT razvojna za društveno-ekonomski razvoj zemlje
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Ekonomski fakultet u Kragujevcu, Ekonomski fakultet u Nišu, Ekonomski fakultet u Subotici, Institut Mihajlo Pupin u Beogradu, Institut za nuklearne nauke Vinča, Fakultet organizacionih nauka u Beogradu, Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Vojin Šenk, Jelena Borocki, Dušan Dobromirov, Đorđe Ćelić, Mladen Radišić, Predrag Vidicki, Vesna Rašković Depalov
Oprema nabavljena iz projektnih sredstava

Projects of Integral and Interdisciplinary Research -Title
RESEARCH AND DEVELOPMENT OF THE PLATFORM FOR SCIENCE BASED MANAGEMENT OF THE SCIENTIFIC AND TECHNOLOGICAL DEVELOPMENT OF THE REPUBLIC OF SERBIA
Project code / Acronym:
III 47005
Web site:
Grantholder
Đurko Kutlača, PhD- Institute "Mihajlo Pupin" Belgrade,
Coordinator FTS:
Professor Vojin Šenk, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Integral Interdisciplinary Research - III
Summary:
The overall goal of the project is to create methodological, information and documentation, and analytycal support to management of science and technology (S&T) and development in Republic of Serbia. The project is organized in 2 working packages (WP): WP1 consists of research of quantitative indicators of S&T development, which outcome should be international comparable S&T and innovation indicators in Serbia; and of research of mechanisms for a proper functioning of the S&T sector, enabling it to give a full contributionto the sustainable development of the country; WP2 consists of research and innovation activities (IA) in economy in Serbia and aim is to build mechanisms for efficient diffusion of tehnologies, stimulating IA and building of innovation capacities for adoption of technologies in companies in Serbia, and creation networks for technology diffusion in Serbia. The WP1 has 2 themes: T1) Development of indicators and information tools for monitoring and evaluation of S&T and Innovation activities (IA) in Serbia. Objective is to establish system of STI statistics which will be used as analyitycal and policy support tool and which is internationally comparable.
Duration:
2011-2015
***Partners**:*
Faculty of Economics u Kragujevcu, Faculty of Economics in Nis, Faculty of Economics in Subotica, Institute "Mihajlo Pupin" Belgrade, Vinča Institute of Nuclear Science in Belgrade, Faculty of Organizational Sciences in Belgrade, Faculty of Technical Sciences in Novi Sad
Researchers from the FTS:
Vojin Šenk, Jelena Borocki, Dušan Dobromirov, Đorđe Ćelić, Mladen Radišić, Predrag Vidicki, Vesna Raskovic Depalov
Equipment purchased from project funds:

Projekti Integralnih i interdisciplinarnih istraživanja – naziv:

BIOSENSING TEHNOLOGIJE I GLOBALNI SISTEM ZA KONTINUALNA ISTRAŽIVANJA I INTEGRISANO UPRAVLJANJE EKOSISTEMIMA

Oznaka projekta / akronim:

III 43002

Web:

Rukovodilac projekta:

Prof. dr Miroslav Vesković

Rukovodilac projekta sa FTN:

Prof. dr Vesna Crnojević Bengin

Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)

Integralna interdisciplinarna istraživanja – III

Opis projekta:

Projekat je podeljen na 7 potprojekata i opisanih u nastavku.

1. MONITORING EKOSISTEMA obuhvata dalji razvoj i integraciju OI u oblastima ekologije, šumarstva, poljoprivrede i javnog zdravlja (zajedno nazvanim "BIO oblasti"), pokrivajući kopnene, vodene, šumske ekosisteme i urbanu sredinu.
2. NUKLEARNE ANALITIČKE TEHNIKE ZA BIOSENSING za cilj imaju razvoj novih laboratorijskih i in-situ NT-metoda za monitoring ranije nedostupnih parametara ekosistema, kao što su koncentracije radionuklida i radona.
3. SENZORI, BEŽIČNE SENZORSKE MREŽE (BSM) I TELEDETEKCIJA ZA BIOSENSING obuhvata istraživanja u više podoblasti IKT: elektronici, telekomunikacijama, mikrotalasnoj tehnici, mikroelektronici, obradi signala, ugrađenim sistemima.
4. RAZVOJ VIS SRBIJE ZA KONTINUIRANA EKOLOŠKA ISTRAŽIVANjA okuplja istraživače iz BIO, IKT i NT oblasti, sa ciljem integrisanja i implementacije razvijenih metoda i uređaja biosensinga i formiranjem sistema VIS Republike Srbije.
5. GEOSS PORTAL, MENADžMENT I ANALIZA PODATAKA ima za zadatak da podatke dobijene monitoringom učini široko dostupnim, i lakim za tumačenje i analizu.
6. INTEGRISANO UPRAVLjANjE EKOSISTEMIMA, SOCIO-EKONOMSKI ASPEKT I UNAPREĐENjE DONOŠENjA DRŽAVNIH ODLUKA omogućava da se rezultati i zaključci naučne zajednice efikasno primene i prenesu donosiocima odluka na svim nivoima.
7. DISEMINACIJA za cilj ima upoznavanje šire naučne i društvene zajednice Srbije sa mogućnostima biosensing tehnologije i postignutim rezultatima, u cilju održivog razvojna.

Trajanje projekta:

2011-2015

Institucije učesnici / partneri:

Biološki fakultet u Beogradu, Ekonomski fakultet u Subotici, Institut „Mihajlo Pupin" u Beogradu Institut za biološka istraživanja „Siniša Stanković" u Beogradu, Instutut za nizijsko šumarstvo i životnu sredinu u Novom Sadu, Institut za nuklearne nauke „Vinča", Institut za fiziku Beograd, Medicinski fakultet u Novom Sadu, Poljoprivredni fakultet u Novom Sadu, Pravni fakultet u Novom Sadu, Prirodnomatematički fakultet u Kosovskoj Mitrovici, Prirodnomatematički fakultet u Kragujevcu, Prirodnomatematički fakultet u Nišu, Prirodnomatematički fakultet u Novom Sadu, Fakultet tehničkih nauka u Novom Sadu, Šumarski fakultet u Beogradu

Učesnici –istraživači sa FTN

Vesna Crnojević-Bengin, Vasa Radonić, Nikolina Janković, Goran Kitić, Slobodan Birgermajer, Norbert Čeljuska, Alpar Lošonc, Slavica Mitrović, Stevan Milisavljević, Vladimir Crnojević, Vladan Minić, Predrag Lugonja, Dragan Letić, Katarina Gavrić, Sanja Brdar, Milan Mirković, Tatjana Lončar-Turukalo, Vladimir Petrović, Dejan Vukobratović, Dubravko Ćulibrk, Dragana Bajić, Boris Antić, Marko Panić, Branko Brkljač, Čedomir Stefanović

Oprema nabavljena iz projektnih sredstava

Sem računarske opreme, planira se i nabavka kapitalne opreme u iznosu od 210.000 EUR. Ova oprema do sada još nije nabavljena.

Projects of Integral and Interdisciplinary Research - Title

BIOSENSING TECHNOLOGY AND GLOBAL SYSTEM FOR CONTINOUS AND INTEGRATED ECOSYSTEM MANAGEMENT

Project code / Acronym:

III 43002

Web site:

Grantholder

Professor Miroslav Vesković, PhD – Faculty of Sciences in Novi Sad

Coordinator FTS:

Professor Vesna Crnojević Bengin, PhD

Scientific Research Fields / Type of research (Fundamental / Applied / Development)

Integral Interdisciplinary Research - III

Summary:

The project consists of 7 WPs, described below.

1. ECOSYSTEM MONITORING comprises further development and integration of fundamental research in the fields of ecology, forestry, agriculture and public health (jointly referred to as the "BIO fields"), covering terrestrial, aquatic, forest, agro-ecosystems and the urban environment.
2. NUCLEAR ANALYTHICAL BIOSENSING TECHNIQUES aim at the development of novel laboratory and in-situ NT methods for monitoring of previously not available ecosystem parameters such as radionuclide and radon concentrations.
3. SENSORS, WIRELESS SENSOR NETWORKS (WSN) AND REMOTE SENSING FOR BIOSENSING encompass research in several ICT fields: electronics, telecommunications, microwave eng, microelectronics, signal processing, embedded systems.
4. DEVELOPMENT OF SERBIAN HIOS FOR CONTINUOUS ECOLOGICAL RESEARCH brings together researchers from BIO, ICT and NT fields, with the aim to integrate and implement developed biosensing methods and devices through creation of Serbian system of HIOSs.
5. GEOSS PORTAL, DATA MANAGEMENT AND ANALYSIS aims at making all monitoring data widely available, and susceptible for straightforward interpretation and analysis.
6. INTEGRATED ECOSYSTEM MANAGEMENT, SOCIO-ECONOMIC ASPECT AND CONTRIBUTION TO HIGH-LEVEL DECISSION MAKING will help efficient transfer of results and conclusions from scientific community to decision makers at all levels.
7. DISSEMINATION aims at raising awareness of Serbian scientific and wider communities about the possibilities of biosensing technologies and achieved results, with the goal of creating a sustainable development.

Duration:

2011-2015

Partners:

Faculty of Biology in Belgrade, Faculty of Econimy in Subotica, Institute „Mihajlo Pupin" in Belgrade, Institute for Biological Research „Siniša Stanković" in Belgrade, Institute of Lowland Forestry and Environment*, Vinča Institute of Nuclear Sciences, Institute of Physics Belgrade, Faculty of Medicine in Novi Sad, Faculty of Agromony in Novi Sad, Faculty of Low in Novi Sad, Faculty of Science and Mathematics Kosovska Mitrovica, Faculty of Sciences Kragujevac,Faculty of Science and Mathematics in Niš, Faculty of Science in Novi Sad, Faculty of Technical Sciences, Faculty of Forestry in Belgrade*

Researchers *from the FTS:*

Milan Narandžić, Vladan Minić, Slavica Mitrović, Stevan Milisavljević, Alpar Lošonc, Uranija Kozmidis Luburić, Dragana Bajić, Vladimir Crnojević, Selena Grujić, Nikolina Janković, Dragan Letić, Boris Antić, Milan Mirković, Čedomir Stefanović, Dejan Vukobratović, Vesna Crnojević Bengin, Dubravko Ćulibrk, Vasa Radonić, Tatjana Lončar-Turukalo, Goran Kitić, Slobodan Birgermajer, Norbert Čeljuska, Predrag Lugonja, Katarina Gavrić, Sanje Brdar, Vladimir Petrović, Marko Panić, Branko Brkljač

Equipment purchased from project funds:

Apart from standard computer equipment, purchase of the capital equipment in the amount of 210.000 EUR is foreseen. However, this equipment has not been purchased yet.

Projekti Integralnih i interdisciplinarnih istraživanja – naziv:
SINTEZA NANOPRAHOVA I PROCESIRANJE KERAMIKE I NANOKOMPOZITA SA SPECIFIČNIM ELEKTRIČNIM I MAGNETNIM SVOJSTVIMA ZA PRIMENU U INTEGRISANIM PASIVNIM KOMPONENTAMA
Oznaka projekta / akronim:
III 45021
Web:
-
Rukovodilac projekta:
Prof. dr Vladimir Srdić, Tehnološki fakultet u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Mirjana Damnjanović
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Integralna interdisciplinarna istraživanja – III
Opis projekta:
Istraživanja oksida metala prelazne grupe, posebno nanostrukturnih spinelnih feriita i perovskita, kao i njihova ugradnja u integrisane komponente, zauzima izuzetno značajno mesto u savremenim trendovima kako fundamentalnih istraživanja tako i u oblasti primene u elektronici i informacionim tehnologijama, koje su posredno ili neposredno uključene u sve pravce daljeg napretka savremenog društva. Predložena istraživanja na ovom projektu, koja pripadaju toj oblasti, su podeljena na tri potprojekta čineći kompaktnu i funkcionalnu celinu i doprinoseći interdisciplinarnosti predloženog projekta. Ti potprojekti su: (1) Sinteza nanoprahova i procesiranje keramičkih i nanokompozitnih materijala; (2) Strukturna i mikrostrukturna karakterizacija, električna i magnetna merenja nanoprahova, keramike i nanokompozita i (3) Razvoj i funkcionalna karakterizacija integrisanih pasivnih komponenti. Važan deo istraživanja biće posvećen i razvijanju metoda za testiranje i karakterizaciju razvijenih komponenti. Zbog dominantnog uticaja feritnog materijala na impedansu IPK (kao što su EMI potiskivači i transformatori) izbor feritnog materijala je veoma važan korak rpi njihovom projektovanju. Na osnovu opsega frekvencija koje je potrebno eliminisati, bira se feritni materijal koji će imati maksimalnu vrednost kompleksne permeabilnosti u kritičnom opsegu. U okviru ovog projekta (trećeg potprojekta) biće analiziran uticaj razvienih različitih feritnih nanomaterijala na električne karakteristike feritnih IPK. Takođe, važan aspekt koji pokriva ovaj potprojekat je analiza temperaturnog ponašanja, odnosno analiza promene performansi IPK i promenom njihove radne temperature. Uspešnost ovih aktivnosti biće postignuta prethodnom pažljivom karakterizacijom i testiranjim asinttisanih feritnih nanoprahova, keramika i nanokompozita.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Institut za multidisciplinarna istraživanja u Beogradu, Prirodnomatematički fakultet u Novom Sadu, Tehnološki fakultet u Novom Sad, Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Mirjana Damnjanović, Ljiljana Živanov, Goran Stojanović, Andrea Marić, Nelu Blaž, Snežana Đurić, Milan Radovanović, Nataša Samardžić
Oprema nabavljena iz projektnih sredstava
DMP2831 Materials Printer *85072A 10-GHz Split Cylinder Resonator*

Projects of Integral and Interdisciplinary Research - Title
SYNTHESIS AND PROCESSING OF CERAMICS NANOPOWDERS AND NANOCOMPOSITES WITH SPECIFIC ELECTRICAL AND MAGNETIC PROPERTIES FOR APPLICATION IN INTEGRATED PASSIVE COMPONENTS
Project code / acromin:
III 45021
Web site:
Grantholder
Professor Vladimir Srdić, PhD - Faculty of Technology in Novi Sad
Coordinator FTS:
Professor Mirjana Damnjanović, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Integral Interdisciplinary Research - III
Summary:
Studies of metal oxide intermediate groups, especially feriita nanostructured spinel and perovskite, and their incorporation into integrated components, occupies a very important place in the modern trends in fundamental research and in the application fields of electronics and information technologies, which are directly or indirectly involved in all directions further progress of modern society. The proposed research in this project, which belong to the area, are divided into three sub-projects and making compact functional unit and contributing to interdisciplinary proposed project. These sub-projects are: (1) synthesis of nanopowders and processing of ceramic and nanocomposite materials, (2) Structural and microstructural characterization, electrical and magnetic measurements nanopowders, ceramics and nanocomposites, and (3) Development and functional characterization of integrated passive components. An important part of the research will be dedicated to developing methods for testing and characterization of the developed components. Due to the dominant influence on the impedance of the ferrite material CPI (such as EMI pushers and transformers) selection of ferrite materials is an important step RPI their design. Based on the frequency bands to be eliminated by choosing the ferrite material which will have a maximum value of complex permeability in the critical range. As part of this project (the third sub-project) will be evaluating the effects of different razvienih ferrite nanomaterials on the electrical characteristics of ferrite CPI. Another important aspect covered by this sub-project is the analysis of the temperature behavior and analysis of performance changes IPK and changing their operating temperature. The success of these activities will be accomplished prior to careful characterization and testing asinttisanih ferrite nanopowders, ceramics and nanocomposites.
Duration:
2011-2015
Partners:
Institute for Multidiciplinary Research in Belgrade, Faculty of Sciences, Faculty of Technology and Faculty of Technical Sciences University in Novi Sad
Researchers from the FTS:
Snežana Đurić, Milan Radovanović, Mirjana Damjanović, Nelu Blaž, Goran Stojanović, Nataša Samardžija, Ljiljana Živanov, Andrea Marić
Equipment purchased from project funds:
DMP2831 Materials Printer *85072A 10-GHz Split Cylinder Resonator*

Projekti Integralnih i interdisciplinarnih istraživanja – naziv:
ISTRAŽIVANJE KLIMATSKIH PROMENA I NJIHOVOG UTICAJA NA ŽIVOTNU SREDINU – PRAĆENJE UTICAJA, ADAPTACIJA I UBLAŽAVANJE
Oznaka projekta / akronim:
III 43007
Web:
http://www.forest.org.rs/index.php?/Ostalo/projekti.html
Rukovodilac projekta:
Dr Ratko Kadović
Rukovodilac projekta sa FTN:
Prof. dr Vesna Spasic Jokić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Integralna interdisciplinarna istraživanja – III
Opis projekta:
Istraživanje sadržaja teških metala i radioaktivnih polutanata u životnoj sredini.Odredjivanje sadržaja organskog ugljenika u šumskim zemljištima Srbije
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Institut za šumarstvo, Beograd, Institut za fiziku, Beograd, Fakultet veterinarske medicine, Beograd, FTN, Novi Sad, Mašinski fakultet, Bedograd, Poljoprivredni fakultet, Beograd
Učesnici –istraživači sa FTN
Prof.dr. Vesna Spasić Jokić sa 0 meseci
Oprema nabavljena iz projektnih sredstava
Za potrebe FTN nije nabavljena nikakva oprema iz sredstava ovog projekta

Projects of Integral and Interdisciplinary Research -Title
RESEARCH OF CLIMATE CHANGESAND ITS IMPACT ON THE ENVIRONMENT - MONITORING IMPACTS, ADAPTATION AND MITIGATION
Project code / Acronym:
III 43007
Web site:
http://www.forest.org.rs/index.php?/Ostalo/projekti.html
Grantholder
Dr Ratko Kadović
Coordinator FTS:
Professor Vesna Spasić Jokić, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Integral Interdisciplinary Research - III
Summary:
The study of heavy metals and radioactive pollutants in the environment. Organic carbon stock in some forest soils in Serbia.
Duration:
2011-2015
***Partners**:*
Institute of Forestry, Belgrade; Institute of Physics, Belgrade; Faculty of veterinary medicine, Belgrade; FTS, Novi Sad; Faculty of mechanical Engineering, Belgrade; Faculty of Agriculture, Belgrade
Researchers *from the FTS:*
Professor Vesna Spasić Jokić, PhD
Equipment purchased from project funds:
FTS did not get any equipment from the funds of this project

Projekti Integralnih i interdisciplinarnih istraživanja – naziv:
INFRASTRUKTURA ZA ELEKTRONSKI PODRŽANO UČENJE U SRBIJI
Oznaka projekta / akronim: INTELIS
III 47003
Web:
http://intelis.uns.ac.rs
Rukovodilac projekta:
Prof. dr Vladan Devedžić, Fakultet organizacionih nauka
Rukovodilac projekta sa FTN:
Prof. dr Branko Milosavljević
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Integralna interdisciplinarna istraživanja – III
Opis projekta:
Tehnološki podržano učenje (TPU) podrazumeva sve forme učenja gde IKT sistemi služe kao medijum za implementaciju procesa učenja, u smislu prenošenja znanja i veština u obrazovnim institucijama, na radnim mestima, kao i u procesu doživotnog učenja, a putem virtuelnih učionica, raznih web servisa i digitalne kolaboracije. Izgradnja infrastrukture za TPU na kojoj bi se omogućio pun, stabilan i pouzdan razvoj takvog obrazovanja podrazumeva i modeliranje, kreiranje i korišćenje digitalnih sadržaja za TPU. Sadržaji moraju da zadovoljavaju metodičko-didaktičke kriterijume kvaliteta i poseduju semantički bogate metapodatke koji omogućuju adaptivno korišćenje. Servisi za pristup treba da podrže mehanizme za primenu metoda formalnog opisa učenja i kognitivnog opterećenja učenika i nastavnika u TPU. Pri tome je neophodno obezbediti i jednostavnu integraciju nastavnih sadržaja iz različitih izvora.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Elektronski fakultet u Nišu, Matematički fakultet u Beogradu, Prirodnomatematički fakultet u Novom Sadu, Rudarsko-geološki fakultet u Beogradu, Tehnički fakultet u Čačku, Tehnološko-metalurški fakultet u Beogradu, Fakultet organizacionih nauka u beogradu, Fakultet tehničkih nauka u Novom Sadu, Filozofski fakultet u Beogradu.
Učesnici –istraživači sa FTN
Aleksandar Kovačević, Đorđe Obradović, Dragan Ivanović, Dinu Dragan, Branko Milosavljević, Miroslav Zarić, Dušan Okanović, Zora Konjović, Milan Vidaković, Goran Sladić, Nikola Milanović, Igor Dejanović, Stevan Gostojić, Dragan Ivetić, Gordana Milosavljević, Valentin Penca, Siniša Nikolič, Goran Savić, Milan Segedinac, Jelena Slivka
Oprema nabavljena iz projektnih sredstava
5 desktop računara; 2 laptop računara; 1 monitor

Projects of Integral and Interdisciplinary Research -Title
INFRASTRUCTURE FOR TECHNOLOGY ENHANCED LEARNING IN SERBIA
Project code / Acronym:INTELIS
III 47003
Web site:
http://intelis.uns.ac.rs
Grantholder
Professor Vladan Devedžić, PhD - Faculty of Organizational Sciences in Belgrade
Coordinator FTS:
Professor Branko Milosavljević, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Integral Interdisciplinary Research - III
Summary:
The notion of technology enhanced learning (TEL) comprises all forms of education where ICT systems serve as a medium for implementing the learning process, in terms of transfering knowledge and skills in educational institutions, at a workplace, and in the process of life-long learning, by means of virtual classrooms, various web services and digital collaboration. Building the infrastructure for TEL that would facilitate a full, stable, and reliable development of such education includes modeling, creation, and the use of digital content for TEL. The content has to meet the methodical and didactical quality criteria, and to possess semantically rich metadata that enables its adaptive use. Access services need to support mechanisms for the formal learning description and the cognitive load of students and teachers. A simple integration of learning content from different sources is required as well.
Duration:
2011-2015
Partners:
Faculty of Electronic Engineering in Nis, Faculty of Mathematics in Belgrade, Faculty of Sciences in Novi Sad, Faculty of Mining and Geology in Belgrade, Technical Faculty Cacak, Faculty of Technology and Metallurgy in Belgrade, Faculty of Organizational Sciences in Belgrade, Faculty of Technical Sciences in Novi Sad, Faculty of Philosophy in Belgrade.
Researchers *from the FTS:*
Aleksandar Kovačević, Đorđe Obradović, Dragan Ivanović, Dinu Dragan, Branko Milosavljević, Miroslav Zarić, Dušan Okanović, Zora Konjović, Milan Vidaković, Goran Sladić, Nikola Milanović, Igor Dejanović, Stevan Gostojić, Dragan Ivetić, Gordana Milosavljević, Valentin Penca, Siniša Nikolič, Goran Savić, Milan Segedinac, Jelena Slivka
Equipment purchased from project funds:
5 desktop computers; 2 laptop computers; 1 monitor

Projekti Integralnih i interdisciplinarnih istraživanja – naziv:
INTELIGENTNI SISTEMI ZA RAZVOJ SOFTVERSKIH PROIZVODA I PODRŠKU POSLOVANJA ZASNOVANI NA MODELIMA
Oznaka projekta / akronim:
III 44010
Web:
Rukovodilac projekta:
Prof. dr Ivan Luković, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Ivan Luković
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Integralna interdisciplinarna istraživanja – III
Opis projekta:
Uspešnost poslovanja savremenih preduzeća bitno zavisi od dostupnosti i kvaliteta kumuliranog znanja. Nažalost, pokazuje se da u okolnostima koje postoje u Srbiji pa i okruženju, znanje o poslovanju obično je rasuto u okviru lokalnih procedura pojedinačnih odeljenja, smešteno u dokumentima koji se razmenjuju u okviru ograničenih grupa učesnika, ili je samo delimično ugrađeno u aplikacije informacionog sistema (IS-a) koji često nije integrisan. Osim toga, IS obično podržava samo osnovne procese u preduzeću, a ne postoji kapacitet koji je neophodan da bi se obezbedila kvalitetna podrška procesa planiranja, odlučivanja i upravljanja. Timovi za razvoj IS-a obično su skoncentrirani samo na tehničku stranu rešenja, dok se zanemaruje unapređenje samih poslovnih procesa koje IS treba da podrži. Sistem kvaliteta, ako i postoji u preduzeću, tretira se često nezavisno od datog IS-a. U takvim uslovima, ovaj projekat ima tri glavna cilja: (1) Obezbeđenje metodoloških i tehnoloških osnova za kavlitetno povezivanje organizacione strategije i performansi sa operativnim procesima poslovanja. (2) Obezbeđenje kvalitetne razvojne osnove za kreiranje softverskih sistema koji će podržavati sve aspekte poslovanja, od bazične obrade i skladištenja podataka i dokumenata, do podrške odlučivanju i strateškom planiranju. (3) Obezbeđenje metodoloških, tehnoloških i organizacionih osnova za razvoj IS koji će podržavati poslovanje preduzeća koje se kontinuirano prilagođava promenama iz okruženja. Preduzeća, da bi bila konkurentna na tržištu u uslovima brzih promena iz okruženja, moraju kontinuirano raditi na unapređenju svog poslovanja. Cilj ovog projekta je unapređenje poslovanja preduzeća kroz: (i) unapređenje samih poslovnih procesa, uz oslonac na sisteme poslovne inteligencije za upravljanje kvalitetom i procesima poslovanja i (ii) intenzivnu primenu informacionih tehnologija radi povećanja dostupnosti informacija za porebe svih nivoa korisnika - razvoj poslovnih i upravljačkih informacionih sistema kao i sistema za upravljanje dokumentima.
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Univerzitet u Kragujevcu: Ekonomski fakultet, Fakultet inženjerskih nauka, Prirodnomatematički fakultet i Tehnički fakultet u Čačku; Univerzitet u Beogradu: Fakultet organizacionih nauka i Univerzitet u Novom Sadu: Fakultet tehničkih nauka.
Učesnici –istraživači sa FTN
Aleksandar Kovačević, Sonja Ristić, Milan Čeliković, Branko Perišić, Đorđe Obradović, Dragan Ivanović, Branko Milosavljević, Dušan Okanović, Zora Konjović, Maja Tumbas Živanov, Miro Govedarica, Milan Vidaković, Gordana Milosavljević, Goran Sladić, Slavica Aleksić, Vladimir Ivančević, Ivan Luković, Nikola Milanović, Zorica Suvajdžin-Rakić, Aleksandar Ristić, Igor Dejanović, Stevan Gostojić, Jelena Slivka, Valentin Penca, Goran Savić, Milan Segedinac, Miroslav Zarić, Sniša Nikolić.
Oprema nabavljena iz projektnih sredstava
U toku 2011. godine, nabavljena laboratorijska – računarska oprema (16 radnih stanica i 2 servera), kao i 1 personalni računar. U toku je nabavka mrežne i ostale opreme za računarsku laboratoriju, kao i više personalnih i prenosnih računara. Takođe, izvršena je nabavka 3 softverska proizvoda, od kojih je najznačajnija nabavka softevra MagicDraw.

Projects of Integral and Interdisciplinary Research -Title
INTELLIGENT SYSTEMS FOR SOFTWARE PRODUCT DEVELOPMENT AND BUSINESS SUPPORT BASED ON MODELS
Project code / Acronym:
III 44010
Web site:
Grantholder
Professor Ivan Luković, PhD - Faculty of Technical Sciences in Novi Sad
Coordinator FTS:
Professor Ivan Luković
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Integral Interdisciplinary Research - III
Summary:
Successfulness of modern business depends significantly on availability and quality of accumulated company knowledge. Unfortunately, in the current circumstances in Serbia, it comes that business knowledge is usually dispersed among local procedures of individual departments, located in documents which are exchanged within a limited group of participants, or it is only partially embedded into applications of an information system (IS), which is often nonintegrated. In addition, IS usually supports only basic company processes, lacking the capacity required to provide quality support to planning, decision making, and management. IS development teams are usually concentrated on the technical side of the solution only, neglecting improvement of business processes that should be supported by IS. Quality system, if it exists in the company, is often dealt with independently of the IS. In these circumstances, our project has three main objectives: (1) Providing methodological and technological foundations for proper coupling of the organizational strategy and performances with operational processes. (2) Providing a quality framework for development of software systems that will support every aspect of business, ranging from basic data and document processing, to decision making and strategic planning. (3) Providing methodological, technological and organizational foundations for development of IS supporting company's business and continuously adjusting to the environment changes. In order to stay concurrent on the market which is lead by rapid changes in the environment, companies need to continuously put effort into the improvement of their business. The purpose of this project is the improvement of the company's business through: (i) improvement of business processes, based on business intelligence (BI) systems for quality and business process management and (ii) intensive application of information technologies with the aim of increasing information availability for users at all levels – the development of business and management IS, as well as document management systems.
Duration:
2011-2015
***Partners**:*
University of Kragujevac: Faculty of Economics, Faculty of Engineering, Faculty of Science and Technical Faculty of Čačak; University of Belgrade: Faculty of Organizational Sciences; University of Novi Sad: Faculty of Technical Sciences.
Researchers from the FTS:
Aleksandar Kovačević, Sonja Ristić, Milan Čeliković, Branko Perišić, Đorđe Obradović, Dragan Ivanović, Branko Milosavljević, Dušan Okanović, Zora Konjović, Maja Tumbas Živanov, Miro Govedarica, Milan Vidaković, Gordana Milosavljević, Goran Sladić, Slavica Aleksić, Vladimir Ivančević, Ivan Luković, Nikola Milanović, Zorica Suvajdžin-Rakić, Aleksandar Ristić, Igor Dejanović, Stevan Gostojić, Jelena Slivka, Valentin Penca, Goran Savić, Milan Segedinac, Miroslav Zarić, Sniša Nikolić.
Equipment purchased from project funds:
In 2011, we purchased computer laboratory equipment (16 working stations and 2 servers), as well as 1 personal working station. We are in the purchasing process of network and other equipment for the computer laboratory, as well as a number of personal and laptop computers. Also, we have purchased 3 softver products, where MagicDraw is one of the most important.

Projekti Integralnih i interdisciplinarnih istraživanja – naziv:
RAZVOJ DIGITALNIH TEHNOLOGIJA I UMREŽENIH SERVISA U SISTEMIMA SA UGRAĐENIM ELEKTRONSKIM KOMPONENTAMA
Oznaka projekta / akronim:
III 44009
Web:
-
Rukovodilac projekta:
Prof. dr Miodrag Temerinac, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Miodrag Temerinac
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Integralna interdisciplinarna istraživanja – III
Opis projekta:
Brz razvoj poluprovodničke tehnologije nudi jeftine i efikasne elektronskih komponente, sa kojima se mogu realizovati izuzetno kompleksni algoritmi čak i u uređajima široke potrošnje kao što su mobilni telefoni, ručni elektronski uređaji i TV uređaji. Digitalizacija praktično svih servisa od energetike, preko informacionih sistema do medicine, omogućuje njihovu interoperatibilnost i umrežavanje nudeći sasvim nova rešenja u sistemima informisanja i zabave, automatizaciji procesa, energetskoj efikasnosti i racionalnom korišćenju raspoloživih resursa. Realizacija ovih potencijala inicira široke programe istraživanja u oblasti sistema sa ugrađenim elektronskim komponentama: (i) razvoj novih servisa u digitalnoj televiziji, u novoj generaciji mobilnih telefona, u automatizaciji procesa u kući i proizvodnji i medicinskoj dijagnostici integrisanoj u uređaje široke potrošnje koji su umreženi preko Interneta (eHealth); (ii) metodologiji i alatima za razvoj softvera za multi procesorske i distribuirane računarske sisteme; (iii) razvoju tehnologija i metoda umrežavanja digitalnih sistema koristeći Internet; (iv) razvoju novih modela i prototipova elemenata sistema za bežični prenos digitalnog sadržaja i (v) razvoju novih modela za zaštitu i transfer znanja u ovoj privredno izuzetno dinamičnoj oblasti. Takođe je uočljiv trend da su glavni nosioci ovog razvojna mala i srednja preduzeća zbog izuzetne brzine razvojna i interoperatibilnosti između potpuno različitih oblasti klasične ekonomije. Projekat je organizovan u pet tema-pod-projekata: (1) Razvoj digitalnih servisa i metodologija testiranja sistema sa ugrađenim elektronskim komponentama (FTN N. Teslić); (2) Paralelno i distribuirano programiranje sistema sa više procesora (FTN M. Popović); (3) Razvoj telekomunikacionog sistema (TeMeSis) za razmenu i analizu medicinskih signala u cilju daljinske dijagnostike (ETF B. Reljin); (4) Razvoj bežičnog mikrotalasnog sistema za prenos digitalnih TV sadržaja (EF B. Milovanović); (5) Simulacija i verifikacija sistema sa digitalnim komponentama (ETF J. Đorđević); (6) Razvoj modela za transfer znanja i zaštitu intelektualne svojine (FTN D. Kukolj).
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Istraživačko-razvojni institut RT-RK d.o.o., Elektronski fakultet u Nišu, Elektrotehnički fakultet u Beogradu, IMTEL – Komunikacije a.d., Inovacioni centar Elektrotehničkog fakulteta d.o.o., Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Miodrag Temerinac, Miodrag Đukić, Dragan Kukolj, Robert Pečkai-Kovač, Branislav Atlagić, Željko Lukač, Nikola Teslić, Teodora Novković, Dušica Marijan, Ivan Kaštelan, Miroslav Popović, Nemanja Lukić, Nenad Četić, Nikola Kuzmanović, Stanislav Očovaj
Oprema nabavljena iz projektnih sredstava
Isporučena oprema: 7 računara, R&S ESCI7 EMI Test Receiver, R&S FSU Spectrum Analyzer, R&S ZVA Vector Network Analyzers; Oprema odobreno, još nije isporučena: EMC3 Anechoic Chamber, Climatic Test Chambers C-70/1500

Projects of Integral and Interdisciplinary Research -Title
DEVELOPMENT OF EMBEDDED SYSTEMS WITH CONNECTED SERVICES AND DIGITAL TECHNOLOGY
Project code / Acronym:
III 44009
Web site:
-
Grantholder
Professor Miodrag Temerinac, PhD - Faculty of Technical Sciences in Novi Sad
Coordinator FTS:
Professor Miodrag Temerinac, PhD
ScientificResearch Fields /Type of research(Fundamental / Applied/Development)
Integral Interdisciplinary Research - III
Summary:
Fast development of semiconductor technology enables development of cheap and efficient electronic components, which can implement very complex algorithms even by consumer devices such as mobile phones, handheld electronic devices or TV sets. Digitization of all energetic providers through information systems to the medicine, enabling their interoperability and networking, offering completely new solutions in information and entertainment systems, automation processes, energetic efficiency and rational use of available resources. The realization of these potentials initiated a worldwide research programs in the field of embedded systems: (i) development of new services in digital television, the new generation of mobile phones, automation of home processes as well as a medical manufacturing and diagnostics integrated into consumer devices networked through the Internet, (ii) methodology and software development tools for multi-processor and computer distributed systems; (iii) development of networking technologies and methods of digital systems using the Internet; (iv) development of new methods and prototypes of system elements for wireless transmission of digital contents and (v) development of new protection models and prototypes of knowledge in this highly dynamic economic area. It is also noticeable that the latest trend isfor SMEs to drive this development due to their exceptional development speed and interoperability between diverse fields of classic economics. The main project is organized into five theme-subprojects: (1) The development of digital services and methodology for testing system with integrated electronic components (FTN - N. Teslic), (2) Parallel and distributed programming system with multiple processors (FTN - M. Popovic); (3) Development of exchange systems and analysis of medical signals for remote diagnostics (ETF - B. Reljin), (4) The development of microwave systems for wireless transmission of digital TV content (EF B. Milovanovic), (5) Simulation and verification of digital components systems (ETF - J. Djordjevic), (6) Model of knowledge transfer development and protection of intellectual property (FTN - D. Kukolj).
Duration:
2011-2015
Partners:
RT-RK Institute for Computer Based Systems, Faculty of Electronic Engineering in Nis, School of Electrical Engineering in Belgrade, IMTEL Komunikacije a.d., Innovation Center of the School of Electrical Engineering in Belgrade,Faculty of Technical Sciences in Novi Sad
Researchers from the FTS:
Miodrag Temerinac, Miodrag Đukić, Dragan Kukolj, Robert Pečkai-Kovač, Branislav Atlagić, Željko Lukač, Nikola Teslić, Teodora Novković, Dušica Marijan, Ivan Kaštelan, Miroslav Popović, Nemanja Lukić, Nenad Četić, Nikola Kuzmanović, Stanislav Očovaj
Equipment purchasedfrom projectfunds:
Equipment delivered: 7 PCs, R&S ESCI7 EMI Test Receiver, R&S FSU Spectrum Analyzer, R&S ZVA Vector Network Analyzers; Equipment approved, but not yet delivered: EMC3 Anechoic Chamber, Climatic Test Chambers C-70/1500

Projekti Integralnih i interdisciplinarnih istraživanja – naziv:
POBOLJŠANJE ENERGETSKE EFIKASNOSTI ZGRADA U SRBIJI I UNAPREĐENJE NACIONALNIH REGULATIVNIH KAPACITETA ZA NJIHOVU SERTIFIKACIJU
Project code / Acronym:
III 42012
Web:
Rukovodilac projekta:
Prof. dr Dragoslav Šumarac, Građevinski fakultet u Beogradu
Rukovodilac projekta sa FTN:
Prof. dr Vlastimir Radonjanin
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Integralna interdisciplinarna istraživanja – III
Opis projekta:
U projektu će se razmotriti postojeće stanje Energetske efikasnosti zgrada u Srbiji. Analiziraće se postojeća zakonska regulativa i porediti sa važećom u EU. Posebno će se analizirati postojeće zgrade a zasebno one koje će se tek graditi u svetlu Zakona o planiranju i izgradnji iz 2009. Pri analizi će se primenom najsavremenijih metoda istraživanja utvrditi kondukcioni gubici usled neadekvatnih fasada, nedovoljno kvalitetnih prozora, zatim ventilacioni gubici. Linijski gubici će biti predmet posebne analize. Unapređenje daljinskih sistema grejanja, posebno će biti predmet izučavanja. Pri svim gore pomenutim analizama koristiće se postojeći programi (Fluent, Energy Plus...). Pored toga vršiće se neophodna merenja, kao i testiranja u laboratoriji. U okviru projekta proučiće se i uticaj i zaštita od buke u zgradama. Zaštita od buke, a time komfor stanovanja, realizuje se, u prvom redu, zvučnom izolacijom građevinskih konstrukcija. Razmotriće se i primena novih materijala za izolaciju fasada. Za identifikaciju i kvantifikaciju energetskih gubitaka istražiće se mogućnosti multispektralne analize satelitskih snimaka IKONOS rezolucije 1m. Istraživanja će se sprovoditi za cela naselja ili delove velikih gradova. Za detaljnije određivanje gubitaka zgrada istražiće se mogućnost korišćenja mobilnog integrisanog sistema GPS, Video kamera, Termovizijska kamera. Kao rezultat istraživanja, pored objavljenih radova biće izrađeni predlozi Pravilnika za sertifikaciju objekata i fizičkih i pravnih lica koja je vrše.
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Građevinski fakultet u Beogradu, Građevinski fakultet u Subotici, IMS – Institit za ispitivanje meterijala, Mašinski fakultet u Beogradu,Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Vlastimir, Radonjanin, Mirjana Malešev, Toša Ninkov, , Željko Jakšić, Vladimir Bulatović, Vesna Bulatović, Ivan Lukić, Zoran Sušić, Dejan Vasić
Oprema nabavljena iz projektnih sredstava
Oprema nije nabavljena

Projects of Integral and Interdisciplinary Research -Title
ENERGY EFFICIENCY ENHANCEMENT OF BUILDINGS IN SERBIA AND IMPROVEMENT OF NATIONAL REGULATIVE CAPACITY FOR THEIR CERTIFICATION
Project code / Acronym:
III 42012
Web site:
Grantholder
Professor Dragoslav Šumarac,PhD - Faculty of Civil Engineering in Belgrade
Coordinator FTS:
Professor Vlastimir Radonjanin, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Integral Interdisciplinary Research - III
Summary:
In the present project, state of the art of Energy Efficiency of buildings in Serbia will be examined. Existing legislative in Serbia in this field will be analyzed and compared with European one. Existing and new buildings, built according to Low on building and construction adopted in 2009. will be examined. During the analysis process new method of examination for conductive energy losses due to inadequate facade, poor windows and ventilation heat losses as well, will be applied. Line heat losses will be examined also. Improvement of district heating will be studied to. During all above analysis existing programs will be used (Fluent, Energy Plus...). Besides that testing and measurements of materials, used for isolation, in laboratory will be performed. Within the project, influence and protection against the noise in buildings will be analyzed. In this way comfort of living by noise isolation will be subject of examination. Application of new materials for isolation of facade will be analyzed. For identification and quantification of energy losses advantages of multi spectral analysis satellite images IKONOS with resolution 1m will be analyzed. Investigation will be performed for whole settlements and parts of cities. Based on identified losses and quantifications for every building geo-referent information system will be established. As a result of investigation, besides published papers, bay low suggestion for certification of individuals and buildings will be examined.
Duration:
2011-2015
***Partners**:*
Faculty of Civil Engineering in Belgrade, Faculty of Civil Enginering in Subotica, IMS Institute Belgrade - *Institute for Testing of Materials, Faculty of Mechanical Engineering in Belgrade, Faculty of Technical Sciences in Novi Sad*
Researchers from the FTS:
Vlastimir, Radonjanin, Mirjana Malešev, Toša Ninkov, , Željko Jakšić, Vladimir Bulatović, Vesna Bulatović, Ivan Lukić, Zoran Sušić, Dejan Vasić
Equipment purchased from project funds:
None

Projekti Integralnih i interdisciplinarnih istraživanja – naziv:
RAZVOJ ROBOTA KAO SREDSTVA ZA POMOĆ U PREVAZILAŽENJU TEŠKOĆA U RAZVOJU DECE
Oznaka projekta / akronim:
III 44008
Web:
Trenutno nije dostupan
Rukovodilac projekta:
Prof. dr Branislav Borovac, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Branislav Borovac
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Integralna interdisciplinarna istraživanja – III
Opis projekta:
Cilj ovog projekta je da se razvije sredstvo kojim bi se olakšao i poboljšao rad sa decom sa teškoćama u razvoju (teškoće u razvoju motorike, cerebralna paraliza, deca sa oštećenjem sluha, disharmonični razvoj, emocionalne teškoće). Osnovni cilj primene ovakvih sredstava asistivne tehnologije jeste obezbeđivanje dugotrajne motivacije za usvajanje novih veština, stvaranje uslova za lakše sprovođenje terapeutskih postupaka i postizanje bržih efekata tretmana. Namera je da se iskoriste detetove postojeće sposobnosti u cilju razvijanja njegovih maksimalnih potencijala kroz igru i zabavu. Područja primene su: savladavanje osnovnih životnih aktivnosti, komunikacija, vizuelni, auditivni, taktilni prijem informacija, kognitivne sposobnosti, socijalne interakcije, mobilnost i emocionalno funkcionisanje deteta. Predviđeno je da se roboti upotrebljavaju u inkluzivnom okruženju, a kako novi Zakon o osnovama sistema obrazovanja i vaspitanja (Sl. Glasnik RS, broj 72/09 od 3. septembra 2009.godine) predviđa izradu individualnog obrazovnog plana za svako dete sa teškoćama u razvoju smatramo da je opravdano da se među predviđenim asistivnim tehnologijama nađu i roboti. Mada je ovakav pokušaj pionirski smatramo da su dosadašnja (mada rudimentarna) iskustva u razvoju i primeni ovakve vrste robota u kontaktu sa decom ohrabrujuća. Roboti bi pružili mogućnost da se na jedan nov način stimuliše razvoj deteta, razvijaju funkcije i da se dete uključi u aktivnosti vršnjačke grupe i okoline.
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Fakultet tehničkih nauka, Medicinski fakultet, Akademija umetnosti i Filozofski fakultet sa Univerziteta u Novom Sadu u Novom Sadu, Elektrotehnički fakultet, Institut „Mihajlo Pupin" sa Univerziteta u Beogradu, Institut tehničkih nauka Srpske akademije nauka i umetnosti
Učesnici –istraživači sa FTN
Branislav Borovac, Vlado Delić, Nađ Laslo, Mirko Raković, Milan Gnjatović, Vladimir Zlokolica, Milutin Nikolić, Jovica Tasevski, Srđan Savić, Marko Penčić, Milan Nikolić, Kalman Babković, Darko Pekar, Slobodan ilić, Boris Jakovljević
Oprema nabavljena iz projektnih sredstava
6 računara. Očekuje se isporuka motora i ostalih delovi za izradu robota i Vicon sistem za snimanje pokreta.

Projects of Integral and Interdisciplinary Research -Title
DESIGN OF ROBOT AS ASSISTIVE TECHNOLOGY IN TREATMENT OF CHILDREN WITH DEVELOPMENTAL DISORDERS
Project code / Acronym:
III 44008
Web site:
Not available at the moment
Grantholder
Professor Branislav Borovac, PhD - Faculty of Technical Sciences in Novi Sad
Coordinator FTS:
Professor Branislav Borovac, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Integral Interdisciplinary Research - III
Summary:
The aim of this project is to develop an assistive technology aid to improve the work with children with developmental disorders (impaired motor and disharmonious development, cerebral palsy, hearing and emotional disorders, etc.). The main goal of the application of these means of assistive technology is to ensure long-lasting motivation for acquiring new skills, creation of the conditions for an easier application of treatment procedures, and achieving faster treatment effects. The intention is to take advantage of the child's existing capabilities with the aim of developing its maximum potentials through play and entertainment. The application areas are: mastering of basic life skills, communication, visual, auditory and tactile reception of information, cognitive abilities, social interactions, mobility, and child's emotional functioning. Although such attempt is a pioneering one, we think that previous (though rudimentary) experiences in the development and application of such kind of robots in contact with children are encouraging. In the future, such robots could be used by all those who are involved in child care (parents, therapeutists, and teachers) and not only by specially trained staff. Robots would offer the possibility to use a novel way to stimulate the child's development and we think it is justifiable to include them among the dedicated assistive technologies. During work on project all ethical issues related to work with humans will be respected.
Duration:
2011-2015
***Partners**:*
Faculty of Technical Sciences, Faculty of Medicine, Academy of Arts and Faculty of Philosophy from University of Novi Sad, Faculty of Electrical Engineering and Institute "Mihajlo Pupin" from University of Belgrade, Institute of Technical Sciences of SASA,
Researchers *from the FTS:*
Branislav Borovac, Vlado Delić, Nađ Laslo, Mirko Raković, Milan Gnjatović, Vladimir Zlokolica, Milutin Nikolić, Jovica Tasevski, Srđan Savić, Marko Penčić, Milan Nikolić, Kalman Babković, Darko Pekar, Slobodan ilić, Boris Jakovljević
Equipment purchased from project funds:
6 computers. The delivery of motors and other parts for robot prototype and Vicon motion capture sysem is expected.

Projekti Integralnih i interdisciplinarnih istraživanja – naziv:
RAZVOJ I PRIMENA NOVIH I TRADICIONALNIH TEHNOLOGIJA U PROIZVODNJI KONKURENTNIH PREHRAMBENIH PROIZVODA SA DODATOM VREDNOŠĆU ZA EVROPSKO I SVETSKO TRŽIŠTE – STVORIMO BOGATSTVO IZ BOGATSTVA SRBIJE
Oznaka projekta / akronim:
III 46001
Web:
http://www.iii46001.fins.uns.ac.rs/
Rukovodilac projekta:
Dr Jasna Mastilović, Institut za prehrambene tehnologije u Novom Sadu
Rukovodilac projekta sa FTN:
doc. dr Gordana Ostojić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Integralna interdisciplinarna istraživanja - III
Opis projekta:
Projekat pod motom STVORIMO BOGATSTVO IZ BOGATSTVA SRBIJE uz podršku Ministarstva za nauku i tehnološki razvoj realizuje interdisciplinarni tim od gotovo stotinu istraživača iz 12 institucija. Projekat je usmeren na integrisana tehničko tehnološka i ekonomska istraživanja u tri ključne oblasti: – podizanje konkurentnosti masovnih agro-prehrambenih proizvoda kroz optimizaciju posležetvenih tehnologij i lanca vrednosti – razvoj funkcionalnih prehrambeni proizvoda i napitaka sa dodatom vrednošću za potrošača – iskorišćenje potencijala ruralnih područja i tradicije regiona kroz identifikaciju i objedinjavanje ponude diversifikovane poljoprivredne proizvodnje. Paraleno teku i istraživanja koja pokrivaju sve tri fokusirane oblasti u odnosu na: – ostvarivanje sledljivosti u lancu proizvodnje hrane primenom RFID tehnologija – analizu uporednog i kumulativnog makroekonomskog impakta – upravljanje znanjem u funciji razvojna ekonomije zasnovane na znanju i zaštite intelektualne svojine
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Institut za prehrambene tehnologije u Novom Sadu, Poljoprivredni fakultet, Zemun, Ekonomski fakultet, Beograd, Fakultet tehničkih nauka, Novi Sad, Farmaceutski fakultet, Beograd, Prirodno matematički fakultet, Novi Sad, Tehnološko metalurški fakultet, Beograd, Poljoprivredni fakultet, Novi Sad, Ekonomski institut, Beograd, Tehnički fakultet, Čačak, Institut za proučavanje lekovitog bilja „Josif Pančić“, Beograd, Fakultet za industrijski menadžment, Kruševac
Učesnici –istraživači sa FTN
Gordana Ostojić, Stevan Stankovski, Milovan Lazarević, Dragoljub Šević, Ivana Šenk, Laslo Tarjan, Igor Zečević
Oprema nabavljena iz projektnih sredstava

Projects of Integral and Interdisciplinary Research -Title
CREATING WEALTH FROM THE WEALTH OF SERBIA
Project code / Acronym:
III 46001
Web site:
http://www.iii46001.fins.uns.ac.rs/
Grantholder
JasnaMastilović, PhD - Institute of Food Technology - FINS
Coordinator FTS:
doc. dr Gordana Ostojić
ScientificResearch Fields /Type of research(Fundamental / Applied/Development)
Integral Interdisciplinary Research - III
Summary:
The project which will be realized by hundred members research team under the motto CREATING WEALTH FROM THE WEALTH OF SERBIA is directed to the integrated research in the fields of technology, techniques, economy and management in three key areas in which potential impacts on food production and marketing are foreseen: (1) optimization of postharvest treatment of the most significant agricultural products directed to achievement of cost based competitiveness of the products, (2) production of supplement, food products and beverages with functional properties as the added value for the consumers and (3) utilization of potentials and tradition of rural regions through merging of diversified agriculture offer. Investigations in the areas of (1) achievement of complete traceability in food production chain by utilization of RFID technologies, (2) analysis of comparative and cumulative macroeconomic impact and (3) knowledge management research and development of knowledge transfer process as the support for building of knowledge based economy are also involved in the project covering equally all three focused food production areas. Planned research will result also in fundamental knowledge upgrading directed to histological and pathological characterization of *in vivo* realized effects of developed functional supplements and food products. The project will be managed by the team of project managers trained according to the PMI methodology which will take care of integration and achievement of project objectives, timing, quality and dissemination of the results and communication among the participant and with the stakeholders.
Duration:
2011-2015
***Partners**:*
Economics Institute, Faculty Of Economics in Belgrade, Institute of Food Technology - FINS, Institute for *Medicinal Plants Research*. "Dr *Josif Pancic", Faculty of Medicine in Novi Sad, Faculty of Agriculture in Novi Sad, Faculty of Sciences in Novi Sad, Technical Faculty Čačak,Faculty of Technology and Metallurgy in Belgrade, Faculty of Business & Industrial Management – Kruševac, Faculty of Technical Sciences in Novi Sad, Faculty of Pharmacy in Belgrade*
Researchers from the FTS:
Gordana Ostojić, Stevan Stankovski, Milovan Lazarević, Dragoljub Šević, Ivana Šenk, Laslo Tarjan, Igor Zečević
Equipment purchasedfrom projectfunds:

Projekti Integralnih i interdisciplinarnih istraživanja – naziv:
UNAPREĐENJE KONKURENTNOSTI SRBIJE U PROCESU PRISTUPANJA EVROPSKOJ UNIJI
Oznaka projekta / akronim:
III 47028
Web:
/
Rukovodilac projekta:
Prof. dr Ana Trbović, Fakultet za ekonomiju, finansije i administraciju Univerziteta Singidunum u Beogradu
Rukovodilac projekta sa FTN:
Doc. dr Danijela Lalić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Integralna interdisciplinarna istraživanja – III
Opis projekta:
Proces pristupanja EU podrazumeva stvaranje zakonodavnog okvira koji je efikasan, usklađen sa acquis communautaire, liberalizaciju tržišta i stvaranje poslovne klime koje će preduzećimaomogućiti da stvore konkurentsku prednost na zahtevnom evropskom i svetskom tržištu. Srbija treba pre pristupanja da radi na dostizanju ciljeva postavljenih strategijom Evrope 2020, koja predstavlja strateški plan EU za jačanje konkurentnosti. I Istraživači, među kojima su članovi ovog tima, su došli do zaključka da je nizak nivo konkurentnosti Srbije ishod, pre sveganeefikasne antimonopolske politike, pravne nesigurnosti, neefikasnost procesa izdavanja građevinskih dozvola, složenog poreskog sistema, nerešenih svojinskih prava i nedovoljne opšte koordinacije i efikasnosti javne uprave. Unapređenje konkurentnosti Srbije neophodno je za jačanje izvoza i veći priliv investicija, čime se obezbeđuje održiv razvoj i uspešno pristupanje Srbije EU. Stoga je cilj ovog projekta dodatna analiza prepreka, ali i razvoj mera za unapređenje konkurentnosti. Poseban naglasak je stavljen na preduzeća i najkonkurentnije privredne grane i mere za dodatno podsticanje inovacija i konkurentnosti, kao i jačanje ljudskog kapitala koji je temelj i strategije Evropa 2020. Projektni tim intenzivno sarađuje sa Nacionalnim savetom za konkurentnost i drugim relevantnim institucijama koje su istovremeno i korisnici rezultata projekta.
Trajanje projekta
2011-2015
***Institucije učesnici / partneri**:*
Fakultet za ekonomiju, finansije i administraciju Univerziteta Singidunum u Beogradu, Pravni fakultet Univerziteta Union, Univerzitet Singidunum u Beogradu, Fakultet za uslužni biznis, Sremska Kamenica, Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Vladimir Đaković, Ilija Ćosić, Bojan Lalić, Mladen Pečujlija, Danijela Gračanin, Jelena Nikolić, Sonja Bunčić, Darko Stefanović, Danijela Lalić, Slađana Gajić, Valentin Konja
Oprema nabavljena iz projektnih sredstava
Do sada nije nabavljena oprema iz projektnih sredstava

Projects of Integral and Interdisciplinary Research -Title
ADVANCING SERBIA'S COMPETITIVENESS IN THE PROCESS OF EU ACCESSION
Project code / Acronym:
III 47028
Web site:
/
Grantholder
Professor Ana Trbović, PhD, Faculty of Economics, Finance and Administration University Singidunum in Belgrade
Coordinator FTS:
Assosiate professor Danijela Lalić, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Integral Interdisciplinary Research - III
Summary:
The EU accession process encompasses the creation of an effective legislative framework, aligned with acquis communautaire, market liberalization and a business climate enabling companies to create competitive advantages in the demanding European and global markets. Since Serbia strives toward EU membership, it should already work on achieving the Europe 2020 strategy objectives. Researches, including members of project team, came to conclusion that Serbia's low competitiveness stems from, above all, ineffective antitrust policy, legal uncertainty, inefficient building permitting process, a complicated tax system, unresolved property rights system and lack of coordination within the public administration. Actions to advance Serbia's competitiveness are required to strengthen exports, provide greater FDI inflow, ensuring sustainable development and successful accession of Serbia to the EU. Therefore, the objective of this project is to further analyze obstacles, but also to develop measures to improve competitiveness. Particular emphasis will be placed on companies and the most competitive industries, facilitating innovation and entrepreneurship and strengthening human capital, which is the core of Europe 2020 strategy. The project team cooperates with the National Competitiveness Council and other relevant institutions, which are also project beneficiaries.
Duration:
2011-2015
***Partners**:*
Faculty of Economics, Finance and Administration University Singidunum in Belgrade, Faculty of Law of The Union University, University Singidunum in Belgrade,, Faculty of business in service, Sremska Kamenica, Faculty of Technical Sciences in Novi Sad
Researchers from the FTS:
Vladimir Đaković, Ilija Ćosić, Bojan Lalić, Mladen Pečujlija, Danijela Gračanin, Jelena Nikolić, Sonja Bunčić, Darko Stefanović, Danijela Lalić, Slađana Gajić, Valentin Konja
Equipment purchased from project funds:
Equipment has not purchased from project funds yet

Projekti Integralnih i interdisciplinarnih istraživanja – naziv:
UNAPREĐENJE REMEDIJACIONIH TEHNOLOGIJA I RAZVOJ METODA ZA PROCENU RIZIKA ZAGAĐENIH LOKALITETA
Oznaka projekta / akronim:
III 43005
Web:
Rukovodilac projekta:
Prof. dr Božo Dalmacija, Prirodnomatematički fakultet u Novom Sadu
Rukovodilac projekta sa FTN:
Docent dr Miljana Prica
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Integralna interdisciplinarna istraživanja – III
Opis projekta:
Zagađenost sedimenata, koja za posledicu ima ispoljavanje toksičnih efekata na živi svet akvatičnih ekosistema, predstavlja problem svuda u svetu, a posebno u zemljama sa dugom industrijskom tradicijom u kojima se prečišćavanju otpadnih voda ne pridaje dovoljna pažnja. Kvalitet sedimenta postaje posebno značajan tokom operacija izmuljivanja u projektima restoracije reka i revitalizacije kanala, kada je potrebno razmotriti različite opcije remedijacije i odlaganja ako su u pitanju zagađeni sedimenti. Prvi korak u okviru aktivnosti sanacije zagađenih lokaliteta jeste procena rizika po okolinu. Fizičko-hemijska karakterizacija i primena različitih metodologija procene rizika, koje uzimaju u obzir koncept biodostupnosti, predstavlja najznačajniji tip karakterizacije na osnovu koje se, pored procene rizika po okolinu, mogu doneti i odluke o načinima postupanja pri izmuljivanju zagađenih sedimenata. Način postupanja sa zagađenim sedimentom tokom izmuljivanja i način njegove prerade ili odlaganja, zbog opasnosti od rastvaranja i resuspenzije zagađujućih materija, mora u sebi sadržati princip imobilizacije i onemogućavanja njihovog širenja u okolinu kroz vazduh, vodu (bilo površinsku i podzemnu) ili zemljište. Krajnji cilj projekta jeste snižavanje ekološkog rizika prouzrokovanog prisustvom zagađenih sedimenata u vodotocima, tako što će se razvojem novih i primenom postojećih hemijskih i bioloških metoda za procenu rizika, kao i fizičko-hemijskom karakterizacijom ponašanja i raspodele polutanata u sistemu voda-sediment, proceniti uticaj zagađenih sedimenata na stanje akvatičnog ekosistema, a potom odabrati adekvatna tehnologija remedijacije na lokalitetima za koje se utvdi da negativan uticaj postoji.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Prirodnomatematički fakultet u Novom Sadu, Poljoprivredni fakultet Lešak, Poljoprivredni fakultet, Tehnološki fakultet i Fakultet tehničkih nauka Univerziteta u Novom Sadu
Učesnici –istraživači sa FTN
Miljana Prica
Oprema nabavljena iz projektnih sredstava

Projects of Integral and Interdisciplinary Research -Title
IMPROVING REMEDIATION TECHNOLOGIES AND DEVELOPING METHODS FOR THE RISK ASSESSMENT OF CONTAMINATED SITES
Project code / Acronym:
III 43005
Web site:
Grantholder
Profesor Božo Dalmacija, PhD - Faculty of Sciences in Novi Sad
Coordinator FTS:
Associated professor Miljana Prica, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Integral Interdisciplinary Research - III
Summary:
Sediment contamination, which can express toxic effects on the living world in aquatic ecosystems, is a problem everywhere in the world, especially in countries with a long industrial tradition in which wastewater treatment was not given sufficient attention. Sediment quality becomes especially important during dredging operations in river restoration and canal revitalization projects, when various remediation and disposal options must be considered if the sediments are contaminated. The first step in rehabilitating contaminated sites is environmental risk assessment. Physicochemical characterization and the application of different risk assessment methodologies which utilize the concept of bioavailability, is the most important type of characterization, and together with environmental risk assessment, forms the basis of decisions regarding dredging contaminated sediments. For polluted sediments, the dangers of dissolution and re-suspension of pollutants dictate that treatment types used during sediment dredging, processing and disposal must include the principles of immobilization and the prevention of pollutants spreading into the environment through air, water (both surface and groundwater) or soil. The key objective of this project is to lower the environmental risks caused by contaminated sediments in rivers, through developing and using new and existing chemical and biological methods for risk assessment, and physicochemical characterization of the behaviour and distribution of pollutants in water-sediment systems, to evaluate the impact of contaminated sediments on aquatic ecosystems, and to choose appropriate remediation technologies at sites where negative pollutant influences are found.
Duration:
2011-2015
***Partners**:*
Faculty of Sciences in Novi Sad, Faculty of Agronomy Lešak, Faculty of Agronomy, Faculty of Technology and Faculty of Technical Scences University in Novi Sad
Researchers from the FTS:
Miljana Prica
Equipment purchased from project funds:

Projekti Integralnih i interdisciplinarnih istraživanja – naziv:
UNAPREĐENJE I RAZVOJ HIGIJENSKIH I TEHNOLOŠKIH POSTUPAKA U PROIZVODNJI NAMIRNICA ŽIVOTINSKOG POREKLA U CILJU DOBIJANJA KVALITETNIH I BEZBEDNIH PROIZVODA KONKURENTNIH NA SVETSKOM TRŽIŠTU
Oznaka projekta / akronim:
III 46009
Web:
-
Rukovodilac projekta:
Dr Lazar Turubatović, Institut za higijenu i tehnologiju mesa u Beogradu
Rukovodilac projekta sa FTN:
Docent dr Jelena Radonić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Integralna interdisciplinarna istraživanja – III
Opis projekta:
Projekat je podeljen u 8 potprojekata: 1. Razvoj i unapređenje tehnologije funkionalnih proizvoda od mleka; 2. Razvoj i unapređenje higijene i tehnologije mesa; 3. Unapređenje tehnoloških postupaka u proizvodnji pčela, meda, voska i polena; 4. Intolerancija na sastojke namirnica životinjskog porekla; 5. Mikotoksini u namirnicama životinjskog porekla; 6. Uticaj hemijskih kontaminanata na bezbednost namirnica životinjskog porekla; 7. Primena protektivnih kultura u proizvodnji namirnica životinjskog porekla; 8. Tretman i kvalitet otpadnih voda mesne industrije i određivanje prisustva "emerging" supstanci u cilju smanjenja kontaminacije vodotokova. U okviru projekta realizuju se istraživanja iz oblasti tehnologije funkcionalnih mlečnih proizvoda visoke nutritivne vrednosti, izraženih terapeutskih, antioksidativnih i antimikrobnih svojstava, sa ciljem unapređenja proizvodnje mleka, uspostavljanje GAP na farmama i GIS baze podataka. Planiran je razvoj metoda za ispitivanje prisustva novih patogena i virusa, usavršavanje postojećih senzornih metoda i uvođenje novih metoda (HRGCMS) za ispitivanje nivoa koncentracije dioksina, PCB kongenera i policikličnih aromatičnih ugljovodonika u proizvodima od mesa. Sa ciljem unapređenja uzgoja pčela, očuvanja i zaštite autohtonosti ekotipova u Srbiji, primenom klasične i geometrijske morfometrijske analize genetske raznovrsnosti medonosnih pčela sa izdvojenim ekotipovima, proizvešće se pčelinje matice za masovnu reprodukciju. Kako bi se ispitalo prisustvo aditiva u namirnicama animalnog porekla koji se u EU označavaju kao alergeni, planiran je razvoj i validacija metoda za njihovu detekciju. U stočnoj hrani i namirnicama animalnog porekla dostupnim na tržištu, pratiće se prisustvo toksigenih plesni i pojedinih mikotoksina, zatim žive, olova, kadmijuma, fluorida, PCB i PBDE. U jestivim tkivima životinja, medu i jajima određivaće se rezidualne količine antimikrobnih lekova, kako bi se procenio stepen ekspozicije i rizika, ispitao mehanizam dejstva i interakcija i izvršila karakterizacija rizika u odnosu na referentne vrednosti. Tokom realizacije projekta planirane su aktivnosti na polju unapređenja tradicionalnih fermentisanih proizvoda od mleka i mesa, definisanja GAP i uspostavljanja SOP, kao i utvrđivanja uslova za aktivnost bakteriocina i primenu u cilju produženja održivosti proizvoda animalnog porekla. Sa ciljem davanja predloga za primenu odgovarajućeg tretmana otpadnih voda mesne industrije, sprovodiće se analiza otpadnih voda industrije mesa na osnovne parametre i na prisustvo hazardnih i „emerging" kontaminanata primenom GC/MS i UPLC/MS2 analitičkih metoda. Na osnovu rezultata dobijenih u okviru projekta, biće urađena tehno-ekonomska studija razvojna industrije mesa i mleka.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Agronomski fakultet u Čačku, Ekonomski fakultet u Subotici, Institut za veterinarstvo Srbije u Beogradu, Institut za prehrambene tehnologije u Novom Sadu, Institut za higijenu i tehnologiju mesa u Beogradu, Medicinski fakultet u Beogradu, Medicinski fakultet u Novom Sadu, Poljoprivredni fakultet u Beogradu, Poljoprivredni fakultet Lešak, Prirodnomatematički fakultet u Novom Sadu, Stomatološki fakultet u Beogradu, Tehnološki fakultet u Novom Sadu, Fakultet veterinarske medicine u Beogradu, Fakultet za obrazovanje diplomiranih pravnika i diplomiranih ekonomista za spoljnu trgovinu Univerziteta Privredna akademija u Novom Sadu, Fakultet tehničkih nauka, Farmaceutski fakultet u Beogradu, Institut za vodoprivredu Jaroslav Černi
Učesnici –istraživači sa FTN
Jelena Radonić, Mirjana Vojinović Miloradov, Maja Turk Sekulić, Jelena Kiurski, Maja Đogo, Dejan Ubavin, Dragan Adamović, Milena Stošić, Dušan Milovanović, Zorica Miroslavljević, Srđan Kovačević, Ivana Mihajlović, Zoran Čepić, Maja Sremački, Nevena Živančev, Maja Stupavski, Helena Horvat, Jovana Simić, Sabolč Pap
Oprema nabavljena iz projektnih sredstava
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Projects of Integral and Interdisciplinary Research -Title

IMPROVEMENT AND DEVELOPMENT OF HYGIENIC AND TECHNOLOGICAL PROCEDURES IN PRODUCTION OF ANIMAL ORIGINATING FOODSTUFFS WITH THE AIM OF PRODUCING HIGH-QUALITY AND SAFE PRODUCTS COMPETITIVE ON THE GLOBAL MARKET

Project code / Acronym:

III 46009

Web site:

-

Grantholder

Lazar Turubatović, PhD - Institute of Meat Hygiene and Technology, Belgrade

Coordinator FTS:

Asociated professor Jelena Radonić, PhD

Scientific Research Fields / Type of research (Fundamental / Applied / Development)

Integral Interdisciplinary Research - III

Summary:

Project is divided into eight subprojects: 1. Development and improvement of functional dairy products technology; 2. Development and improvement of meat hygiene and technology; 3. Improvement of technological processes in the production of bees, honey, wax and pollen; 4. Intolerance to ingredients of foodstuff of animal origin; 5. Mycotoxins in foodstuff of animal origin; 6. The influence of chemical contaminants on the safety of foodstuff of animal origin; 7. The application of protective cultures in the production of foodstuffs of animal origin; 8. Treatment and wastewater quality of the meat industry and determination of presence of „emerging“ substances in order to reduce contamination of watercourses.

Project includes activities in the field of technology of functional dairy products with high nutritional value, expressed therapeutic, antioxidant and antimicrobial properties, in order to improve milk production, to establish of GAP on farms and to develop GIS database. Development of methods for testing the presence of new pathogens and viruses, improvement of existing sensory testing methods and introduction to new methods (HRGCMS) for measuring the concentration levels of dioxins, PCBs and PAHs in meat products are planned. Aiming to improve bee breeding, conservation and protection of indigenous ecotypes in Serbia, the queen bee line for mass reproduction will be obtained by classical and geometric morphometric analysis of genetic diversity of honey bees with separated ecotypes. In order to determine the presence of additives in foodstuffs of animal origin which are labelled as allergens in EU, the development and validation of methods for their detection are planned. The presence of toxigenic fungi and some mycotoxins, then levels of mercury, lead, cadmium, fluoride, PCBs and PBDEs in feed and food of animal origin will be determined. Residual concentrations of antimicrobial agents in edible tissues of animals honey and eggs will be measured, to calculate the degree of exposure and risk, examine the mechanism of action and interaction and to characterize the risk in relation to the reference values. Within the project, improvement of traditional fermented dairy products and meat, defining of GAP and establishing of SOP are planned, as well as determination of conditions for bacteriocin activity and applications in order to extend the durability of the product. In order to propose the most appropriate treatment of meat industry wastewater, the analysis of wastewater for basic quality parameters and determination of hazardous and "emerging" contaminants using GC/MS and UPLC/MS2 analytical methods will be conducted. Based on the results, techno-economic study of meat and milk industry development will be prepared.

Duration:

2011-2015

***Partners**:*

Faculty of Agronomy in Čačak, Faculty of Economics in Subotica, Scientific Veterinary Institute Serbia*, Belgrade, Science and Research Institute for Food Technologies in Novi Sad, Institute of Meat Hygiene and Technology in Belgrade, School of Medicine in Belgrade, Faculty of Medicine in Novi Sad, Faculty of Agriculture in Belgrade, Faculty of Agriculture in Lešak, Faculty of Sciences in Novi Sad, Faculty of Dental Medicine in Belgrade, Faculty of Technology in Novi Sad, Faculty of Veterinary Medicine in Belgrade, University Business Academy in Novi Sad, Faculty of Technical Sciences in Novi Sad, Faculty of Pharmacy in Belgrade, The Jaroslav Černi Institute for the Development of Water Resources*

Researchers from the FTS:

Jelena Radonić, Mirjana Vojinović Miloradov, Maja Turk Sekulić, Jelena Kiurski, Maja Đogo, Dejan Ubavin, Dragan Adamović, Milena Stošić, Dušan Milovanović, Zorica Miroslavljević, Srđan Kovačević, Ivana Mihajlović, Zoran Čepić, Maja Sremački, Nevena Živančev, Maja Stupavski, Helena Horvat, Jovana Simić, Sabolč Pap

Equipment purchased from project funds:

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Projekti Integralnih i interdisciplinarnih istraživanja – naziv:
METARIJALI REDUKOVANE DIMENZIONALNOSTI ZA EFIKASNU APSORPCIJU SVETLOSTI I KONVERZIJU ENERGIJE
Oznaka projekta / akronim:
III 45020
Web:
Rukovodilac projekta:
Dr Jovan Nedeljković, Institut za nuklearne nauke „Vinča”
Rukovodilac projekta sa FTN:
Docent dr Dragana Štrbac
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Integralna interdisciplinarna istraživanja – III
Opis projekta:
Deo koji se realizuje na Univerzitetu u Novom Sadu obuhvata dve aktivnosti: Ispitivanje prekidačkih efekata u uzorcima iz sistema Cu-As-Se-I i ispitivanje spektralnih karakteristika uzoraka iz sistema Cu-As-Se-I. Pored toga, projekat obuhvata sintezu i karakterizaciju nanostrukturnih filmova TiO2 na različitim podlogama, nanoštapića TiO2 dopiranih azotom ili trovalentnim jonima europijuma, samarijuma i terbijuma, kao i ispitivanje njihove fotokatalitičke aktivnosti, strukturnih i luminescentnih svojstava.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Inovacioni centar Tehnološki-metalurškog fakulteta u Beogradu, Institut za nuklearne nauke „Vinča”, Institut tehnilkih nauka Srpske akademije nauka i umetnosti, Prirodnomatematički fakultet u Novom Sadu, Tehnološko-metalurškki fakultet u Beogradu, Fakulte tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Dragana Štrbac
Oprema nabavljena iz projektnih sredstava

Projects of Integral and Interdisciplinary Research -Title
REDUCED DIMENSIONALITY METARIJALI FOR EFFICIENT ABSORPTION OF LIGHT AND ENERGY CONVERSION.
Project code / Acronym:
III 45020
Web site:
Grantholder
Jovan Nedeljković, PhD - Vinca Institute for Nuclear Sciences
Coordinator FTS:
Associated professor Dragana Štrbac
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Integral Interdisciplinary Research - III
Summary:
Part of the year that is being implemented at the University of Novi Sad consists of two activities: Investigation of switching effects in samples of Cu-As-Se-I and spectral characteristics of the test samples of Cu-As-Se-I. In addition, the project involves the synthesis and characterization of nanostructured TiO2 films on various substrates, TiO2 doped with nitrogen nano stick or trivalent ions europium, samarium and terbium, as well as examining their photo catalytic activity, structural and luminescent properties.
Duration:
2011-2015
***Partners**:*
Inovatiion Center Faculty of Technology & Metallurgy in Belgrade, Vinca Institute for Nuclear Sciences, Institute of Technical Sciences of SASA, Faculty of Sciences in Novi Sad, Faculty of Technology & Metallurgy in Belgrade, Faculty of Technical Sciences
Researchers from the FTS:
Dragana Štrbac
Equipment purchased from project funds:

Projekti Integralnih i interdisciplinarnih istraživanja – naziv:

ISTRAŽIVANJE I RAZVOJ ENERGETSKI I EKOLOŠKI VISOKOEFEKTIVNIH SISTEMA POLIGENERACIJE ZASNOVANIH NA OBNOVLJIVIM IZVORIMA ENERGIJE

Oznaka projekta / akronim:

III 42006

Web:

/

Rukovodilac projekta:

Prof. dr Velimir Stefanović, Mašinski fakultet u Nišu

Rukovodilac projekta sa FTN:

Prof dr Branka Nakomčić Smaragdakis

Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)

Integralna interdisciplinarna istraživanja – III

Opis projekta:

Poligeneracija pretstavlja integrisani proces u toku koga se proizvodi više različitih proizvoda. U ovom projektu razmatraće se sistemi poligeneracije koji pretstavljaju sintezu trigeneracijskog sistema, koji prozvodi toplotnu, rashladnu i električnu energiju, i gasifikacionog sistema, koji proizvodi biogas od organskog otpada koji sagoreva u cilju dobijanja električne i toplotne energije. Istraživanje i razvoj energetski i ekološki visoko efektivnih sistema poligeneracije zasnivaće se naprimeni obnovljivih izvora energije (OIE) i to: sunčeve energije, biomase, biogasa i urbanog otpada. Trigeneracijski sistemi pronalaze svoju primenu gde god postoji potražnja za toplotnom, rashladnom i električnom energijom. Ovo znači da je oblast primene vrlo široka počevši od postrojenja malih snaga, za potrebe individualnih porodičnih zgrada, pa do postrojenja velikih snaga za rešavanje energetskih potreba sportskih centara, bolnica, škola, aerodroma, hotela itd. Trigeneracija se može vrlo efikasno primenjivati za rešavanje energetskih potreba u različitim oblastima prehrambene industrije (pasterizacija, fermentacija, sušenje, zamrzavanje, hlađenje, itd), hemijske i drugim industrijama, dakle svuda gde postoji istovremena potreba za toplotnom, rashladnom i električnom energijom. Istraživanja i razvoje nergetski i ekološki visoko efektivnih sistema poligeneracije zasnovanih na korišćenju obnovljivih izvora energije, odnose se na analizu, optimizaciju i razvoj čitavog spectra različitih sistema poligeneracije.

Različitost ovih sistema posledica je različitih nivoa snaga koje generišu (20kW – 25MW), različitih obnovljivih izvora koje koriste, kao I različitih tehnologija za proizvodnju toplotne, rashladne i električne energije. Proizvodnja rashladne energije biće zasnovana na korišćenju apsorpcione toplotne pumpe, dok će se za proizvodnju mehaničkog rada i električne energije koristiti parna turbina, gasna turbine ili neki od motora sa unutrašnjim sagorevanjem. Koja će se konfiguracija sistema poligeneracij koristiti zavisiće od rezultata optimizacije sistema koja će uzeti u obzir raspoloživost resursa OIE na određenoj lokaciji i dostupnost pojedinih tehnologija koje ulaze u system poligeneracije. Razmatraće se: ukupno utrošena energija za svaku vrstu sistema poligeneracije i obnovljivi izvor energije, ukupno proizvedena energija željenih karakteristika i emisija štetnih materija. U cilju ekonomske analize, analizirače se cena materijala, uređaja i mašina kod nasi u svetu, kao i proizvodna i prodajna cena toplotne, rashladne i električne energije koju system poligeneracije proizvodi. Integrisanje i tehno-ekonomska optimizacija sistema poligeneracije (POLIGEN-OIE) će se obaviti sastanovišta maksimalne eksergetske i energetske efikasnosti, minimizacije emisije ugljendioksida i drugih štetnih materija, i maksimiranja ekonomskih efekata. Razmatrani ekonomski parametri održivosti optimalno grešenja između ostalog biće: rok povraćaja investicije, cena proizvedene energije i stopa dobiti tokom korišćenja sistema poligeneracije. U okviru Projekta planiraju se sledeće istraživačke aktivnosti: 1. Prikupljanje i formiranje baza podataka o resursima obnovljivih izvora energije, poligeneracijskim tehnologijama, mašinama i uređajima, pravnoj regulativi, ekološkimi ekonomskim pokazateljima rada energetskog sistema. 2. Istraživanje i komparativna analiza naučno-stručnih radova, novih tehnologija i izvedenih tehnoloških rešenja. 3. Razvoj idejnih rešenja pojedinačnih tehnologija POLIGEN-OIE; 4. Razvoj idejnih rešenja integrisanog sistema POLIGEN-OIE; 5. Matematičko modeliranje, izrada aplikativnog softvera i simulacija rada POLIGEN-OIE; 6. Razvoj projektnih rešenja energetskih podsistema; 7. Razvoj algoritma i realizacija softvera za multikriterijumsku tehno-ekonomsku optimizaciju sistema POLIGEN-OIE; 8. Optimizacija rada POLIGEN-OIE i ispitivanje termodinamičke održivosti sa stanovišta bilansa eksergije i energije, ekonomije i uticaja na životnu sredinu u našim uslovima. 9. Projektovanje merne instalacije za monitoring performansi postrojenja POLIGEN-OIE. 10. Izgradnja eksperimentalnog i demonstracionog postrojenja POLIGEN-OIE, ispitivanje performansi i verifikacija projektnog rešenja; 11. Istraživanje i analiza ekoloških efekata, mogućnosti i perspektiva primene OIE u sistemima poligeneracije; 12. Ekonomska analiza - "Cost Benefit" analiza, analiza rizika i osetljivosti sistema poligeneracije u slučaju da dođe do promene ključnih parametara u toku životnog veka postrojenja; 13. Definisanje podsticajnih mera, zakonske regulative i propisa lokalne samouprave radi stvaranja uslova za implementaciju novih poligeneracijskih tehnologija; 14. Deseminacija rezultata u zemlji i inostranstvu kroz konferencije i pisanje radova za časopise sa SCI liste. Projekat sadrži 5 podprojekata: 1.Hibridni sistem za energetsku konverziju definisanih OIE; 2.Poligeneracijske tehnologije – Proizvodnja toplotne i rashladne energije; 3.Poligeneracijske tehnologije – Proizvodnja električne energije; 4.Matematička modeliranja i tehno-ekonomska optimizacija sistema poligeneracije; 5.Ekološki i ekonomski aspekti primene poligeneracije zasnovane na OIE

Trajanjeprojekta:

2011-2015

Institucije učesnici / partneri:

Ekonomski fakultet u Nišu, Institut za nuklearne nauke u Vinči, Mašinski fakultet u Beogradu, Mašinski fakultet u Kragujevcu, Mašinski fakultet u Nišu, Tehnološki fakultet u Leskovcu, Fakultet zaštite na radu u Nišu, Fakultet tehničkih nauka u NovomSadu, Fakultet tehničkih nauka u Kosovskoj Mitrovici

Učesnici –istraživači sa FTN

Branka Nakomčić Smaragdakis, Tijana Dvornić, Slavko Đurić, Višnja Mihaljović

Oprema nabavljena iz projektnih sredstava

Projects of Integral and Interdisciplinary Research -Title

RESEARCH AND DEVELOPMENT OF ENERGY EFFICIENT AND ENVIRONMENT FRIENDLY POLYGENERATION SYSTEMS BASED ON RENEWABLE ENERGY SOURCES UTILIZATION

Project code / Acronym:

III 42006

Web site:

/

Grantholder

Prof. dr Velimir Stefanović

Coordinator FTS:

Associate Professor Branka Nakomčić Smaragdakis

ScientificResearch Fields /Type of research(Fundamental / Applied / Development)

Integral Interdisciplinary Research - III

Summary:

The outputs of polygeneration as an integrated process in this project are energy (heat, cold and electricity) and material goods: syngas and CO2. The expected byproducts of syngas production will be heat and heavy carbon-hydrogen compounds, and a byproduct of biomass and syngas combustion will be a certain quantity of CO2 which can be utilized in agriculture. Secondary agricultural and forest biomass, separated organic urban waste and solar energy (SE) are planned to be the initial energy resources. Periodic supply as well as insufficient input sources is eliminated by biomass storage and maximum utilization of the available SE. The system can be implemented wherever heat, cold and electricity are needed, from small scale plants (for individual residential buildings) to the large scale plants (for sport centers, hospitals, airports, hotels) but also for the specific demands of food industry (pasteurization, fermentation, drying, freezing, cooling, etc.), chemical industry as well as agriculture (fruit growing, early berries in greenhouses, fish ponds etc. The study of energy efficient and environmentally friendly polygeneration systems will be focused on analysis, development and optimization of different scale plants (from 20kW to 23MW). Research activities involve the development and optimization of four basic parts: 1) combustion chamber capable of burning different forms of biomass (residuals, wood chips and pellets), 2) gas generator and syngas combustion chamber, 3) an installation for syngas treatment for the gas engine and 4) a solar energy to heat converter with an adequate concentrator.

The production of cold is based on absorption heat pump utilization, and the production of mechanical energy and electricity is based on internal combustion engine, steam or gas turbine utilization. Polygeneration system configuration will depend on the results of system optimization, availability of renewable energy sources (RES) and available technologies. Energy balance of the system as well as pollutant emissions shall be reviewed. Economic analysis will consist of the energy costs, material cost, machine and facility costs on both domestic and world markets, production costs and selling prices of produced heat, cold and electricity. Integration and techno-economic polygeneration system optimization will be carried out with respect to maximum exergy and energy efficiency, minimum pollutant emissions and maximum economic effects. Reviewed economic sustainability parameters will involve: investment pay-back period, produced energy cost and exploitation rate of a polygeneration system. The following research activities are planned: 1.Acquiring data and forming the renewable energy sources, polygeneration technologies data bases, machines and installations, legal issues, ecological and economic system operation parameters. 2.A review of scientific research trends with a comparative prediction analysis of the future solutions based on available scientific articles; 3.Developing technical solutions for the system components (both hybrid and polygeneration); 4.Choosing pilot area, macro and micro location, available energy sources analysis, consumption spectrum, decision making regarding plants power range. 5.Adopting technological concept with a feasibility study with estimation and calculation; 6.Developing and adopting a project solution for the hybrid energy system (combustion chamber, burner and combustion chamber for sorted and granulated biomass, wood chips, pellets; combustion area, burner, combustion product treatment and generated gas treatment, solar converter). 7.Measurement regulation, acquisition and monitoring facility technique project realization; 8.Polygeneration subsystem project solution development and adoption with the definition of quality and quantity of the generated products; 9.Mathematical modeling, software application development and POLYGEN RES system operation simulation; 10.Algorithm development and software realization into a multi-criteria, techno-economic optimization of the POLIGEN-RES system; 11.POLIGEN-RES system optimization and thermodynamic sustainability research on the basis of exergy and energy analysis, economy and environmental impact; 12.Construction of an experimental demonstrative POLIGEN-RES plant, performance research and project solution verification; 13.Environmental impact research; 14.Analysis: a) economic – cost benefit, b) risk, c) system sensibility on key life factor changes; 15.Defining stimulating measures, legal issues and local government acts related to polygenration implementation; 16.Result dissemination in the country and abroad through conferences and articles in the SCI list journals. The project consists of 5 subprojects: 1.Hybrid system for converting energy of the defined RES; 2.Polygeneration technologies – Production of heating and cooling energy; 3.Polygeneration technologies – Production of electricity; 4.Mathematical modeling and techno-economic polygeneration system optimization; 5.Environmental and economical aspects of RES based polygeneration implementation.

Duration:

2011-2015

Partners:

Faculty of Economics in Niš, Vinča Institute of Nuclear Sciences, Faculty of Mechanical Engineering in Belgrade, Faculty of Mechanical Engineering in Kragujevac, Faculty of Mechanical Engineering in Niš, Faculty of Technology in Leskovac, Faculty of Occupational Safety in Niš, Faculty of Technical Sciences in Novi Sadu, Faculty of Technical Sciences in Novi in Kosovska Mitrovica

Researchers *from the FTS:*

Branka Nakomčić Smaragdakis, Tijana Dvornić, Slavko Đurić, Višnja Mihaljović

Equipment purchasedfrom projectfunds:

Projekti Integralnih i interdisciplinarnih istraživanja – naziv:
RAZVOJ I UNAPREĐENJE TEHNOLOGIJA ZA ENERGETSKI EFIKASNO KORIŠĆENJE VIŠE FORMI POLJOPRIVREDNE I ŠUMSKE BIOMASE NA EKOLOŠKI PRIHVATLJIV NAČIN UZ MOGUĆNOST KOGENERACIJE
Oznaka projekta / akronim:
III 42011
Web:
http://www.mpn.gov.rs/nauka/page.php?page=264
Rukovodilac projekta:
Dr Branislav Repić, Institut za nuklearne nauke „Vinča”
Rukovodilac projekta sa FTN:
Prof. dr Milan Martinov
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Integralna interdisciplinarna istraživanja – III
Opis projekta:
Projekat je u vezi definisanja karakteristika i logistike biomase, kao i uticaj odnošenja na plodnost zemljišta. Fokusiran je na najznačajnije biljne vrste u Srbiji, a to su kukuruz, pšenica, soja i suncokret. Projekat uključuje takođe aktivnosti u vezi istraživanja i razvojna u odnosu na žetvu, transport, skladištenje i promene forme biomase.
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Inovacioni centar Mašinskog fakulteta u Beogradu, Institut za zemljište u Beogradu, Institut za nuklearne nauke „Vinča” Mašinski fakultet u Beogradu, Poljoprivredni fakultet u Novom Sadu, Fakultet tehničkih nauka u Novom Sadu.
Učesnici –istraživači sa FTN
Milan Martinov, Bojić Savo, Marko Golub, Đorđe Đatkov, Miodrag Višković
Oprema nabavljena iz projektnih sredstava
Oprema je naručena, još nije isporučena! *1. Vaga za utvrđivanje vlage materijala.* *2. Merač temperature, vlage, brzine vazduha.* *3. Senzor relativne vlažnosti vazduha.* *4. Kranska vaga.* *5. Terenski lap top za snimanje podataka.* *6. Kalorimetar.* *7. Merač težina bala- hidraulični dizač+merna ćelija.* *8. Razna laboratorijska oprema.*

Projects of Integral and Interdisciplinary Research -Title
DEVELOPMENT AND IMPROVEMENT OF TECHNOLOGIES FOR ENERGY EFFICIENT USE OF DIFFERENT SORTS OF AGRICULTURAL AND FOREST BIOMASS ON ECOLOGICALLY ACCEPTABLE APPROACH, WITH THE POSSIBILITY OF COGENERATION
Project code / Acronym:
III 42011
Web site:
http://www.mpn.gov.rs/nauka/page.php?page=264
Grantholder:
Branislav Repić, PhD - *Vinca Institute for Nuclear Sciences*
Coordinator FTS:
Professor Milan Martinov, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Integral Interdisciplinary Research - III
Summary:
The project is related to defining biomass characteristics, logistic and influence of biomass offtake on soil fertility. It is focused on most common field crops in Serbia, corn, wheat, soybean and sunflower. The project includes also research and development activities related to biomass harvesting, transport, storage and form transformation.
Duration:
2011-2015
***Partners**:*
Inovation Center of Faculty of Mechanical Engineering in Belgrade Institute of Soil Sciences in Belgrade, Vinca Institute for Nuclear Sciences, Faculty of Mechanical Engineering in Belgrade, Faculty of Agronomy in Novi Sad, Faculty of Technical Sciences in Novi Sad.
Researchers from the FTS:
Milan Martinov, Bojić Savo, Marko Golub, Đorđe Đatkov, Miodrag Višković
Equipment purchased from project funds:
The equipment has been purchased, but not delivered yet! *1. Scale for moisture content determination.* *2. Temperature, humidity, speed meter for air.* *3. Sensor of relative air humidity.* *4. Crane scale.* *5. Lap top for data collection on site.* *6. Calorimeter.* *7. Device for weighing of bales- hidraulic errector + measuring cell.* *8. Miscellaneous laboratory equipement.*

Projekti Integralnih i interdisciplinarnih istraživanja – naziv:
SMANJENJE AEROZAGAĐENJA IZ TERMOELEKTRANA U JP ELEKTROPRIVREDA SRBIJE
Oznaka projekta / akronim:
III 42010
Web:
-
Rukovodilac projekta:
Dr Predrag Stefanović, Institut za nuklearne nauke u Vinči
Rukovodilac projekta sa FTN:
Docent dr Dejan Ubavin
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Integralna interdisciplinarna istraživanja – III
Opis projekta:
Predloženim projektom se planira realizacija multidisciplinarnih naučno-istraživačkih i razvojnih aktivnosti, kompatibilnih sa investicionim aktivnostima JP EPS u cilju generisanja i prikupljanja novih znanja i baza podataka o karakteristikama domaćih niskokvalitetnih lignita i procesa u postojećim kotlovskim postrojenjima termoelektrana u cilju definisanja i implementacije najboljih tehnologija i najefikasnijih tehničkih rešenja za smanjenje aerozagađenja (česticama pepela, SOx, NOx,) iz termoelektrana JP EPS-a do nivoa dozvoljenog međunarodnim propisima (Directive /2001/80/EC). Istraživanja obuhvataju baznu laboratorijsku karakterizacija domaćeg niskokvalitetnog lignita, ugljenog praha i letećeg pepela i aplikativna eksperimentalna ispitivanja stanja opreme i procesa na termoenergetskom kotlu JP EPS–a, pre i posle investicionih zahvata i optimizaciju parametara rada na osnovu ovih kompleksnih merenja radi definisanja i implementacija mera (kao što su primarne mere za smanjenje NOx ili optimizacija rada postojećih uređaja i razvoji primena novih srednjefrekventnih za napajanje elektrofiltera) za unapređenje procesa podizanja energetske efikasnosti i smanjenja aerozagađenja. Osvojene metode, bazna znanja, baze podataka i aplikativni rezultatu u vidu tehničkih rešenja biće implementirani na jednom bloku od 300 MW JP EPS-a radi praktičnog smanjenja emisije štetnih materija i gasova staklene bašte primenom primarnih mera kao primer dobre prakse za implementaciju na drugim blokovima EPS-a.
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Institut za nuklearne nauke u Vinči, Elektrotehnički institut „Nikola Tesla”, Mašinski fakultet u Beogradu, Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Nemanja Stanisavljević, Dejan Ubavin, Bojan Batinić
Oprema nabavljena iz projektnih sredstava
-

Projects of Integral and Interdisciplinary Research -Title

LOWERING OF AIR POLLUTION FROM POWER PLANTS IN EPS

Project code / Acronym:

III 42010

Web site:

Grantholder

Predrag Stefanović, PhD - Vinca Institute for Nuclear Sciences

Coordinator FTS:

Associated professor Dejan Ubavin, PhD

Scientific Research Fields / Type of research (Fundamental / Applied / Development)

Integral Interdisciplinary Research - III

Summary:

With proposed project a plan for realization of multidisciplinary scientific research and development activities, compatible with investment activities of PC EPS in order to generate and gather new knowledge and database on the characteristics of domestic low-quality lignite and processes in existing boiler thermal power plants in order to define and implement the best technology and most efficient technical solutions to reduce air pollution (ash particles, SO_x, NO_x) from PC EPS power plants to the extent permitted by international regulations (Directive /2001/80/EC).

Research includes baseline laboratory characterization of low-quality domestic coal, coal dust and fly ash and applied experimental testing of equipment and processes of PC EPS steam power boiler before and after of investments and optimization of operating parameters on the basis of these complex measurements for purposes of defining and implementing of measures (such as primary measures to reduce NOx or optimization of existing devices, and development of new medium frequency electric power supply devices for electrical filter) for improvement of energy efficiency processes and reduction of air pollution. Methods adopted, base knowledge, databases and applied results in the form of technical solutions will be implemented on a single PC EPS block of 300 MW in order to reduce emission of pollutants and greenhouse gases, using primary measures as an example of good practice for the implementation in other blocks of PC EPS.

Duration:

2011-2015

***Partners**:*

Vinca Institute for Nuclear Sciences, The Nikola Tesla Institute of Electrical Engineering, Faculty of Mechanical Engineering in Belgrade, Faculty of Technical Sciences in Novi Sad

Researchers *from the FTS:*

Nemanja Stanisavljević, Dejan Ubavin, Bojan Batinić

Equipment purchased from project funds:

Projekti Integralnih i interdisciplinarnih istraživanja – naziv:
MAGNETNI I RADIONUKLIDIMA OBELEŽENI NANOSTRUKTURNI MATERIJALI ZA PRIMENE U MEDICINI
Oznaka projekta / akronim:
III 45015
Web:
Rukovodilac projekta:
Dr Vojislav Spasojević, Institut za nuklearne nauke Vinča
Rukovodilac projekta sa FTN:
Prof. dr Milica Vučinić Vasić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Integralna interdisciplinarna istraživanja – III
Opis projekta:
Projekat čine sledeći potprojekti: 1. Dizajn nanomagnetnih materijala za primenu u magnetnoj rezonanci i magnetnoj hipertermiji; 2. Dizajn novih radionuklidima obeleženih nanostrukturnih materijala za dijagnostiku i ciljanu radionuklidnu terapiju malignih tumora; 3. Istraživanje i razvoj novih radiofarmaceutika zasnovanih na nanomaterijalima; 4. Istraživanje multifunkcionalnih radionuklidima obeleženih magnetnih nanočestica za simultanu radionuklidnu terapiju i magnetnu hipertermiju.
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Institut za multidisciplinarna istraživanja Beograd, Institut za nuklearne nauke „Vinča”, Medicinski fakultet u Nišu, Rudarsko-geološki fakultet u Beogradu, Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Milica Vučinić Vasić, Aleksandar Antić
Oprema nabavljena iz projektnih sredstava
-

Projects of Integral and Interdisciplinary Research -Title
MAGNETIC AND RADIONUCLIDE MARKED NANOSTRUCTURED MATERIALS FOR APPLICATIONS IN MEDICINE
Project code / Acronym:
III 45015
Web site:
Grantholder
Vojislav Spasojević, PhD – Vinca Institute for Nuclear Sciences
Coordinator FTS:
Professor Milica Vučinić Vasić, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Integral Interdisciplinary Research - III
Summary:
The project consists of the following sub-projects: 1 Design nanomagnetnih materials for use in MRI and magnetic hyperthermia; 2 The design of new nanostructured materials labeled with radionuclides for diagnosis and targeted radionuclide therapy of malignant tumors; 3 Research and development of new radiopharmaceuticals based on nanomaterials; 4 Research multifunctional radionuclide labeled magnetic nanoparticles for simultaneous radionuclide therapy and magnetic hyperthermia.
Duration:
2011-2015
***Partners**:*
Institute for Multidiciplinary Research, Vinca Institute for Nuclear Sciences, Faculty of Medicine in Novi Sad, Faculty of Mining and Geology, Faculty of Technical Scineces in Novi Sad
Researchers from the FTS:
Milica Vučinić Vasić, Aleksandar Antić
Equipment purchased from project funds:
-

Projekti Integralnih i interdisciplinarnih istraživanja – naziv:

RAZVOJ NOVIH INFORMACIONO-KOMUNIKACIONIH TEHNOLOGIJA, KORIŠĆENJEM NAPREDNIH MATEMATIČKIH METODA SA PRIMENAMA U MEDICINI, TELEKOMUNIKACIJAMA, ENERGETICI, ZAŠTITI NACIONALNE BAŠTINE I OBRAZOVANJU

Oznaka projekta / akronim:

III 44006

Web:

http://www.mi.sanu.ac.rs/projects/044006s.htm

Rukovodilac projekta:

Dr Zoran Ognjanović, Matamatički institut SANU

Rukovodilac projekta sa FTN:

Prof. dr Jovanka Pantović

Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)

Integralna interdisciplinarna istraživanja – III

Opis projekta:

U projektu će učestvovati 34 institucije i 192 istraživača iz oblasti matematike, IKT i njihovih primena u medicini, sistemima za električnu energiju i digitalizaciji kulturne baštine. Predviđamo sledeće potprojekte:

01. Inteligentni sistem za kliničke konsultacije (vođa potprojekta M. Rašković)
02. Napredne tehnike kriptologije i primenjene matematike za informacionu bezbednost u distribuiranim sistemima (M. Mihaljević)
03. Algoritmi, kombinatorika i optimizacija (K. Vušković)
04. Matematička analiza obnovljivih izvora energije (M. Nedeljkov)
05. Simulacija, analiza i optimizacija telekomunikacionih mreža (A. Cvetković)
06. Razvoj inteligentnih sistema baziran na data-mining-strategijama (G. Rakočević)
07. Middleware za simultano upravljanje i kontrolu distribuiranih sistema za opštinske komunalne servise (Z. Stajić)
08. Adaptivni sistemi za računarski podržano učenje (M. Stanković)
09. Primene IKT u digitalizaciji i naučno-istorijsko-arhivskom tretmanu kulturnog nasleđa (Ž. Mijajlović)
10. Napredne metode u 3D modeliranju i simulaciji originalnih patenata Nikole Tesle (V. Vučković)
11. Portal Srpskih Službenih Novina 1813-2013 (D. Domazet)
12. 1700 godina Milanskog edikta: car Konstantin i Medijana (M. Korać)

Razvoj 3D modela Medijane iz IV veka, animirani film o Konstantinovom životu i veb portal koji će posetiocima omogućiti šetnju po virtuelom gradu. Biće kreiran hologram za prezentovanje objekata i scena. U projekat će biti uključeni J. Edmonds, jedan od osnivača kombinatorne optimizacije, i Z. Obradović, direktor centra za informacione nauke i tehnologije Temple University u Filadelfiji. Biće angažovano 57 mladih istraživača, kao svojevrstan doprinos sprečavanju "odliva mozgova".

Dodatne aktivnosti će uključivati: Koordinaciju istraživačkih planova kako bi se omogućilo formiranje održivog dugoročnog partnerstva, Razmenu znanja i iskustava, Organizaciju info-dana i konferencija, Aktivnosti na poljima diseminacije i promocije.

Trajanje projekta:

2011-2015

Institucije učesnici / partneri:

Arheološki institut u Beogradu, Fakultet za međunarodnu ekonomiju u Beogradu, Građevinski fakultet u Subotici, Građevinsko-arhitektonski fakultet u Nišu, Ekonomski fakultet u Beogradu, Ekonomski fakultet u Subotici, Elektronski fakultet u Nišu, Elektrotehnički institut „Nikola Tesla" Beograd, Elektrotehnički fakultet u Beogradu, Inovacioni centar Elektrotehničkog fakulteta d.o.o., Institut „Kirilo Savić" u Beogradu, Istraživačko razvojni centar Alfatec d.o.o. Niš, Matematički institut SANU u Beogradu, Matematički fakultet u Beogradu, Mašinski fakultet u Beogradu, Mašinski fakultet u Nišu, Medicinski fakultet u Beogradu, Poljoprivredni fakultet u Beogradu, Prirodnomatematički fakultet u Kosovskoj Mitrovici, Prirodnomatematički fakultet u Kragujevcu, Prirodnomatematički fakultet u Novom Sadu, Tehnički fakultet u Čačku, Univerzitet Singidunum u Beogradu, Univerzitet UNION – Računarski fakultet, Fakultet za kompjuterske nauke Megatrend univerziteta, Univerzitet Privredna akademija u Novom Sadu, Fakultet za poslovne studije, Fakultet za zaštitu na radu u Nišu, Univerzitet Metropolitan, Fakultet tehnilkih nauka u Novom Sadu, Fakultet tehnilkih nauka u Kosovskoj Mitrovici, Filozofski fakultet u Beogradu.

Učesnici –istraživači sa FTN

Aleksandar Kupusinac, Jelena Ivetić, Nataša Sladoje, Svetlana Jakšić, Aleksandar Nikolić, Dušan Sakulski, Đorđe Ćosić, Tibor Lukić, Zorica Uzelac, Silvia Gilezan, Srđan Popov, Jovanka Pantović, Sandra Buhmiler, Aleksandar Janjić

Oprema nabavljena iz projektnih sredstava

Projects of Integral and Interdisciplinary Research -Title

DEVELOPMENT OF NEW INFORMATION AND COMMUNICATION TECHNOLOGIES, BASED ON ADVANCED MATHEMATICAL METHODS, WITH APPLICATIONS IN MEDICINE, TELECOMMUNICATIONS, POWER SYSTEMS, PROTECTION OF NATIONAL HERITAGE AND EDUCATION

Project code / Acronym:

III 44006

Web site:

http://www.mi.sanu.ac.rs/projects/044006e.htm

Grantholder:

Zoran Ognjanović,PhD - Mathematical Institute of the Serbian Academy of Sciences and Arts

Coordinator FTS:

Professor Jovanka Pantović, PhD

Scientific Research Fields / Type of research (Fundamental / Applied / Development)

Integral Interdisciplinary Research - III

Summary:

The project team will comprise 34 institutions and 192 researchers in mathematics, ICT and its applications into health, power systems, and digitization of cultural heritage. We envisage the following subprojects:

01. Intelligent clinical consultation system (subproject leader: M. Rašković)
02. Advanced cryptology techniques and applied mathematics for information security in distributed systems (M. Mihaljević)
03. Algorithms, combinatorics and optimization (K. Vušković)
04. Mathematical analysis of renewable energy sources (M. Nedeljkov)
05. Simulation, analysis and optimization of wireless telecommunication networks (A. Cvetković)
06. Development of intelligent systems based on data mining strategies (G. Rakočević)
07. Middleware for simultaneous management and control of distributed systems from municipal communal services (Z. Stajić)
08. An adaptive system of computer assisted learning (M. Stanković)
09. Applications of ICT in digitization and scientific-historical-archival treatment of heritage (Ž. Mijajlović)
10. Advanced Methods in 3D Modeling and Simulating of the Original Patents of Nikola Tesla (V. Vučković)
11. A portal of Serbian Official Papers 1813-2013 (D. Domazet)
12. 1700th anniversary of the Edict of Milan: Emperor Constantine and Mediana (M. Korać)

The project will involve J. Edmonds, one of the creators of the field of combinatorial optimization, and Z. Obradovic, director of the Center for Information Science and Technology at Temple University, Philadelphia. 57 young researchers will be hired addressing the "brain drain".

Additional activities will be: Coordination of research agendas to facilitate the formation of sustainable long-term partnerships, Exchange of know-how and experience, Organization of info-days and conferences, Dissemination and promotional activities.

Duration:

2011-2015

Partners:

Institute of Archaeology Belgrade, Faculty if International Economics, Faculty of Civil Engineering in Subotica, Faculty of Civil Engineering and Architecture - University of Niš, Faculty Of Economics, Belgrade, Faculty of Economics in Subotica, Faculty of Electronic Engineering in Niš, The Nikola Tesla Institute of Electrical Engineering, School of Electrical Engineering in Belgrade, Innovation Center of the School of Electrical Engineering in Belgrade d.o.o., Institute „Kirilo Savić" in Belgrade, RD center "Alfatec" doo Nis., Mathematical Institute of the Serbian Academy of Sciences and Arts, Faculty of Mathematics, Faculty of Mechanical Engineering in Belgrade, Faculty of Mechanical Engineering in Niš, School of Medicine in Belgrade, Faculty of Agriculture in Belgrade, Faculty of Science and Mathematics in Kosovska Mitrovica, Faculty of Sciences in Kragujevac, Faculty of Sciences in Novi Sad, Technical Faculty Čačak, University Singidunum in Belgrade, UNION University – School of Computing, Megatrend University – Graduate School of Computer Sciences, University of Business Academy, Graduate School of Business Studies, Faculty of Occupational Safety in Nis, University Metropolitan, Faculty of Technical Sciences in Novi Sad, Faculty of Technical Sciences Kosovska Mitrovica, Faculty of Philosophy in Belgrade.

Researchers from the FTS:

Aleksandar Kupusinac, Jelena Ivetić, Nataša Sladoje, Svetlana Jakšić, Aleksandar Nikolić, Dušan Sakulski, Đorđe Ćosić, Tibor Lukić, Zorica Uzelac, Silvia Gilezan, Srđan Popov, Jovanka Pantović, Sandra Buhmiler, Aleksandar Janjić

Equipment purchased from project funds:

Projekti Integralnih i interdisciplinarnih istraživanja – naziv:
SINTEZA, PROCESIRANJE I KARAKTERIZACIJA NANOSTRUKTURNIH MATERIJALA ZA PRIMENU U OBLASTI ENERGIJE, MEHANIČKOG INŽENJERSTVA, ZAŠTITE ŽIVOTNE SREDINE I BIO MEDICINE
Oznaka projekta / akronim:
III 45012
Web:
Rukovodilac projekta:
Dr Branko Matović, Institut za nuklearne nauke Vinča
Rukovodilac projekta sa FTN:
Prof. dr Milica Vučinić Vasić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Integralna interdisciplinarna istraživanja – III
Opis projekta:
Projekat je organizovan u nekoliko celina – potprojekata. 1. Nanostrukturni čvrsti rastvori oksidnih i neoksidnih keramičkih materijala za primenu u elektronici i alternativnim izvorima energije. 2. Eksperimentalna i teorijska istraživanja nanostrukturnih materijala za skladištenje vodonika. 3. Procesiranje biomaterijala. 4. Sinteza i proučavanje neorganskih oksidnih i prirodnih organskih nanosrukturnih materijala. 5. Proučavanje formiranja i funkcionisanja lokalnih struktura u čvrstom stanju na atomskom nivou. 6. Strukturni visokotemperaturni materijali. 7. Primena metoda nuklearne fizike u istraživanju nanostrukturnih materijala i zaštiti životne sredine. 8. Ispitivanje i izmene strukture boljnog ćelijskog zida i njegovih komponenti kao osnove novih materijala za nanotehnologije.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Institut za multidisciplinarna istraživanja Beograd, Institut za nuklearne nauke „Vinča", Medicinski fakultet u Nišu, Poljoprivredni fakultet u Beogradu, Stomatološki fakultet u Beogradu, Tehnički fakultet u Čačku, Tehnološko-metalurški fakultet u Beogradu, Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Milica Vučinić Vasić
Oprema nabavljena iz projektnih sredstava
-

Projects of Integral and Interdisciplinary Research -Title
SYNTHESIS, PROCESSING AND CHARACTERIZATION NANOSTRUCTURED MATERIALS FOR APPLICATIONS IN THE AREAS OF ENERGY, MECHANICAL ENGINEERING, ENVIRONMENT AND BIO MEDICINE
Project code / Acronym:
III 45012
Web site:
Grantholder
Branko Matović, PhD – Vinca Institute for Nuclear Sciences
Coordinator FTS:
Professor Milica Vučinić Vasić, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Integral Interdisciplinary Research - III
Summary:
The project is organized into several parts - sub. 1. Nanostructured solid solutions of oxide and non-oxide ceramic materials for use in electronics and alternative energy sources. 2. Experimental and theoretical studies of nanostructured materials for hydrogen storage. 3. The processing of biomaterials. 4. Synthesis and study of inorganic oxides and natural organic materials nanosrukturnih. 5. The study of the formation and functioning of local structures in the solid state at the atomic level. 6. High-temperature structural materials. 7. The application of nuclear physics in the study of nanostructured materials and environmental protection. 8. Testing and modifications of the structure boljnog cell wall and its components as a basis for new materials for nanotechnology.
Duration:
2011-2015
Partners:
Institute for Multidiciplinary Research, Vinca Institute for Nuclear Sciences, Faculty of Medicine Niš, Faculty of Acriculture,, Faculty of Dental Medicine in Belgrade, Faculty of Technical Sciences in Čačak, Faculty of Technology and Metallurgy in Belgrade, Faculty of Technical Sciences in Novi Sad
Researchers from the FTS:
Milica Vučinić Vasić
Equipment purchased from project funds:
-

Ministarstvo prosvete, nauke i tehnološkog razvojna Republike Srbije

Projekti osnovnih istraživanja

OI

Ministry of Education, Science and Technology Development
Republic of Serbia

Projects of Fundamental Research

FR

Projekat osnovnih istraživanja – naziv:
MEHANIČKI KRITERIJUM OŠTEĆENJA I LOMA
Oznaka projekta / akronim:
OI 174004
***Web*:**
Rukovodilac projekta:
Prof. dr Marko Rakin, Tehnološko-metalurški fakultet Beograd
Rukovodilac projekta sa FTN:
Prof. dr Katarina Gerić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Osnovna istraživanja
Opis projekta:
Kriterijum oštećenja i razaranja različitih materijala i spojeva su od ključne važnosti za procenu kvaliteta, efikasnosti i bezbednosti rada konstrukcija. Tokom razvojna teorijske i primenjene mehanike, brojni modeli i kriterijumi su korišćeni za kvantitativnu anlizu oštećenja i loma, ali prevashodno na makroskopskom nivou. Imajući u vidu napredak postignut u karakterizaciji mikrostrukturnih parametara materijala i intezivni razvoj lokalnog pristupa mehanike loma, potrebno je definisaće se mikromehanički kriterijumi (kao sastavni delovi modela), kojima se predviđa nastanak i razvoj oštećenja na mikro i mezo nivou. Primenom mikromehaničkih modela se razmatraju i matematički predstavljaju upravo oni mehanizmi loma koji su od interesa za odgovarajući materijal.
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Državni univerzitet u Novom Pazaru, IMS – Institut za ispitivanje materijala Srbije, IMTEL – Komunikacije, Beograd, Inovativni centar Mašinskog fakulteta u Beogradu, Institut za nuklearne naule „Vinča". Mašinski fakultet u Beogradu, Mašinski fakultet u Nišu, Tehnološko-metalurški fakultet u Beogradu, Fakultet inženjerskih nauka univerziteta u Kragujevcu, Fakultet tehničkih nauka u Novom Sadu.
Učesnici –istraživači sa FTN
Katarina Gerić
Oprema nabavljena iz projektnih sredstava
-

Project of Fundamental Research – Title:
MECHANICAL CRITERIA FOR DAMAGE AND FRACTURE
Project code / Acronym:
OI 174004
Web site:
Grantholder
Prof. dr Marko Rakin, Faculty of Technology and Metallurgy, University of Belgrade.
Coordinator FTS:
Prof. dr Katarina Gerić
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Fundamental
Summary:
The criterion of damage and destruction of various materials and compounds are essential to assess the quality, effectiveness and safety of structures. During the development of theoretical and applied mechanics, numerous models and criteria were used for quantitative analysis of damage and fracture, but primarily on the macroscopic level. Given the progress made in the characterization of microstructural parameters of material and intensive development of the local approach to fracture mechanics, it is necessary to define the micromechanical criteria (as components of the model) which provide for the creation and development of damage to the micro and meso level. Application of micromechanical models are discussed and mathematically represent precisely those fracture mechanisms that are of interest to the appropriate material.
Duration:
2011-2015
***Partners**:*
State University of Novi Pazar, Institute for testing materials-IMS Institute, IMTEL – Comunication, Beograd, Innovation Centre – Faculty of Mechanical Engineering Belgrade, Vinča Institute of Nuclear Sciences. Faculty of Mechanical Engineering Belgrade, Faculty of Mechanical Engineering Niš, Faculty of Technology and Metallurgy, University of Belgrade., Faculty of Engineering University of Kragujevac, Faculty of Technical Sciences Novi Sad
Researchers from the FTS:
Katarina Gerić
Equipment purchased from project funds:
-

Projekat osnovnih istraživanja – naziv:
VISKOELASTIČNOST FRAKCIONOG TIPA I OPTIMIZACIJA OBLIKA U TEORIJI ŠTAPOVA
Oznaka projekta / akronim:
OI 174005
Web:
Rukovodilac projekta:
Akademik Teodor Atanacković, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Akademik Teodor Atanacković
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Mehanika / Osnovna istraživanja
Opis projekta:
U okviru projekta proučava se ponašanje visko-elastičnih tela frakcionog tipa kao i problem optimizacije oblika elastičnih štapova. Posebna pažnja posvećena je mogućnosti primene dobijenih rezultata u stomatologiji.
Trajanje projekta:
2011-2012
***Institucije učesnici / partneri**:*
Matematički institut SANU, Medicinski fakultet u Novom Sadu, Pedagoški fakultet u Somboru, Prirodno-matematički fakultet u Novom Sadu, Fakultet tehničkih nauka u Novom Sadu, Fakultet tehničkih nauka u Kosovskoj Mitrovici
Učesnici –istraživači sa FTN
Teodor Atanacković, Branislava Novaković
Oprema nabavljena iz projektnih sredstava

Project of Fundamental Research – Title:
VISCO-ELASTICITY OF FRACTIONAL ORDER TYPE AND SHAPE OPTIMIZATION IN THE ROD THEORY
Project code / Acronym:
OI 174005
Web site:
Grantholder
Academician Teodor Atanacković
Coordinator FTS:
Academician Teodor Atanacković
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Mechanics / Fundamental research
Summary:
Within the project we study visco-elastic bodies of fractional derivative order type and the problem of shape optimization of elastic rods. Special attention is paid to possibilities of applying the obtained results in the Dentistry problems.
Duration:
2011-2015
Partners:
Mathematical Institute of the Serbian Academy of Sciences and Arts, Faculty of Medicine, Faculty of Education Sombor, Faculty of Sciences in Novi Sad, Faculty of Technical Sciences in Novi Sad, , Faculty of Technical Sciences in Kosovska Mitrovica
Researchers from the FTS:
Teodor Atanacković, Branislava Novaković
Equipment purchased from project funds:

Republički program – Projekat:
MEHANIKA NELINEARNIH I DISIPATIVNIH SISTEMA – SAVREMENI MODELI, ANALIZA I PRIMENE
Oznaka projekta / akronim:
OI 174016
Web:
sites.google.com/site/mechanics174016
Rukovodilac projekta:
Prof. dr Srboljub Simić, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Srboljub Simić, Fakultet tehničkih nauka u Novom Sadu
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Matematika, kompjuterske nauke i mehanika / Osnovna istraživanja
Opis projekta:
Projekat je usmeren na istraživanje fundamentalnih problema mehanike nelinearnih i disipativnih sistema. Mogu se izdvojiti tri istraživačka pravca koja će se tokom projekta preplitati: 1) termomehanika neravnotežnih procesa u gasnim mešavinama i nelinearnim materijalima; 2) stabilnost, dinamika i bifurkacije diskretnih i neprekidnih sistema; 3) biomehanika. Podrazumeva se da će u sva tri pravca istraživanja biti zastupljeni elementi modeliranja sistema (matematički model, konstitutivne relacije), analize, koja uključuje i numeričke simulacije, i primena. U okviru prve teme je planirano da se formiraju i prouče nelinearni modeli višetemperaturnih gasnih mešavina i izotropnih nelinearnih materijala i analizira prostiranje nelinearnih talasa u njima (udarni talasi, sagorevanje i detonacije). Ovim problemima bi se pristupilo i sa aspekta fenomenoloških teorija, i sa aspekta kinetičke teorije gasova. Doprinos u okviru druge teme bi se odnosio na analizu stabilnosti i post-kritično ponašanje elastičnih štapova, analizu nestabilnosti ravnoteže holonomnih i neholonomnih diskretnih sistema sa disipacijom, oscilacije elastičnih ploča, uni i bimodalne opimizacije elastičnih štapova i analizu sudara i oscilacija krutih tela sa viskoelastičnim slojem i suvim trenjem. Treća tema treba da doprinese novim rezultatima na polju reološkog i dinamičkog modeliranja bioloških tkiva primenom frakcionih izvoda.
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Mašinski fakultet u Kraljevu, Medicinski fakultet u Novom Sadu, Prirodno-matematički fakultet u Novom Sadu, Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Ratko Maretić, Nenad Grahovac, Mađarević Damir, Srboljub Simić, Miodrag Žigić, Nemanja Kovinčić, Valentin Glavardanov, Dragan Spasić
Oprema nabavljena iz projektnih sredstava
Računarska oprema

Project - Title
MECHANICS OF NONLINEAR AND DISSIPATIVE SYSTEMS - CONTEMPORARY MODELS, ANALYSIS AND APPLICATIONS
Project code / acronim:
OI 174016
Web site:
sites.google.com/site/mechanics174016
Grantholder
Professor Srboljub Simić, PhD - Faculty of Technical Sciences Novi Sad
Coordinator FTS:
Professor Srboljub Simić, PhD - Faculty of Technical Sciences Novi Sad
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Mathematics, Computer Science and Mechanics / Fundamental research
Summary:
The project is focused on research of fundamental problems of mechanics of nonlinear and dissipative systems. There will be three directions of research which will be interwoven during the project: 1) thermo-mechanics of non-equilibrium processes in gaseous mixtures and nonlinear materials; 2) stability, dynamics and bifurcations of discrete and continuous systems; 3) bio-mechanics. It assumed that all three directions will comprise the elements of modeling (mathematical models, constitutive relations), analysis (including numerical simulations) and applications. Within the first topic it is intended to establish and study nonlinear models of multi-temperature gaseous mixtures and isotropic nonlinear materials and analyze nonlinear wave propagation in them (shock waves, deflagration and detonation). These problems will be tackled using phenomenological theories, as well as kinetic theory of gases. Contribution within the second topic will be related to stability analysis of and post-critical behavior of elastic rods, instability analysis of holonomic and non-holonomic discrete systems with dissipation, oscillations of elastic plates, uni- and bi-modal optimization of elastic rods and impact and vibration analysis of rigid bodies with visco-elastic layer and dry friction. Third topic is supposed to provide substantial contribution in the field of rheological and dynamical modeling of biological tissues using fractional derivatives.
Duration:
2011-2015
***Partners**:*
Faculty of Mechanical Engineering in Kraljevo, Medical Faculty in Novi Sad, Faculty of Sciences in Novi Sad, Faculty of Technical Sciences in Novi Sad
Researchers *from the FTS:*
Ratko Maretić, Nenad Grahovac, Mađarević Damir, Srboljub Simić, Miodrag Žigić, Nemanja Kovinčić, Valentin Glavardanov, Dragan Spasić
Equipment purchased from project funds:
Computer equipment

Republički program – Projekat:
DIZAJNIRANJE I MODELOVANJE SPECIFIČNIH OSOBINA NANOSTRUKTURNIH UZORAKA
Oznaka projekta / akronim:
OI 171039
Web:
Rukovodilac projekta:
Prof. dr Jovan Šetrajčić, Prirodno-matematički fakultet u Novom Sadu
Rukovodilac projekta sa FTN:
Docent Dubravko Ćulibrk
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvoja)
Osnovna istraživanja
Opis projekta:
Istraživanja u okviru projekta su usmerena na iznalaženje posebnosti kod provodnih i superprovodnih osobina nanostruktura i na njihove magnetne, feroelektrične i optičke specifičnosti posebno u oblasti dijagnostike, terapije i kontrole bioloških preparata i transporta nano-lekova. Istraživanja termodinamičkih osobina nanostruktura analizom fononskog podsistema imaju za cilj konstruisanje modelnih uzoraka sa poboljšanim termo i akustičko-izolacionim karakteristikama. Ispitivanje provodnih osobina je skoncentrisano na efekte elektron/šupljina-fononske interakcije i njihov uticaj na sitnozrnastu, tj. nanostrukturno povezano-oblasnu superprovodnost. Istraživanja optičke specifičnosti su fokusirana na problem povećanja koncentracije optičkih pobuđenja u nanostrukturama i postizanje monoapsorbera EMZ – nanouzoraka, čiji bi se položaj veoma lako detektovao i pratio u toku kretanja, posebno sa aspekta identifikacije položaja lekova upakovanih u šuplju nanosferu. Takođe u oblasti dijagnostike i terapije, istražuje se primena novih PET/CT i PET/MRI tehnologija u oblasti detekcije i praćenja metabolizma malignih tumora pluća, limfoma, jednjaka, tumora gastrointestinalnog trakta, glave i vrata i melanoma, kao i ginekoloških malignih tumora. U okviru projekta se posebna pažnja posvećuje primeni savremenih metoda i tehnika računarski podržanog modelovanja i dizajna materijala i istraživanja podataka.
Trajanje projekta:
2011-2014
Institucije učesnici / partneri:
Kriminalističko policijska akademija Beograd, Medicinski fakultet u Novom Sadu, Prirodno-matematički fakultet u Novom Sadu, Tehnički fakultet „Mihajlo Pupin u Zrenjaninu, Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Dr Dubravko Ćulibrk, Mr Dušan Ilić
Oprema nabavljena iz projektnih sredstava
—

Project – Title
DESIGN AND MODELING OF SPECIFIC PROPERTIES OF NANOSTRUCTURED SAMPLES
Project code / acromin:
OI 171039
Web site:
Grandholder
Prof. dr Jovan Šetrajčić, Faculty of Sciences Novi Sad
Coordinator FTS:
Assistant Professor Dubravko Ćulibrk
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Fundamental research
Summary:
Research conducted within the scope of the project focuses on discovering the conductive and superconductive properties of nanostructures and their magnetic, ferroelectric and optic characteristics that can be exploited for diagnostics, therapy, monitoring of biological materials and nano-medicine delivery. Research into the thermodynamic properties of nanostructures, through the analysis of the phonon subsystem, are aimed at the development of model samples, with enhanced thermo- and acoustic-isolation properties. On the other hand, the study of the conductive properties is focused on the effects of electron/hole-phonon interaction and its influence on the small-grain (nanostructure) connected area superconductivity. The study of the optical properties addresses the problems of increasing the concentration of optic excitations in the nanostructures and achieving EM radiation-monoabsorbant nanosamples, which could be easily detected and tracked to monitor the delivery of medicines packed in hollow nanospheres. Also in the diagnostics and therapy domain, the project will investigate the application of new PET/CT and PET/MRI technologies to detection and monitoring of malignant tumors of lung, esophagus, intestines, head, neck, gynecological tumors and melanoma. Within all the research areas of interest, the project will rely on state-of-the-art (and beyond) computer-aided material modelling, design, data mining and knowledge discovery techniques to further our understanding and help outline possible directions for practical applications.
Duration:
2011-2014
***Partners**:*
Criminal Police Academy, Belgrade, Medical Faculty in Novi Sad , Faculty of Sciences Novi Sad, "Mihajlo Pupin" Technical Faculty in Zrenjanin, Faculty of Technical Sciences Novi Sad
Researchers *from the FTS:*
Dr. Dubravko Ćulibrk, M.Sc. Dušan Ilić
Equipment purchased from project funds:

Projekat osnovnih istraživanja – naziv:
INTERDISCIPLINARNA ISTRAŽIVANJA KVALITETA VERBALNE KOMUNIKACIJE
Oznaka projekta / akronim:
OI 178027
Web:
nema
Rukovodilac projekta:
Dr Slobodan Jovičić, Centar za unapređenje životnih aktivnosti d.o.o.
Rukovodilac projekta sa FTN:
Doc. dr Milan Sečujski
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Govorna komunikacija, osnovna istraživanja
Opis projekta:
Projekat se bavi istraživanjima psihoemotivnih varijacija u govornom signalu, istraživanjima perceptivnog mehanizma u različitim psihoakustičkim uslovima komuniciranja, istraživanjima metoda poboljšanja kvaliteta govorne komunikacije, istraživanjima produkcije i percepcije patoloških manifestacija u govornom izrazu, kao i teorijskim i eksperimentalnim istraživanjima verbalno-neverbalne kognitivno-psihosomatske komunikacije.
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Elektrotehnički fakultet u Beogradu, Medicinski fakultet u Beogradu, Fakultet za specijalnu edukaciju i rehabilitaciju u Beogradu, Fakultet tehničkih nauka u Novom Sadu, Centar za unapređenje životnih aktivnosti d.o.o.
Učesnici –istraživači sa FTN
Milan Sečujski
Oprema nabavljena iz projektnih sredstava
Sitna kancelarijska oprema

Project of Fundamental Research – Title:
INTERDISCIPLINARY RESEARCH OF THE QUALITY OF VERBAL COMMUNICATION
Project code / Acronym:
OI 178027
Web site:
no
Grantholder
Dr Slobodan Jovičić, Center for Advanced Life Activities
Coordinator FTS:
Associated professor Milan Sečujski, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Verbal communication, fundamental research
Summary:
The project deals with the research of psycho emotional variations in the speech signal, the perceptive mechanism in various psychoacoustic conditions of communication, methods for the improvement of the quality of speech communication, production and perception of pathological manifestations in speech expression, as well as theoretical and experimental research of verbal and non-verbal cognitive and psychosomatic communication.
Duration:
2011-2015
***Partners**:*
School of Electrical Engineering, School of medicine, Faculty for Special Education and Rehabilitation in Belgrade, Faculty of Technical Sciences Novi Sad, Center for Advanced Life Activities in Belgrade
Researchers from the FTS:
Milan Sečujski
Equipment purchased from project funds:
Office accessories

Projekat osnovnih istraživanja – naziv:
RAČUNARSKA MEHANIKA U TEORIJI KONSTRUKCIJA
Oznaka projekta / akronim:
ON 174027
Web:
-
Rukovodilac projekta:
Prof. dr Aleksandar Prokić, Građevinski fakultet u Subotici
Rukovodilac projekta sa FTN:
Prof. dr Miroslav Hajduković
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Osnovna istraživanja
Opis projekta:
Projekat obuhvata istraživanja problema stabilnosti i dinamike homogenih i kompozitnih tankozidnih nosača, proizvoljnog otvorenog ili zatvorenog poprečnog preseka primenom metoda konačnih traka sa harmonijski spojenim Furijeovim redovima. Analiziraće se uticaji aksijalnih sila, momenata savijanja, napona smicanja, kao i efekti deplanacije preseka na stabilnosti i dinamičke karakteristike štapova. Istraživanja će uključiti određivanje naponsko-deformacijskog stanja u stenskim masama oko šupljina oblika sfere, cilindra i obrtnog elipsoida. Biće modeliran i originalni sistem pretvarača talasne energije u električnu, radi korišćenja ogromnog potencijala morskih talasa. Biće primenjena paralelizacija zasnovana na raznim programskim modelima radi ubrzanja neophodnih računarskih proračuna.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Građevinski fakultet u Subotici, Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Miroslav Hajduković, Bogdan Satarić, Žarko Živanov, Miljko Satarić, Petar Marić
Oprema nabavljena iz projektnih sredstava
-

Project of Fundamental Research – Title:
COMPUTATIONAL MECHANICS IN STRUCTURAL ENGINEERING
Project code / Acronym:
OI 174027
Web site:
-
Grantholder
Professor Aleksandar Prokić, PhD - Faculty of Civil engineering in Subotica
Coordinator FTS:
Professor Miroslav Hajduković, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Fundamental research
Summary:
In this project the stability and dynamic characteristics of homogeneous or composite thin-walled elements of arbitrary open and closed cross-section will be studied by application of modified finite strip method embracing the harmonic coupled Fourier series treatment. The influence of axial force, end moments, shear deformation and warping effect on stability and dynamic characteristics of beams shall be analyzed. The investigation of stress-strain field in rock mass around cavities having spherical, infinite cylindrical and oblong ellipsoidal shapes will be included. We will design a promising original model of a system of wave energy conversion into electricity aimed to utilize power of ocean waves. We will combine various parallelization techniques and architectures to speed up necessary computations.
Duration:
2011-2015
Partners:
Faculty of Civil engineering in Subotica, Faculty of Technical Sciences
Researchers from the FTS:
Miroslav Hajduković, Bogdan Satarić, Žarko Živanov, Miljko Satarić, Petar Marić
Equipment purchased from project funds:
-

Projekat osnovnih istraživanja – naziv:
FIZIKA AMORFNIH I NANOSTRUKTURNIH MATERIJALA
Oznaka projekta / akronim:
OI 171022
Web:
Rukovodilac projekta:
Prof. dr Svetlana Lukić Petrović, Prirodno-matematički fakultet u Novom Sadu
Rukovodilac projekta sa FTN:
Docent dr Dragana Štrbac
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvoja)
Osnovna istraživanja
Opis projekta:
Projekat je u osnovi eksperimentalnog karaktera u čijoj realizaciji dominira rad u laboratorijskim uslovima i korišćenje širokog spektra različitih metoda i savremene opreme. Njegov opšti cilj se odnosi na istraživanja fizičko-hemijskih parametara materijala sa amorfnom i nanostrukturnom matricom. Predmet istraživanja su balk uzorci i tanki filmovi različitih sistema. Ispituju se amorfnost, homogenost građe, strukturne osobine, termičke, mehaničke, optičke i spektralne osobine kao i ponašanje materijala u električnom i magnetnom polju. U okviru projekta se razvijaju i inovativne tehnike za sintezu luminescentnih nanoprahova, ispituju se njihova svojstva i fundamentalni procesi koji se dešavaju na nano nivou.
Trajanje projekta:
2011-2014
Institucije učesnici / partneri:
Institut za nuklearne nauke „Vinča", *Prirodno-matematički fakultet u Novom Sadu, Fakultet tehničkih nauka u Novom Sadu*
Učesnici –istraživači sa FTN
Dragana Štrbac
Oprema nabavljena iz projektnih sredstava
-

Department for Environmental Engineering

Project of Fundamental Research – Title:
PHYSICS OF AMORPHOUS AND NANOSTRUCTURED MATERIALS
Project code / acromin:
OI 171022
Web site:
Grandholder
Prof. dr Svetlana Lukić Petrović, Faculty of Sciences Novi Sad
Coordinator FTS:
Associeted professor Dragana Štrbac, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Fundamental research
Summary:
The project is essentially experimental in character in which implementation is dominated by work in the laboratory and use of a wide range of different methods and modern equipment. The overall goal of the research is related to the physical-chemical parameters of materials with amorphous and nano-structured matrix. The project studies balk samples and thin films of different systems. The characteristics of interest are amorphous character, homogeneity, structural characteristics, thermal, mechanical, optical and spectral properties and behavior of materials in electric and magnetic fields. The project also tends to develop innovative techniques for synthesis of luminescent nanopowders, examining their fundamental properties and processes occurring at the nano level.
Duration:
2011-2014
Partners:
Vinča Institute of Nuclear Sciences, *Faculty of Sciences Novi Sad, Faculty of Technical Sciences Novi Sad*
Researchers from the FTS:
Dragana Štrbac
Equipment purchased from project funds:
-

Projekat osnovnih istraživanja – naziv:

NUMERIČKA LINEARNA ALGEBRA I DISKRETNE STRUKTURE

Oznaka projekta / akronim:

OI 174019

Web:

Rukovodilac projekta:

Prof. dr Ljiljana Cvetković, Prirodno-matematički fakultet u Novom Sadu

Rukovodilac projekta sa FTN:

Prof. dr Mila Stojaković

Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)

Osnovna istraživanja

Opis projekta:

Numerička linearna algebra je savremena oblast matematike koja se intenzivno razvija zahvaljujući potrebi prilagođavanja i razvijanja numeričkih algoritama, radi implementacije u okviru savremenih informacionih tehnologija. Algoritam se smatra efikasnim ako je odabran u skladu sa specifičnom strukturom posmatranog problema.

Zbog toga je prvi korak u uspešnoj primeni numeričkih algoritama detaljna analiza prednosti uslovljenih specifičnom strukturom posmatranog problema. Kada je reč o linearnim problemima, glavni predmet istraživanja na ovom projektu je ispitivanje osobina matrica koje slede na osnovu njene specijalne strukture. Kada je reč o diskretnim strukturama, fokus je na izučavanju pozicionih igara na grafovima, istraživanjima raznih aspekata algebarske teorije polugrupa, te kombinatornih, algebarskih i model-teoretskih svojstava homogenih diskretnih struktura koje karakteriše visok stepen simetrije.

Trajanje projekta:

2011-2015

***Institucije učesnici / partneri**:*

Prirodno-matematički fakultet u Novom Sadu, Fakultet tehničkih nauka u Novom Sadu

Učesnici –istraživači sa FTN

Doroslovački Ksenija, Stojaković Mila, Nedović Maja, Ilić Vladimir

Oprema nabavljena iz projektnih sredstava

Project of Fundamental Research – Title:

NUMERICAL LINEAR ALGEBRA AND DISCRETE STRUCTURES

Project code / Acronym:

OI 174019

Web site:

Grantholder

Professor Ljiljana Cvetković, PhD - Faculty of Sciences in Novi Sad

Coordinator FTS:

Professor Mila Stojaković, PhD

ScientificResearch Fields /Type of research(Fundamental / Applied/Development)

Fundamental research

Summary:

Numerical linear algebra is a modern branch of mathematics which are extensively developed due to the need of adapting and developing numerical algorithms for implementation in the modern information technology. The algorithm is efficient if it takes into account the specific structure of the observed problems. Therefore, the first step in the successful application of numerical algorithms is a detailed analysis of benefits caused by the specific structure of the observed problems.

As for the linear problems, the main subject of this project is to examine the properties of the matrix that are based on its special structure's to discrete structures, the focus is on studying positional games on graphs, studies of various aspects of the algebraic theory of semi groups and combinatorial, algebraic and model-theoretic properties of discrete homogeneous structure characterized by a high degree of symmetry.

Duration:

2011-2015

***Partners**:*

Faculty of Sciences and Faculty of Technical Sciences in Novi Sad

Researchers *from the FTS:*

Doroslovački Ksenija, Stojaković Mila, Nedović Maja, Ilić Vladimir

Equipment purchased from project funds:

Projekat osnovnih istraživanja – naziv:
TRANSFORMACIJA SOCIJALNOG IDENTITETA SRBIJE U USLOVIMA KRIZE I NJEN UTICAJ NA EVROPSKE INTEGRACIJE
Oznaka projekta / akronim:
OI 179052
Rukovodilac projekta:
Prof. dr Alpar Lošonc, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Alpar Lošonc, Fakultet tehničkih nauka u Novom Sadu
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Osnovna istraživanja
Opis projekta:
U prisustvu dugoročnih strukturalnih problema održivi rast i razvoj kao poželjni pravac socijalne dinamike se veoma teško može ostvariti. Prema tome, naše istraživanje ima za cilj da se usmeri u pravcu identifikacije kompleksnih i dugoročnih i kratkoročnih problema Srbije i uzimajući njih u obzir artikuliše spoj između spoljnih i unutrašnjih faktora krize. Ovakav pristup indukuje i pažljivu artikulaciju kratkoročnih i dugoročnih faktora. Istraživanje treba da uvažava činjenicu da je tranzicija u Srbiji bila određena diskontinuitetima, prekidima u kontinuitetu sprovođenja tranzicijskih mera, te da je ona bila više puta odložena što je stvaralo ireverzibilne posledice u odnosu na samorazumevanje i socijalni identitet. Smatramo da je u cilju analize neophodno prvo tematizovati model kapitalizma koji je nastao u Srbiji u okvirima tranzicije. Polazimo od toga da uprkos tome što su postsocijalističke zemlje prošle kroz konvergentne tranzicione procese rezultati su veoma divergentni i zahtevaju analizu. Prema tome, ne postoji ni jedan sveobuhvatni model koji karakteriše post-socijalističke zemlje, te valja analizirati kontingentne karakteristike svake post-socijalističke zemlje, dakle i Srbije. Ovim se naglašava i produktivnost komparativnog pristupa koji bi inače bio neproduktivan u slučaju pretpostavke egzistencije sveobuhvatnog modela. Ovakva komparativna metodologija koja uzima u obzir diverzitet i razvija svoje poglede na osnovu upoređivanja može se pozivati na učinke koji obeležava nastup pravca u društvenim naukama a koji se naziva Varijeteti kapitalizma (Variety of Capitalism). No dotični pravac analizira različite modele kapitalizma, ali samo s obzirom na razvijene zemlje Zapada, bez konzistentnog upućivanja na zemlje koje se ne mogu svrstati u istu grupu. Mi nameravamo da analizu koja se zasniva na logici i programu istraživanja varijeteta kapitalizma proširimo i da uzimajući u obzir unutrašnje crte socio-ekonomskog i socio-kulturnog sistema kapitalizma u Srbiji odredimo posebnost ove varijante kapitalizma, posebno uzimajući u obzir spoj dugoročnih i kratkoročnih tendencija. Istraživanje na ovom projektu će se naročito usredsrediti na promenu režima blagostanja u toku dugog i kratkog roka u Srbiji, u kontekstu artikulacije dugoročnih, strukturalnih problema i deficita koji su izašli na površinu tokom svetske krize.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Fakultet tehničkih nauka i Filozofski fakultet Univerziteta u Novom Sadu
Učesnici –istraživači sa FTN
Alpar Lošonc, Biljana Ratković Njegovan, Slavica Mitrović, Stevan Milisavljević, Radoš Radivojević, Leposava Grubić Nešić, Andrea Ivanišević, Sonja Pejić
Oprema nabavljena iz projektnih sredstava /
-

Project of Fundamental Research – Title:
TRANSFORMATION OF SOCIAL IDENTITY OF SERBIA UNDER CRISIS CONDITIONS AND ITS INFLUENCE ON EUROPEAN INTEGRATIONS
Project code / Acronym:
OI 179052
Grantholder
Professor Alpar Lošonc, PhD – Faculty of Technical Sciences in Novi Sad
Coordinator FTS:
Professor Alpar Lošonc, PhD – Faculty of Technical Sciences in Novi Sad
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Fundamental research
Summary:
Moreover, having identified the capitalist model operating in Serbia, the next step of the research would be to analyze the welfare regimes within the suggested model of capitalism. Since the welfare regimes are related to both formal and informal institutions, which represent the protection against social risks, risks in the labor market and those regarding the life cycles by organizing the employment, participation in the labor market and distribution of the resources, it is expected that formal and informal aspects of welfare regime, which determine the elements of social identity of Serbia, will be identified. Knowing that the welfare regime is sufficient and relevant synthetic indicator, it is assumed that the recognition of the same regime will offer a perspective for further analyses. Namely, further concrete results are expected to be obtained from deductive actions operationalized on the basis of the presented model of capitalism and welfare regime which both simultaneously articulate socio-economic and socio-cultural aspects. Therefore, one of the significant indicators of social identity is a professional identity which, during the transformation period, presents the basis for the development of welfare regime and a way towards the European integrations. Particular research task is aimed at determining the existing structure and quality of professional identity, correlation between defined dimensions of professional identity, and possibility to change and develop during the transitional changes, because of the European integrations and welfare regime. The expected results of this research are related to establishing the directions of development according to the determined indicators of professional identity of both employed and unemployed people who differ in demographic characteristics, living conditions and cultural specificities. A special attention will be paid to the educational system and its position in the model of capitalism and welfare regimes. It is expected that the research will identify precisely and comprehensively those dimensions of professional identity patterns and educational system that are crucial for understanding of transformation of social identity of Serbia, regarding the crisis processes and European integrations.
Duration:
2011-2015
***Partners**:*
Faculty of Technical Sciences and Faculty of Philosophy – University of Novi Sad
Researchers from the FTS:
Alpar Lošonc, Biljana Ratković Njegovan, Slavica Mitrović, Stevan Milisavljević, Radoš Radivojević, Leposava Grubić Nešić, Andrea Ivanišević, Sonja Pejić
Equipment purchased from project funds:
-

Projekat osnovnih istraživanja – naziv:
ISPITIVANJE NANOSTRUKTURNIH MATERIJALA KAO POTENCIJALNIH HETEROGENIH KATALIZATORA ZA NEKE RAZVOJNO ODRŽIVE PROCESE
Oznaka projekta / akronim:
OI 172059
Web:
Rukovodilac projekta:
Prof. dr Goran Bošković, Tehnološki fakultet u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Ana Kozmidis Petrović
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Osnovna istraživanja
Opis projekta:
Nanoaspekt katalizatora je od primarnog značaja zbog toga što su njegove najbitnije osobine upravo u funkciji veličine, oblika i pozicije njegovih nanočestica. Zato je dalja uloga katalize u održivom razvoju nezamisliva bez usavršavanja katalizatora primenom nanotehnologije. Sintetisaće se i ispitati nanokatalizatori za sintezu ugljeničnih nanotuba (UNT) metodom depozicije ugljenika iz gasne faze, a strukturne i morfološke osobine dobijenih UNT korelisaće se sa teksturalnim osobinama katalizatora. Nakon prečišćavanja u UNT uneće se željena aktivna faza, tako da će se ova preferencijalno nalazi u njihovoj unutrašnjosti. Aktivnost i selektivnost ovakvih katalizatora isprobaće se u nekim procesima koi su trenutno aktuelni sa aspekta održivog razvojna, kao i u fotokatalitičkoj razgradnji pojedinih polutanata prisutnih u zemljištu i vodotokovima. Sintetisaće se i ispitati višekomponentni katalitički sistem sa CaO kao aktivnom fazom dispergovanom na odgovarajućim tradicionalnim (Al_2O_3, SiO_2, ZnO, itd.), kao i nosačima novije generacije (zeoliti, mezoporozna silika, itd.). Modifikacija nosača izvršiće se tokom i/ili nakon snteze, a u smislu povećanog udela mezoporozne faze, tj. poboljšanja difuzionih karakteristika, kao i mehaničkih osobina katalizatora. Katalizatori će se ispitati u reakciji transeterifikacije masnih kiselina za dobijanje biodizela. Rezultati će se analizirati sa aspekta ekonomike proizvodnje i njenih ekoloških uticaja, a zaključci će pomoći u proceni opravdanosti zamene homogenog heterogenim procesom za proizvodnju biodizela.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Prirodno-matematički fakultet, Tehnološki fakultet, Fakultet tehničkih nauka – Univerzitet u Novom Sadu
Učesnici –istraživači sa FTN
Ana Kazmidis Petrović
Oprema nabavljena iz projektnih sredstava

Project of Fundamental Research – Title:

INVESTIGATION OF NANOSTRUCTURED MATERIALS AS POTENTIAL CATALYSTS FOR SOME SUSTAINABLE PROCESSES

Project code / Acronym:

OI 172059

Web site:

Grantholder

Professor Goran Bošković, PhD, Faculty of Technology in Novi Sad

Coordinator FTS:

Professor Ana Kozmidis Petrović, PhD

Scientific Research Fields / Type of research (Fundamental / Applied / Development)

Fundamental research

Summary:

Nano-aspect of catalysis is of primary concern since the most important catalyst properties are closely related to the size, shape and position of its smallest particles.

Therefore, the future role of catalysis in sustainable development is unthinkable without catalyst development based on nano-technology. Carbon nano-tubes (CNTs) will be produced using chemical vapor deposition method over an appropriate nanocatalyst, which textural characteristics will be correlated to the structural and morphological characteristics of CNTs.

After purification an active metal will be preferably deposited inside of CNTs cavities (confinment effect) instead on their surfaces. Activity and selectivity of developed catalysts will be tested in several sustainable processes, as well as in photo-catalytic decomposition of some pollutants present in soil and ground water. Multi-component catalyst systems based on dispersed CaO as active phase will be developed on traditional (Al2O3, SiO2, ZnO, etc.), and supports of new generation (zeolites, mesoporous silica). Support modification will be conducted during and/or after synthesis, with purpose of its mesoporousity increase in order to improve the catalyst diffusion characteristics.

The catalysts will be tested in transesterification reaction for biodiesel synthesis. The results will be analyzed from the point of view production economics and its environmental impact, and will give an insight on heterogeneous biodiesel production feasibility.

Duration:

2011-2015

Partners:

Faculty of Sciences, Faculty of technology, Faculty of Technical Sciences – University of Novi Sad

Researchers *from the FTS:*

Ana Kozmidis Petrović

Equipment purchased from project funds:

Projekat osnovnih istraživanja – naziv:
MODELIRANJE I NUMERIČKE SIMULACIJE SLOŽENIH VIŠEČESTIČNIH SISTEMA
Oznaka projekta / akronim:
OI 171017
Web:
Rukovodilac projekta:
Dr Aleksandar Belić
Rukovodilac projekta sa FTN:
Prof. dr Ljuba Budinski Petković
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Osnovna istraživanja
Opis projekta:
Eksponencijalni rast računarskih performansi prethodnih decenija je numeričke simulacije promovisao u novu vrstu istraživačog alata i dominantni metod za rešavanje kompleksnih fizičkih problema koje se ne mogu tretirati standardnim eksperimentalnim i teorijskim pristupima. Cilj predloženog projekta je da se korišćenjem postojeće kompetitivne računarske infrastrukture u Laboratoriji za primenu računara u nauci na Institutu za fiziku u Beogradu dođe do ključnih novih saznanja i uvida u ponašanje složenih klasičnih i kvantnih višečestičnih sistema. Ovo će biti realizovano primenom numeričkog modeliranja, a novo dobijeni uvid u ponašanje razmatranh sistema će zatim biti pretočen u bolje algoritme i nove analitičke rezultate. Istraživanja će biti realizovana u okviru sledećih tema: Efikasno izračunavanje funkcionalnih integrala sa primenom na ultra-hladne kvantne gasove; Modeliranje i simulacija granularnih materijala, uključujući i dugodometne triboelektrične interakcije; Ispitivanje jako korelisanih kvantnih sistema sa primenom na sisteme sa topološkim fazama i metal-izolator prelazima; Modeliranje procesiranja informacija u kompleksnim klasičnim i kvantnim sistemima. Planiramo i da nastavimo istraživanja vezana za modeliranje transportnih procesa u nano-strukturnim materijalima i organskim poluprovodnicima. Predložena istraživanja se oslanjaju na prethodni rad našeg tima, a njihov cilj su nova saznanja i značajni i ambiciozni iskoraci u odnosu na ranije rezultate.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Institut za fiziku u Beogradu, Rudarsko-geološki fakultet u Beogradu, Fakultet tehničkih nauka u Novom Sadu, Farmaceutski fakultet u Beogradu
Učesnici –istraživači sa FTN
Prof. dr Ljuba Budinski-Petković, Dr Ivana Lončarević
Oprema nabavljena iz projektnih sredstava

Project of Fundamental Research – Title:

MODELING AND NUMERICAL SIMULATIONS OF COMPLEX SYSTEMS

Project of Fundamental Research – Title:

OI 171017

Web site:

Grantholder

Dr Aleksandar Belić

Coordinator FTS:

Prof. dr Ljuba Budinski Petković

Scientific Research Fields / Type of research (Fundamental / Applied / Development)

Fundamental research

Summary:

The exponential growth of computing power in the last decades has promoted scientific computing into a novel research tool and the method of choice to attack complex physical problems not easily amenable to standard experimental or theoretical investigations.

The purpose of the proposed project is to harness state of the art computer facilities of the Scientific Computing Laboratory at the Institute of Physics Belgrade to gain key insight into the behaviour of complex classical and quantum many-body systems. This will be achieved by numerical modelling, and the newfound intuition will be converted into better algorithms and new analytical results.

Research will be organized into the following topics:

Efficient calculation of path integrals with applications to ultra-cold quantum gases
Modelling and simulations of granular materials including long-range turboelectric forces
Study of strongly correlated quantum systems with applications to systems with topological phases and to metal-insulator transition
Modelling of information processing in complex classical and quantum systems.
We also plan to pursue a promising avenue of research related to the modelling of transport
Processes in nano-structured materials and in organic semiconductors.

Duration:

2011-2015

***Partners**:*

Institute for Physics Belgrade, Faculty of Mining And Geology Belgrade, Faculty of Technical Sciences in Novi Sad, Faculty of Pharmacy Belgrade

Researchers *from the FTS:*

Ljuba Budinski Petković, Ivana Lončarević

Equipment purchased from project funds:

Projekat osnovnih istraživanja – naziv:
METODE FUNKCIONALNE I HARMONIJSKE ANALIZE I PDJ SA SINGULARITETIMA
Oznaka projekta / akronim:
OI 174024
Web:
Rukovodilac projekta:
Prof. dr Stevan Pilipović, Prirodno-matematički fakultet u Novom Sadu
Rukovodilac projekta sa FTN:
Vanredni profesor, dr Marko Kostić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Osnovna istraživanja
Opis projekta:
Oblast istraživanja učesnika projekta sa FTN-a predstavljaju teorija apstrakthih integro-diferencijalnih jednačina i teorija pseudodiferencijalnih operatora.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Elektrotehnički fakultet u Beogradu, Matematički Institut SANU, Pedagoški fakultet u Somboru, Prirodno-matematički fakultet u Novom Sadu, Prirodno-matematički fakultet u Kragujevcu, Fakultet organizacionih nauka u Beogradu, Fakultet tehničkih nauka u Novom Sadu, Šumarski fakultet u Beogradu
Učesnici –istraživači sa FTN
Marko Kostić, Filip Tomic, Đorđe Vučković
Oprema nabavljena iz projektnih sredstava

Project of Fundamental Research – Title:
METHODS AND FUNCTIONAL HARMONIC ANALYSIS AND PDJ WITH A SINGULARITIES
Project code / Acronym:
OI 174024
Web site:
Grantholder
Professor Stevan Pilipović, PhD – Faculty of Sciences in Novi Sad
Coordinator FTS:
Associated professor Mirko Kostić, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Fundamental research
Summary:
Research Area of the project represents a theory of abstract integro-differential equations and the theory of pseudo-differential operators.
Duration:
2011-2015
***Partners**:*
Electro technical Faculty in Belgrade, Mathematical Institute of the Serbian Academy of Sciences and Arts, Pedagogical Faculty in Sombor, Faculty of Sciences in Novi Sad, Faculty of Sciences in Kragujevac, Faculty of Organizational Sciences, Faculty of Technical Sciences Novi Sad, Faculty of Forestry in Belgrade
Researchers *from the FTS:*
Mirko Kostić, Filip Tomić, Đorđe Vučković
Equipment purchased from project funds:

Projekat osnovnih istraživanja – naziv:
NOVI PRILOZI TEHNIKAMA KRIPTOLOGIJE, PROCESIRANJA SLIKA I ALGEBARSKE TOPOLOGIJE ZA INFORMACIONU BEZBEDNOST
Oznaka projekta / akronim:
OI 174008
Web:
http://www.mi.sanu.ac.rs/projects/174008s.htm
Rukovodilac projekta:
Dr Miodrag Mihaljević, Matematički institut SANU
Rukovodilac projekta sa FTN:
Prof. dr Nataša Sladoje Matić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Osnovna istraživanja
Opis projekta:
Osnovni ciljevi projekta obuhvataju istraživačke aktivnosti prema usavršavanju postojećih i novim tehnikama za realizaciju elemenata mehanizama za informacionu bezbednost kojima se ostvaruje zaštita tajnosti podataka i autentifikacija uključujući sledeće osnovne pravce: (I) evaluacija sigurnosti određenih kriptografskih tehnika sa simetričnim tajnim ključevima; (II) nove tehnike za ostvarivanje visoke sigurnosti i umerene/niske implementacione složenosti šifrovanja podataka i autentifikacionih protokola; (III)upravljanje kriptografskim ključevima; (IV) biometrijske tehnike za autentifikaciju korisnika; (V) primena rezultata ostvarenih na prethodno navedenim pravcima u određenim prilagođenim sistemima za ostvarivanje informacione bezbednosti uključujući sisteme sa medicinskim/zdravstvenim podacima i "pametnim elektroenergetskim mrežama" (smart grid). Ovim projektom planirane aktivnosti, zaostvarivanje ciljeva istraživanja (I)-(V), nalaze se u: - domenima kriptologije, - obrade digitalnih slika i opštih matematičkih metoda, - a posebno algebarske topologije, od interesa za prethodna dva domena.
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Matematički institut SANU, Matematički fakultet u Beogradu, Metropoliten Univerzitet, Univerzitet Singidunum u Beogradu, Fakultet za obrazovanje diplomiranih pravnika i diplomiranih ekonomista za spoljnu trgovinu Univerziteta privredna akademija u Novom Sadu, Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Nataša Sladoje, Tibor Lukić, Vladimir Ćurić
Oprema nabavljena iz projektnih sredstava

Project of Fundamental Research – Title:
ADVANCED TECHNIQUES OF CRYPTOLOGY, IMAGE PROCESSING AND COMPUTATIONAL TOPOLOGY FOR INFORMATION SECURITY
Project code / Acronym:
OI 174008
Web site:
http://www.mi.sanu.ac.rs/projects/174008e.htm
Grantholder
Dr Miodrag Mihaljević , Mathematical Institute of the Serbian Academy of Sciences and Arts
Coordinator FTS:
Prof. dr Nataša Sladoje Matić
ScientificResearch Fields /Type of research(Fundamental / Applied/Development)
Fundamental research
Summary:
The project is dedicated to research activates on advanced techniques for information security regarding data secrecy and authentication control. Accordingly, the main goals of the project are at the following directions: (I) techniques for security evaluation of certain symmetric encryption techniques and authentication protocols; (II) advanced stream ciphers and authentication protocols which provide high security and low implementation complexity; (III) advanced techniques for the key management (including the broadcast encryption ones); (IV) advanced techniques for biometric authentication; (V) application of the results achieved within (I)-(IV) for developing advanced mechanisms of information security in certain ICT systems including ones related to elements of medical ICT and smart grid. The main expected outcomes of the project are within domains of cryptology, image processing and computational topology and include the following: - Design and security evaluation of advanced cryptographic techniques based on joint effects of pseudo-randomness, randomness and dedicated coding; - Improvement of existing and development of new methods for shape characterization at sub-pixel precision and further enhance their applicability and particularly regarding processing of 3D images and the biometric; - Employment of computational topology methods for cryptographic keys management issues involving advanced method of partitioning and covering of topological and discrete structures.
Duration:
2011-2015
***Partners**:*
Mathematical Institute of the Serbian Academy of Sciences and Arts, Metropolitan University Belgrade, Singidunum University Belgrade, The Faculty of Economics and Engineering Management in Novi Sad, Faculty of Technical Sciences
Researchers from the FTS:
Nataša Sladoje, Tibor Lukić, Vladimir Ćurić
Equipment purchased from project funds:

Projekat osnovnih istraživanja – naziv:
NUKLEARNE METODE ISTRAŽIVANJA RETKIH DOGAĐAJA I KOSMIČKOG ZRAČENJA
Oznaka projekta i akronim:
OI 171002
Web:
http://www.df.pmf.uns.ac.rs/knf.php
Rukovodilac projekta:
Dr. Ištvan Bikit, Prirodno-matematički fakultet, Novi Sad
Rukovodilac projekta sa FTN:
Asistent Tomas Nemeš
Naučna oblast istraživanja i vrsta istraživanja (osnovna / primenjena / razvojna)
Osnovna
Opis projekta:
Istraživanje i razumevanje malo verovatnih nuklearnih procesa u okviru ovog projekta, uključujući dvostruki pozitronski raspad, različite rezonantne i nerezonantne pobude i deekscitacije nuklearnih izomernih stanja i različitih procesa indukovanih sekundarnim i tercijarnim kosmičkim zracima i zračenjem iz radioaktivnosti okoline veoma je značajno za istraživanje retkih fundamentalnih procesa, kao što su istraživanje tamne materije, bezneutrinskog dvostrukog beta raspada, istraživanje raspada protona. Takođe, jedna od važnih aktivnosti će biti proučavanje svih događaja koji u potrazi za retkim procesima doprinose fonu. Ovakav pristup od nesumnjivog je značaja i za eksperimentalne postavke u dubokim podzmenim laboratorijama. Projekat bi pretstavljao nastavak dugogodišnjeg rada na razvoju detekcionih sistema i nuklearnih metoda za ispitivanje retkih fenomena, ali i procesa uzrokovanim kosmičkim zračenjem. Dalji razvoj metoda i eksperimentalnih tehnika niskofonske gama spektrometrije rezultiraće snižavanjem detekcionog praga germanijumskih detektorskih sistema. Sniženje granice detekcije i visoko-kvalitetna analiza podataka mogu da dovedu retke radioaktivne raspade do nivoa opservabilnosti. Nove eksperimentalne tehnike poboljšaće senzitivnost ispitivanja radiočistoće materijala koji bi se koristili u niskofonskim eksperimentima. Izmeriće se preseci za procese indukovane kosmičkim mionima u različitim tipovima materijala, uz analizu efekata sekundarno generisanih čestica.
Trajanje projekta:
2011-2015
Institucije učesnici i partneri:
Institut za fiziku u Beogradu, Fizički fakultet u Beogradu, Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Tomas Nemeš
Oprema nabavljena iz projektnih sredstava

Project of Fundamental Research – Title:
NUCLEAR METHODS IN RESEARCH OF RARE PROCESSES AND COSMIC RAYS
Project code / Acronym:
OI 171002
Web site:
http://www.df.pmf.uns.ac.rs/knf.php
Grantholder
Prof. dr Ištvan Bikit, Faculty of Sciences, Novi Sad
Coordinator FTS:
Ass Tomas Nemeš
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Fundamental
Summary:
The aim of this project is to understand low probability nuclear processes like double beta decay, resonant and non-resonant excitations and de excitations of isomeric states and different processes induced by secondary/ tertiary cosmic rays and by environmental radioactivity. Results of this research could shad light on better understanding of origin of dark matter, neutrinoless double-beta decay and existence of mean life of a proton. Rare events which make contribution to the background will be investigated. Every aspect of research will make contribution to the knowledge important to the low level gamma spectrometry. This project will continue on developing detection systems and nuclear methods for distinguishing rare phenomena and processes caused by interaction of cosmic rays. Lowering the detection limits of detector systems will be necessary for research of rare processes but also for more quality measurements of low-level environmental samples and radiation purity of different materials.
Duration:
2011-2015
***Partners**:*
Institute of Physics, Belgrade; Faculty of Physics, Belgrade; Faculty of Technical Sciences, Novi Sad
Researchers from the FTS:
Tomas Nemeš
Equipment purchased from project funds:

Projekat osnovnih istraživanja – naziv:
REPREZENTACIJE LOGIČKIH STRUKTURA I FORMALNIH JEZIKA I NJIHOVE PRIMENE U RAČUNARSTVU
Oznaka projekta / akronim:
ON 174026
Web:
http://imft.ftn.uns.ac.rs/math/cms/Projects/PROJECT174026
Rukovodilac projekta:
Prof. dr Silvia Gilezan
Rukovodilac projekta sa FTN:
Prof. dr Silvia Gilezan
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Osnovna istraživanja
Opis projekta:
Matematička logika, jedna od osnovnih matematičkih disciplina, obuhvata matematička istraživanja logičkih sistema i primene formalne logike na ostale oblasti matematike. Pored svoje fundamentalne uloge u razvoju matematike, u poslednjih nekoliko decenija matematička logika postaje teorijska osnova računarstva i veštačke inteligencije, a takođe pruža i teorijske osnove za mnoge njihove oblasti. Istraživanja u ovom projektu su usmerena ka fundamentalnim istraživanjima u svim osnovnim oblastima logike: teoriji dokaza, teoriji modela, teoriji skupova kao i ka relevantnim primenama logike u računarstvu. Osnovni istraživački pravci projekta su: (a) Reprezentacija logičkih struktura sa primenama (b) Spektralne reprezentacije diskretnih funkcija i njihova primena (c) Logički i formalni sistemi za sekvencijalno i distribuirano računarstvo. Osnovni pravci će biti istraživani u sledećim temama (a) Koherencijski rezultati za kategorije interesantne za teoriju dokaza, srodni rezultati interesantni za algebru, geometriju i topologiju. Teorija dokaza i semantika dokaza u klasičnoj logici. Model-teoretska i dokaz-teoretska analiza sistema za različite fragmente intuicionističke, klasične, intermedijalnih, substrukturalnih i verovatnosnih logika. Procedure za aproksimativno rezonovanje i sistemi za formalno rezonovanje sa primenama kod sistema za podršku donošenja odluka. Reprezentacija i klasifikacija različitih algebarskih beskonačnih i konačnih struktura. (b) Primene različitih algebarskih struktura u predstavljanju diskretnih signala sa primenama u modeliranju i opisivanju digitalnih sistema. Spektralne reprezentacije digitalnih sistema i njihova složenost. (c) Računarske interpretacije logičkih sistema za sekvencijalno računarstvo. Formalni modeli za distribuiranih računarskih sistema za web aplikacije i servise.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Građevinski fakultet u Beogradu, Građevinsko-arhitektonski fakultet u Nišu, Državni univerzitet u Novom Pazaru, Ekonomski fakultet u Beogradu, Matematički institut SANU, Matematički fakultet u Beogradu, Mašinski fakultet u Beogradu, Mašinski fakultet u Nišu, Prirodno-matematički fakultet u Kragujevcu, Prirodno-matematički fakultet u Novom Sadu, Saobraćajni fakultet u Beogradu, Fakultet za obrazovanje diplomiranih pravnika ekonomista za spoljnu trgovinu Univerziteta Privredna akademija u Novom Sadu, Fakultet zaštite na radu u Nišu, Fakultet tehničkih nauka u Novom Sadu, Filozofski fakultet u Beogradu, Fakultet organizacionih nauka u Beogradu.
Učesnici –istraživači sa FTN
Silvia Gilezan, Jovanka Pantović, Jelena Ivetić, Svetlana Jakšić, Aleksandar Nikolić, Rade Doroslovački, Aleksandar Kupusinac, Andrijana Stamenković, Jelena Čolić – Oravec.
Oprema nabavljena iz projektnih sredstava
Postupak nabavke kapitalne opreme je u toku.

Project of Fundamental Research – Title:
RESENTATION OF LOGICAL STRUCTURES AND FORMAL LANGUAGES AND THEIR APPLICATION IN COMPUTING
Project code / Acronym:
ON 174026
Web site:
http://imft.ftn.uns.ac.rs/math/cms/Projects/PROJECT174026
Grantholder
Professor Silvia Gilezan, PhD – Faculty of Technical Sciences
Coordinator FTS:
Professor Silvia Gilezan, PhD – Faculty of Technical Sciences
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Fundamental research
Summary:
Mathematical logic comprises both the mathematical study of logical systems and the applications of formal logic to other areas of mathematics. Apart from its fundamental role in the development of mathematics, in the last few decades mathematical logic has become the foundation of computer science and artificial intelligence. The research in this project will be directed towards fundamental research and related relevant applications in computer science. Basic research directions: (a) Representation of logical structures (b) Spectral representations of discrete functions (c) Logical and formal systems for sequential and distributed computing. Research topics: (a) Coherence results for categories in proof theory, related results for algebra, geometry and topology; model and proof-theoretic analysis of logical systems; systems for approximate and formal reasoning; representation and classification of algebraic structures (b) Exploiting of algebraic structures in the representation of discrete signals with applications in the modeling and design of digital system; spectral representations of digital systems and their complexity (c) Computational interpretations of logical systems; formal models of distributed systems. The comprehensive research team consists of over 50 researchers from 17 research institutions, including the only mathematical research institute in Serbia and all five public state universities in Belgrade, Novi Sad, Niš, Kragujevac and Novi Pazar. The team has recognized expertise and well-established international collaboration as well as a significant number of early stage researchers. The researchers take part in European projects, which will ensure that the project results will follow the state-of-the-art of international research.
Duration:
2011-2015
***Partners**:*
Faculty of Civil Engineering in Belgrade, Faculty of Civil Engineering and Architecture in Niš, State University of Novi Pazar, Faculty of Economics - University of Belgrade, Mathematical Institute of the Serbian Academy of Sciences and Arts, Faculty of Mathematics in Belgrade, Faculty of Mechanical Engineering Belgrade, Faculty of Mechanical Engineering Niš, Faculty of Sciences in Kragujevac, Faculty of Sciences in Novi Sad, Faculty of Transport and Traffic Engineering, The Faculty of Economics and Engineering Management in Novi Sad, Faculty of Occupational Safety in Nis, Faculty of Technical Sciences Novi Sad, Faculty of Philosophy – University of Belgrade.
Researchers from the FTS:
Silvia Gilezan, Jovanka Pantović, Jelena Ivetić, Svetlana Jakšić, Aleksandar Nikolić, Rade Doroslovački, Aleksandar Kupusinac, Andrijana Stamenković, Jelena Čolić – Oravec.
Equipment purchased from project funds:
Equipment purchase is ongoing.

Projekat osnovnih istraživanja – naziv:
GEOMETRIJA, OBRAZOVANJE I VIZUELIZACIJA SA PRIMENAMA
Oznaka projekta / akronim:
OI 174012
Web:
http://www.mi.sanu.ac.rs/projects/144032s.htm
Rukovodilac projekta:
Prof. dr Zoran Rakić, Matematički institut u Beogradu
Rukovodilac projekta sa FTN:
Vesna Stojaković
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Osnovna istraživanja
Opis projekta:
Predmet istraživanja projekta sastoji se od nekoliko tema iz oblasti diferencijalne geometrije i njenih primena u vizuelizaciji i obrazovanju kao i iz oblasti matematičke fizike i teorije verovatnoće i statistike.
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Institut za fiziku u Beogradu, Matematički institut SANU, Matematički fakultet u Beogradu, Mašinski fakultet u Nišu, Prirodno-matematički fakultet u Kragujevcu, Prirodno-matematički fakultet u Nišu, Učiteljski fakultet u Beogradu, Fakultet tehničkih nauka u Novom Sadu, Farmaceutski fakultet u Beogradu
Učesnici –istraživači sa FTN
Vesna Stojaković
Oprema nabavljena iz projektnih sredstava
-

Project of Fundamental Research – Title:
GEOMETRY, EDUCATION AND VISUALIZATION WITH APPLICATIONS
Project code / Acronym:
OI 174012
Web site:
Grantholder
Professor Zoran Rakić, Mathematical Institute in Belgrade
Coordinator FTS:
Vesna Stojaković
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Fundamental research
Summary:
The subject of the research includes several topics in the field of differential geometry and its applications in visualization and education as well as in the field of mathematical physics and probability theory and statistics.
Duration:
2011-2015
***Partners**:*
Physical Institute in Belgrade, Mathematical Institute of the Serbian Academy of Sciences and Arts, Faculty of Mechanical Engineering Niš, Faculty of Sciences in Kragujevac, Faculty of Sciences in Niš, Pedagogical Faculty in Belgrade, Faculty of Technical Sciences Novi Sad, Faculty of Pharmacy in Belgrade
Researchers from the FTS:
Vesna Stojaković
Equipment purchased from project funds:
-

Projekat osnovnih istraživanja – naziv:
MATEMATIČKI MODELI NELINEARNOSTI, NEODREĐENOSTI I ODLUČIVANJA
Oznaka projekta / akronim:
OI 174009
Web:
Rukovodilac projekta:
Akademik Prof. dr Endre Pap
Rukovodilac projekta sa FTN:
Prof. dr Nebojša Ralević
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Osnovna istraživanja
Opis projekta:
Projekat predviđa kako teorijska istraživanja funkcija agregacija, tako I dalje primene dobijenih rezultata naširoki krug problema, pošto se operacije agregacija pojavljuju u skoro svim modelima ljudske aktivnosti. U teorijskim istraživanjima će se specijalna pažnja obratiti na reprezentacije širokih klasa važnih podklasa operacija agregacija, za koje te reprezentacije nisu još do sada poznate, a koje se pojavljuju pre svega u nekim problemima odlučivanja, fazisistemima i nelinearnim parcijalnim diferencijalnim jednačinama. Posebno će se izučavati neaditivne mere i odgovarajući integrali, kao što su Choquetovi Sugenov. Dalji istraživački rad odnosiće se na upštenje klasičnih integralnih nejednakosti za univerzalni integral pre svega uopštenja nejednakosti Jensena, Čebiševa, Holdera, Minkovskog I Stolarskog. Jedan od problema je određivanje uslova pod kojim pomenute nejednakosti postaju jednakosti.
Trajanje projekta:
2011-2015
***Institucije učesnici / partneri**:*
Matametički fakultet u Beogradu, Prirodno-matematički fakultet u Novom Sadu, Tehnološki fakultet u Novom Sadu, Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Biljana Mihailović, Nebojša Ralević,Tatjana Grbić
Oprema nabavljena iz projektnih sredstava

Project of Fundamental Research – Title:
MATHEMATICAL MODELLING OF NONLINEARITY, UNCERTAINTY AND DECISION
Project code / Acronym:
OI 174009
Web site:
Grantholder
Academician Professor Endre Pap, PhD - Faculty of Sciences in Novi Sad
Coordinator FTS:
Professor Nebojša Ralević, PhD
ScientificResearch Fields /Type of research(Fundamental / Applied/Development)
Fundamental research
Summary:
The project provides both theoretical research of aggregation functions, and further application of the obtained results on a wide range of problems, as the aggregation appears in almost all models of human activity. In theoretical investigations , special attention will be paid to the representation of broad classes of important subclasses of aggregation functions, for which these representations are not yet known so far, which appear primarily in some decision-making problems, fuyyz systems and nonlinear partial differential equations. It will be particularly studded the no additive measures and the corresponding integrals, such as Choquet and Sugeno. Further investigation would concern generalizations the classical integral inequalities for universal integral such as Jensen's, Chebyshev's, Hölder's, Minkowski's and Stolarsky's inequality.
Duration:
2011-2015
***Partners**:*
Matematički fakultet u Beogradu, Prirodno-matematički fakultet u Novom Sadu, Tehnološki fakultet u Novom Sadu, Fakultet tehničkih nauka u Novom Sadu
Researchers from the FTS:
Biljana Mihailović, Nebojša Ralević, Tatjana Grbić
Equipment purchasedfrom projectfunds:

Projekat osnovnih istraživanja – naziv:
NUMERIČKE METODE, SIMULACIJA I PRIMENE
Oznaka projekta / akronim:
OI 174030
Web:
Rukovodilac projekta:
Prof. dr Nataša Krejić, Prirodno-matematički fakultet u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Zorica Uzelac
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Matematika / Osnovna istraživanja
Opis projekta:
Projekat "Numeričke metode, simulacije i primene" ima dva glavna istraživačka pravca: A) numeričke metode za optimizaciju neprekidnih problema i B) numeričke metode za singularno perturbovane konturne probleme. Oba istraživačka pravca uključuju teorijska pitanja kao što su uslovi za konvergenciju i red konvergencije, zatim pitanje računarske efikasnosti i implementacije, i konačno, primenu na relevantne nelinearne matematičke modele. A) Istraživanja u okviru numeričkih metoda optimizacije će biti koncentrisana na probleme sa ograničenjima koji su velikih dimenzija i u kojima se javlja problem nedostatka glatkosti, zatim na probleme u kojima je prisutan šum ili slučajne promenljive i na probleme koji se javljaju u algoritamskom trgovanju. B) Drugi istraživački pravac u okviru projekta je razvoj i analiza metoda za rešavanje singularno perturbovanih problema. Ovi problemi pripadaju klasi konturnih problema koji zavise od parametra i čija rešenja imaju slojeve, što onemogućava primenu standardnih numeričkih procedura u rešavanju. SP problemi se pojavljuju u matematičkim modelima dinamike fluida, aerodinamike, prenosa toplote, modela poluprovodnika, hemijske kinetike i finansija. Zbog njihove kompleksnosti često se koriste i kao test modeli za nove matematičke algoritme. Tokom istraživanja mi ćemo se fokusirati na jednodimenzione i dvodimenzione SP probleme, kako nelinearne tako i linearne, sa jednim ili više perturbacionih parametara. Osnovni cilj će biti primena robusnih metoda koji daju stabilno rešenje i u slojevima.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Prirodno-matematički fakultet u Novom Sadu, Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Zorica Uzelac, Ljiljana Teofanov, Sandra Buhmiler
Oprema nabavljena iz projektnih sredstava

Project of Fundamental Research – Title:
NUMERICAL METHODS, SIMULATIONS AND APPLICATIONS
Project code / Acronym:
OI 174030
Web site:
Grantholder
Professor Nataša Krejić, PhD - Faculty of Sciences in Novi Sad
Coordinator FTS:
Professor Zorica Uzelac, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Mathematical /Fundamental research
Summary:
The project "Numerical methods, simulations and applications" has two main research topics: A) Numerical methods for continuous optimization and B) Numerical methods for singularly perturbed boundary value problems. Both research directions include theoretical questions of mathematical interest like convergence conditions and rate of convergence, then computational efficiency and implementation challenges and finally applications to relevant nonlinear mathematical models. A) Research concerning numerical methods for continuous optimization will be concentrated on large scale nonlinear problems with constrains and no smoothness, optimization problems with noise or uncertainty and problems coming from algorithmic trading. B) The second research direction within our project is devoted to development and analysis of numerical methods for solving singularly perturbed problems. These problems belong to a class of parameter-dependent boundary value problems whose solutions exhibit layer phenomena. SP problems appear as mathematical models in fluid mechanics, aerodynamics, heat transfer, semiconductor device modelling, chemical kinetics and finance. They also often serve as test models for new mathematical algorithms. During our research we shall focus on one-dimensional as well as two-dimensional SP problems, both linear and nonlinear, with one or more perturbation parameters. The main goal is to apply a robust method that will resolve layers and lead to a stable numerical solution.
Duration:
2011-2015
***Partners**:*
Faculty of Sciences in Novi Sad, Faculty of Technical Sciences Novi Sad
Researchers from the FTS:
Zorica Uzelac, Ljiljana Teofanov, Sandra Buhmiler
Equipment purchased from project funds:

Projekat osnovnih istraživanja – naziv:
UTICAJ ELEMENTARNIH EKSCITACIJA I KONFORMACIJA NA FIZIČKA SVOJSTVA NOVIH METERIJALA BAZIRANIH NA JAKO KORELISANIM NISKODIMENZIONALNIM SISTEMIMA
Oznaka projekta / akronim:
OI 171009
Web:
Rukovodilac projekta:
Prof. dr Darko Kapor, Prirodnomatematički fakultet u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Miljko Satarić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvoja)
Osnovna istraživanja
Opis projekta:
Sadržaj projekta obuhvata izučavanje svojstava nekoliko materijala koji formiraju dvodimenzionalne i jednodimenzionalne structure. Deo tima sa FTNa se bavi takvim strukturama u biofizici.To se, pre svega, odnosi na nanostrukturne mikrotubule i motor proteine,koji su odgovorni za najvažnije procese u živim ćelijama.
Trajanje projekta:
2011-2015
Institucije učesnici / partneri:
Institut za nuklearne nauke Vinča, Prirodnomatematički fakultet u Novom Sadu, Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Miljko Satarić, Bogdan Satarić
Oprema nabavljena iz projektnih sredstava
Nije bilo nabavke opreme u proteklom periodu.

Project of Fundamental Research – Title:
THE IMPACT OF ELEMENTARY EXCITATIONS AND CONFORMATIONS ON TO THE PHYSICAL PROPERTIES OF NEW MATERIALS BASED ON STRONGLY CORRELATED LOW DIMENSIONAL SYSTEMS
Project code / acronym:
OI 171009
Web site:
Grandholder
Professor Darko Kapor, PhD, Faculty of Sciences Novi Sad
Coordinator FTS:
Professor Miljko Satarić, phD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Fundamental research
Summary:
The subject of this Project contains the study of properties of some materials which can form two dimensional and one dimensional structures. The participants from FTN deal with such structures in the field of biophysics. This primary concerns of nanostructured microtubules and motor proteins which are responsible for the most important processes in living cells.
Duration:
2011-2015
Partners:
Vinča Institut of Nuclear Sciences, Faculty of Sciences in Novi Sad, Faculty of Technical Sciences in Novi Sad
Researchers *from the FTS:*
Miljko Satarić, Bogdan Satarić
Equipment purchased from project funds:
There is no equipment purchased so far.

Pokrajinski sekretarijat za nauku i tehnološki razvoj

Projekti od značaja za nauku i tehnološki razvoj AP Vojvodine

Provincial Secretariat for Sciences and Technological Development

Projects of importance for sciences and technological development of AP Vojvodina

Projekat od značaja za nauku i tehnološki razvoj AP Vojvodine – naziv:
KONTINUALNO UNAPREĐENJE KVALITETA PROIZVODA I PROCESA CELOKUPNOG ŽIVOTNOG CIKLUSA
Oznaka projekta / akronim:
Web:
Rukovodilac projekta:
Prof. dr Janko Hodolič, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Janko Hodolič
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Technical and Technological Sciences
Opis projekta:
Kvalitet predstavlja kompleksan pojam i stalan je čovekov pratilac u svakodnevnom životu i radu bilo da je u ulozi korisnika, bilo proizvođača. Kvalitet se obezbeđuje pod uslovom da su sve mere i postupci u cilju postizanja zahteva kvaliteta u skladu sa postavljenim planom kvaliteta koji obuhvata: planiranje kvaliteta, upravljanje kvalitetom i ispitivanje kvaliteta. Postizanje optimalnog kvaliteta koji predstavlja zadovoljavajući nivo kvaliteta uz minimalne troškove iziskuje niz akcija koje se moraju permanentno (kontinuirano) preduzimati. Veoma važno je raspolagati pravim informacijama o procesu kako bi se preduzele korektivne akcije u trenutku kada daju najveće efekte. U cilju kontinuiranog zadovoljenja zahteva korisnika, kako sa aspekta proizvoda tako i sa aspekta procesa, neophodna je primena odgovarajućih tehnika unapređenja kvaliteta. Pod ovim se podrazumeva niz sukcesivnih i logičkih koraka kao što su: analiza, sistematizacija, definisanje podloga, razvoj modela, razvoj ili izbor tehnika za konkretan model, implementacija tehnika u odgovarajućem okruženju, njihova verifikacija i na posletku identifikacija grešaka i definisanje mogućnosti i efekata unapređenja. U okviru ovog projekta će se, polazeći od značaja preventivnog pristupa - koji podrazumeva usaglašavanje razvojnih strategija preduzeća sa principima trajno održivog razvojna (manja potrošnja primarnih sirovina i energije, minimiziranja škarta, reciklaža i ponovno korišćenje otpada, korišćenje sekundarnih sirovina u proizvodnji, optimizacija transporta, uslove rada itd.) razviti koncept koji treba da omogući kontinualno unapređenje kvaliteta proizvoda i procesa tokom njihovog celokupnog životnog ciklusa. Na taj način će se doći do sofisticiranog modela koji će omogućiti održivo upravljanje kvalitetom proizvoda i procesa u smislu predupređenja mogućnosti da unapređenje kvaliteta u jednoj fazi životnog ciklusa implicira problem u nekoj od ostalih faza.
Trajanje projekta:
4 godine
Institucije učesnici / partneri:
Fakultet tehničkih nauka u Novom Sadu, Univerzitet u Ljubljani, Fakultet prirodnih nauka i inženjerstva, Departman za materijale i metalurgiju - Slovenija, Centralnoevropski univerzitet u Skalici - Slovačka
Učesnici –istraživači sa FTN
Janko Hodolič, Igor Budak, Đorđe Vukelić, Miodrag Hadžistević, Dragiša Vilotić, Miroslav Plančak
Oprema nabavljena iz projektnih sredstava
/

Projects of importance for sciences and technological development of AP Vojvodina – Title:
CONTINUOUS QUALITY IMPROVEMENT OF PRODUCTS AND PROCESSES THROUGH THE LIFE CYCLE
Project code / Acronym:
Web site:
Grantholder
Professor Janko Hodolič, PhD - Faculty of Technical Sciences in Novi Sad
Coordinator FTS:
Professor Janko Hodolič, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technical and Technological Sciences
Summary:
Quality is a complex term and is a regular man's companion in everyday life and work either in the user's role, or the manufacturer. The quality is ensured under the condition that the measures and procedures in aim of achieving required standards in accordance with the established quality plan that includes: quality planning, quality management and quality testing. Optimum quality that indicates a satisfactory level of quality at minimum cost requires a series of actions that have to be permanently (continuous) take. It is very important to dispose the right information about the process in order to undertake corrective action when provide the greatest impact. In order to continuously meet customer requirements, both in terms of product and in terms of process, it is necessary to use appropriate techniques of improving quality. This implies a series of successive and logical steps such as analysis, systematization, defining background, the development model, the development or selection of equipment for a specific model, implementation techniques in an appropriate environment, their verification and eventually identify faults and to define the possibilities and effects of improving . The project will take, considering the importance of preventive approach - which involves alignment of developmental corporate strategy with the principles of permanently sustainable development (lower consumption of primary raw materials and energy, minimize scrap, recycling and reuse of waste, use of raw materials in the production, transport optimization, working conditions, etc..) to develop a concept to enable continuous improvement of the quality of products and processes throughout their entire life cycle. This way will lead to sophisticated models that enable sustainable management of product and process quality in terms of ability to prevent the negative quality improvement at any stage of the life cycle implies a problem in some of the other phases.
Duration:
4 years
Partners:
Faculty of Technical Sciences in Novi Sad, University of Ljubljana Faculty of Natural Sciences and engineering, Department of Materials Sciences and Metallurgy, Ljubljana – Slovenia, University of Central Europe in Skalica - Slovakia
Researchers *from the FTS:*
Janko Hodolič, Igor Budak, Đorđe Vukelić, Miodrag Hadžistević, Dragiša Vilotić, Miroslav Plančak
Equipment purchased from project funds:
/

Projekat od značaja za nauku i tehnološki razvoj AP Vojvodine – naziv:

PLANIRANJE ENERGETSKIH SISTEMA GRADOVA VOJVODINE PRIMENOM SAVREMENIH ENERGETSKIH TEHNOLOGIJA

Oznaka projekta / akronim:

PEGVPSET

Web:

nema

Rukovodilac projekta:

Prof. dr Dušan Gvozdenac, Fakultet tehničkih nauka u Novom Sadu

Rukovodilac projekta sa FTN:

Prof. dr Dušan Gvozdenac

Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)

Tehničko – tehnološke nauka / razvojna istraživanja

Opis projekta:

Društvo današnjice je suočeno s velikom nesigurnošću u snabdevanju energijom. Energetska efikasnost je prepoznata kao jedan od ekonomski najdelotvornijih načina za povećanje sigurnosti snabdevanja energijom. Rast broja stanovnika i životnog standarda iziskuje stalni rast potrošnje energije, ali to mora biti praćeno povećanom energetskom efikasnošću i posebno primenom novih energetskih tehnologija i obnovljivih izvora energije. Razvoj gradova Vojvodine je tekao i teče po starim standardima i vrlo malo je učinjeno na unapređenju njihove energetske efikasnosti uopšte i naročito kroz primenu novih energetskih tehnologija.
Činjenica je da se oko 40% ukupne primarne energije troši na potrošnju u zgradama, javnim i privatnim. U Vojvodini zgrade troše u proseku od 150 - 250 kWh/m2 godišnje, što je višestruko više od realno dostižne potrošnje. Najveći gubici nastaju u toku grejne sezone kroz zidove i prozore, u distributivnoj mreži,osvetljenju itd. U toku trajanja projekta je izvršeno snimanje zatečenog stanja komunalnih energetskih sistema, njihov značaj i uloga u obezbeđenju finalnih potreba za energijom sa evidentiranjem poteškoća u funkcionisanju, nivoa energetske efikasnosti i drugim relevantnim podacima za dalju analizu. Projektom se istražuju mogući efekti: rekonstrukcije omotača zgrada u gradovima Vojvodine, primena distribuirane proizvodnje toplotne i električne energije i masovnom primenom potencijala obnovljivih izvora energije. Analiza obuhvata isključivo savremene ali komercijalne tehnologije. Posebna pažnje se posvećuje onim tehnologijama koje imaju perspektivu lokalnog razvojna i proizvodnju opreme u Vojvodini (postrojenja za korišćenje biomase, solarni kolektori itd.).

Trajanje projekta:

2011-2014

Institucije učesnici / partneri:

Fakultet tehničkih nauka, Steinbeis GmbH & Co. KG fur Technologietransfer, Nemačka

Učesnici –istraživači sa FTN

Dušan Gvozdenac, Jovan Petrović, Branka Gvozdenac Urošević, Miroslav Kljajić, Damir Đaković, Aleksandar Anđelković

Oprema nabavljena iz projektnih sredstava

Lexmark štampac T65x

Projects of importance for sciences and technological development of AP Vojvodina – Title:
PLANNNING OF ENERGY SYSTEMS IN CITIES OF VOJVODINA USING MODERN ENERGY TECHNOLOGIES
Project code / Acronym:
PESCVUMET
Web site:
none
Grantholder
Professor Dušan Gvozdenac, PhD – Faculty of Technical Sciences
Coordinator FTS:
Professor Dušan Gvozdenac, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technical and Technological Sciences
Summary:
Society today is faced with greater uncertainty with the energy supply. Energy efficiency is recognized as one of the economically most effective ways to increase the security of energy supply. Growth of population and living standards requires constant growth in energy consumption, but it must be accompanied by increased energy efficiency, and in particular the use of new energy technologies and renewable energy sources. Development of the cities of Vojvodina is under the old standards and very little has been done to improve their energy efficiency in general and particularly with the implementation of new energy technologies. The fact is that about 40% of total primary energy consumption is spent in buildings, commercial and private. In Vojvodina, buildings consume an average of 150-250 kWh/m2 per year, which is much more then the realistic consumption. The greatest losses occur during the heating season, through walls and windows, the distribution network, lighting and etc. During project time it is recorded existing state of utility power systems, their importance and role in providing the final energy requirements by registering difficulties in functioning, level of energy efficiency and other relevant data for further analysis. The project studies the possible effects: depletion of reconstruction of buildings in the cities of Vojvodina, the use of distributed generation of electricity and heat and mass use of the potential renewable energy sources. The analysis includes only commercial but modern technology. Special attention is devoted to those technologies that have the perspective of local development and manufacturing in Vojvodina (biomass plant, solar collectors, etc.).
Duration:
2011-2014
***Partners**:*
Faculty of Technical Sciences in Novi Sad, Steinbeis GmbH & Co. KG fur Technologietransfer, Germany
Researchers *from the FTS:*
Dušan Gvozdenac, Jovan Petrović, Branka Gvozdenac Urošević, Miroslav Kljajić, Damir Đaković, Aleksandar Anđelković
Equipment purchased from project funds:
Lexmark printer T65x

Projekat od značaja za nauku i tehnološki razvoj AP Vojvodine – naziv:
OSCILATORI SA PARAMETARSKOM POBUDOM: PONAŠANJE, FENOMENI I PRIMENA
Oznaka projekta / akronim: **114-451-2094**
Web: -
Rukovodilac projekta:
Prof. dr Ivana Kovačić, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Ivana Kovačić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Prirodno-matematičke nauke
Opis projekta:
Predmet proučavanja su oscilatorni sistemi sa specifičnim tipom nelinearnosti-čistom geometrijskom nelinearnošću polinomijalnog ili nepolinomijalnog (frakcionog) tipa, i sa parametarskom pobudom koja je posledica promenljive mase ili krutosti. Ciljevi istraživanja obuhvataju ispitivanje njihovog ponašanja, fenomena koji se pojavljuju i karakterišu ove sisteme, kao i identifikaciju njihove pogodne praktične primene.
Trajanje projekta:
2011-2014
Institucije učesnici / partneri:
Fakultet tehničkih nauka u Novom Sadu, Department for Mechanical Engineering, Dynamics, University of Glasgow, Scotland, United Kingdom
Učesnici –istraživači sa FTN
dr Ivana Kovačić, Akademik Đorđe Đukić, dr Livija Cvetićanin, dr Miodrag Zuković, dr Zvonko Rakarić
Oprema nabavljena iz projektnih sredstava
-

Projects of importance for sciences and technological development of AP Vojvodina – Title:

PARAMETRICALLY EXCITED OSCILLATORS: BEHAVIOR, PHENOMENA AND APPLICATIONS

Project code / Acronym: **114-451-2094**

Web site: -

Grantholder

Professor Ivana Kovačić, PhD Faculty of Technical Sciences in Novi Sad

Coordinator FTS:

Professor Ivana Kovačić, PhD

Scientific Research Fields / Type of research (Fundamental / Applied / Development)

Natural Sciences and Mathematics

Summary:

The project is concerned with oscillatory systems with a particular type of nonlinearity – pure geometric nonlinearity of a polynomial or non-polynomial (fractional) type, and with parametric excitation that stems from a time-varying mass or stiffness.

The project aims to investigate dynamical behaviour of these systems, phenomena associated with them as well as to define their potentially beneficial practical applications.

Duration:

2011-2014

Partners:

Faculty of Technical Sciences in Novi Sad, Department for Mechanical Engineering, Dynamics, University of Glasgow, Scotland, United Kingdom

Researchers *from the FTS:*

Ivana Kovacic, Djordje Djukic, Livija Cveticanin, Miodrag Zukovic, Zvonko Rakaric

Equipment purchased from project funds:

-

Projekat od značaja za nauku i tehnološki razvoj AP Vojvodine – naziv:
MERNO AKVIZACIONI SISTEMI U KONGITIVNIM NEURONAUKAMA
Oznaka projekta / akronim:
114-451-2190
Web:
http://www.kelm.ftn.uns.ac.rs/index.php?option=com_content&task=view&id=145&Itemid=110
Rukovodilac projekta:
Prof. dr Zoran Mitrović, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Zoran Mitrović
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehničko – tehnološke nauka / razvojna istraživanja
Opis projekta:
Kognitivne neuronauke su nova naučna disciplina, u osnovi spoj dvaju disciplina – kognitivne psihologije (i kognitivnih nauka), sa jedne strane i biologije i neuronauka, sa druge strane. Razvile su se kao rezultat napretka metodologije i mogućnosti neinvazivnog istraživanja ljudskog mozga u laboratorijskim uslovima. Projekat predstavlja interdisciplinarno istraživanje i nastavak prethodne saradnje Fakulteta tehničkih nauka i Filozofskog fakulteta u projektovanju i opremanju Laboratorije za eksperimentalnu psihologiju Novi Sad (LEPNS), kao i nastavak istraživanja Filozofskog fakulteta i Departmana za eksperimentalnu psihologiju Univerziteta u Oksfordu. Ciljevi istraživanja, sa aspekta elektrotehnike i računarstva, obuhvataju razvoj sistema za merenje, akviziciju i obradu evociranih i spontanih elektroencefalografskih potencijala, imajući u vidu svrhu upotrebe u istraživanjima kognitivnih procesa. Posmatrano sa aspekta istraživanja kognitivnih procesa, ciljevi projekta su istraživanje procesa kategorizacije, semantičke organizacije na kognitivnom planu, kao i detaljniji uvid u brzinu prepoznavanja objekata i krosmodalnu komunikaciju.
Trajanje projekta:
2011 - 2014
Institucije učesnici / partneri:
Fakultet tehničkih nauka i Filozofski fakultet u Novom Sadu, College of Dunújváros, Mađarska
Učesnici –istraživači sa FTN
Zoran Mitrović, Vladimir Vujičić, Ivan Župunski, Nebojša Pjevalica, Dragan Pejić, Marjan Urekar, Ljubica Župunski, Mirjana Trobok, Platon Sovilj
Oprema nabavljena iz projektnih sredstava

Projects of importance for sciences and technological development of AP Vojvodina – Title:

MEASUREMENT OND ACQUISITION SYSTEMS FOR CONGNITIVE NEUROSCINCES

Project code / Acronym:

114-451-2190

Web site:

http://www.kelm.ftn.uns.ac.rs/index.php?option=com_content&task=view&id=145&Itemid=110

Grantholder

Professor Zoran Mitrović, PhD – Faculty of Technical Sciences

Coordinator FTS:

Professor Zoran Mitrović, PhD

Scientific Research Fields / Type of research (Fundamental / Applied / Development)

Technical and Technological Sciences

Summary:

Cognitive Neuroscience is relatively new scientific discipline, basically a combination of two disciplines – cognitive psychology (and cognitive science), and biology and neuroscience. It was developed as a result of the progress of the methodology and the possibility of noninvasive studies of the human brain in the laboratory.

The project is interdisciplinary research and the continuation of the previous cooperation of Faculty of Technical Sciences and Faculty of Philosophy in the design of the devices for the Laboratory for Experimental Psychology, Novi Sad (LEPNS), and researches conducted at Faculty of Philosophy and at the Department of Experimental Psychology, University of Oxford.

The objectives of the research, in terms of electrical and computer engineering, including the development of measurement systems, data acquisition and processing of evoked and spontaneous electroencephalographic potentials, keeping in mind the purpose of use in studies of cognitive processes. From the aspect of cognitive research process, the research objectives of the process of categorization, semantic organization of cognitive functions, as well as more detailed look at the speed of object recognition and crossmodal communication.

Duration:

2011 – 2014

***Partners**:*

Faculty of Technical Sciences and Faculty of Philosophy in Novi Sad, College of Dunújváros, Hungary

Researchers *from the FTS:*

Zoran Mitrović, Vladimir Vujičić, Ivan Župunski, Nebojša Pjevalica, Dragan Pejić, Marjan Urekar, Ljubica Župunski, Mirjana Trobok, Platon Sovilj

Equipment purchased from project funds:

Projekat od značaja za nauku i tehnološki razvoj AP Vojvodine – naziv:
RAZVOJ NAPREDNIH TEHNIKA KODOVANJA U MAGNETSKIM SISTEMIMA SA VIŠE STAZA ZA VEOMA VISOKE GUSTINE MEMORISANJA PODATAKA
Oznaka projekta / akronim:
Web:
Rukovodilac projekta:
Docent dr Nikola Đurić
Rukovodilac projekta sa FTN:
Docent dr Nikola Đurić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Tehničko-tehnološke nauke / razvojna
Opis projekta:
U poslednjim decenijama povećanje gustine zapisa i kapaciteta jeste primarni zadatak u razvoju memorijskih uređaja. Danas su dostignute gustine zapisa od 0,5 terabita/in^2, čime su komercijalno dostupni čvrsti diskovi sa memorijskim kapacitetom i preko 1 terabajt. Tehnologija magnetskog memorisanja u kojima se zapisivanje/čitanje podataka vrši paralelno i istovremeno na više staza, upotrebom niza paralelnih magnetskih glava, predstavlja izuzetno aktuelnu tehnologiju memorisanja u čvrstim diskovima. U okviru ove tehnologije, tehnike kodovanja i obrade signala dobijaju primat, pošto su mehanička konstrukcija, kao i upotrebljeni magnetski materijali već uveliko istražene oblasti. Jedan od predmeta istraživanja u okviru ovog projekta su i tehnike detekcije na kanalima sa više staza, u okviru kojih se analizira ekvalizacija kanala, detekcija na više staza i detektori na bazi finog odlučivanja. U domenu tehnika kodovanja analiziraju se zaštitni low-density parity-check (LDPC) kodovi, kao i metode njihovog iterativnog dekodovanja. LDPC kodovi su pokazali sjajne mogućnosti ispravljanja grešaka, ali njihova primena u magnetskim kanalima sa više magnetskih staza, modelovanih partial-response (PR) polinomima, predstavlja još uvek otvorenu oblast za istraživanje. Analiziraju se i kodovi koji unose ograničenja za smanjenje inter-track interference (ITI) na kanalima sa više magnetskih staza, kao i moguće metode kodovanja/dekodovanja prilikom unošenja ograničenja. Poseban naglasak je na iterativnom dekodovanju ovih kodova, kao i primeni metoda na kanalima sa više magnetskih staza. Kao oblast istraživanja, prirodno se nameće i povezivanje zaštitnih kodova i kodova koji unose ograničenja, kao i eventualna konstrukcija novih kodova koji poseduju obe ove osobine. Analiziraju se i metode iterativnog dekodovanja u različitim scenarijima međusobnog povezivanja.
Trajanje projekta:
4 (četiri) godine
Institucije učesnici / partneri:
Fakultet tehničkih nauka u Novom Sadu
Učesnici –istraživači sa FTN
Nikola Đurić, Dragana Bajić, Vojin Šenk, Dejan Vukobratović, Čedomir Stefanović, Bane Vasić, Tatajana Lončar-Turukalo
Oprema nabavljena iz projektnih sredstava

Projects of importance for sciences and technological development of AP Vojvodina – Title:
DEVELOPMENT OF ADVANCED CODING TECHNIQUES FOR HIGH-DENSITY MULTY-TRACK MAGNETIC RECORDING SYSTEMS
Project code / Acronym:
Web site:
Grantholder
dr Nikola Đurić, Assistant Professor
Coordinator FTS:
dr Nikola Đurić, Assistant Professor
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technical and Technological Sciences / development
Summary:
In recent decades, an increase in density of the recording is a primary task in the development of the memory devices. Today they reached densities of 0.5 terabita/in^2 and hard disks with capacity of 1 terabyte are commercially available. The magnetic storage technology in which writing/reading of data is done in parallel and simultaneously on multiple tracks, using series of parallel magnetic heads, is a very modern technology in hard disks. Under this technology, coding techniques and signal processing gain primacy, since mechanical design and used magnetic materials are already explored fields. One of the case studies in this project is detection techniques in channels with multiple tracks, in which channel equalization, detection of multiple tracks and detectors based on a fine decision are analyzed. In the domain of the coding techniques the low-density parity-check (LDPC) codes and their iterative decoding methods are analyzed. LDPC codes have shown great ability to correct errors, but their use in magnetic multi-track channel, modeled with partial-response (PR) polynomials, is still an open area of research. The constrained codes that reduce the inter-track interference (ITI) in magnetic channels with multiple tracks are analyzed, as well as possible methods of encoding/decoding of these codes. Particular emphasis is on the iterative decoding of these codes, as well as the application of the methods in magnetic channels with multiple tracks. As a research area, it is natural to impose linking of the error-correcting codes and constrained codes, as well as possible construction of new codes that have both of these properties. Additionally, the iterative decoding methods in various scenarios of the interconnection are analyzed.
Duration:
4 (four) years
***Partners**:*
Faculty of Technical Sciences, University of Novi Sad
Researchers *from the FTS:*
Nikola Đurić, Dragana Bajić, Vojin Šenk, Dejan Vukobratović, Čedomir Stefanović, Bane Vasić, Tatajana Lončar-Turukalo
Equipment purchased from project funds:

Projekat od značaja za nauku i tehnološki razvoj AP Vojvodine – naziv:
GENETIČKI RESURSI AGROEKOSISTEMA VOJVODINE U FUNKCIJI RAZVOJNA ODRŽIVE POLJOPRIVREDE
Oznaka projekta / akronim:
114-451-2173
Web:
-
Rukovodilac projekta:
Prof. dr Ante Vujić, Prirodno-matematički Fakultet
Rukovodilac projekta sa FTN:
Prof. dr Vesna Crnojević Bengin
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehničko – tehnološke nauka / razvojna istraživanja/ Biotehnologija i poljoprivreda
Opis projekta:
Održiva poljoprivreda podrazumeva proizvodnju zdravstveno bezbedne hrane na ekološkim principima, i oslanja se na studije odnosa organizama i njihove sredine. Osnovna načela održive poljoprivrede sadržana su u dokumentu GAP (Good Agricultural Practices) koje je dala organizacija FAO (Food and Agricultural practices). Zbog toga, upravljanje prirodnim resursima je od primarnog značaja za razvoj održive poljoprivrede. Tranzicija ka održivoj poljoprivredi, kao poljoprivrednoj proizvodnji budućnosti, je proces, čiji je prvi korak upoznavanje prirodnih resursa. Genetički diverzitet predstavlja osnovu svih ekosistema uključujući agroekosisteme. UN su 2010. godine proglasile period od 2011 do 2020. godine dekadom biodiverziteta. Primarni izvor biodiverziteta je genetički diverzitet. Otkrivanje i očuvanje genetičkog diverziteta je jedan od osnovnih ciljeva u okviru ekološkog upravljanja ekosistemima. Agroekosistemi Vojvodine su isprepeleteni sa izvornim šumskim ekosistemima, intenzivnim zasadima i plantažama šumskih vrsta. Biodiverzitet ovih prostora predstavlja osnov za očuvanje biodiverziteta agroekosistema. Predloženim projektom planiran je monitoring genetičkog diverziteta populacija biljaka i životinja u šumskim i agroekosistemima u Vojvodini primenom adekvatnih molekularnih markera. Na osnovu dobijenih podataka formiraće se informaciona baza o genetičkim resursima Vojvodine koja će biti usmerena u pravcu evaluacije i unapređenja upravljanja vojvođanskim ekosistemima. Predmet istraživanja će biti model organizmi kao što su invazivne i odabrane zaštićene biljne vrste i ciljne grupe životinja (insekti, ptice i sisari) na prirodnim šumskim staništima nepromenjenog biodiverziteta i područjima sa intenzivnim upravljanjem (menadžmentom) kao što su agroekosistemi, lovišta, intenzivni zasadi, plantažne šume. Istraživanja će biti realizovana kroz tri nivoa koji će se preplitati kroz 4 faze pri čemu svaka faza predstavlja jednu godinu istraživanja: A. monitoring genetičkog diverziteta populacija odabranih vrsta i grupa vrsta na različitim tipovima staništa sa fokusom na šumska staništa i agroekosisteme u Vojvodini; B. analiza genetičkog diverziteta kroz primenu različitih modela i statističkih programa u cilju razumevanja njihovog uticaja na funkcionisanje ekosistema i usluge koje pruža; C. predlog adekvatnih mera za unapređenje upravljanja ekosistemima u cilju razvojna održive poljoprivrede u Vojvodini.
Trajanje projekta:
4 godine 2011-2014
***Institucije učesnici / partneri**:*
Prirodno-matematički fakultet, Fakultet tehničkih nauka u Novom Sadu, Universdad de Alicante, Instituto Universitario de la biodiversidad CIBIO, Španija, Finski prorodnjački muzej – Univerziteta u Helsinkiju, University of the Aegean, Department of Geography, University Hill, Mytilene
Učesnici –istraživači sa FTN
Vesna Crnojević Bengin
Oprema nabavljena iz projektnih sredstava
Projektom nije predvidjena nabavka opreme

Projects of importance for sciences and technological development of AP Vojvodina – Title:

GENETIC RESOURCES OF AGROSYSTEMS IN VOJVODINA AND SUSTAINABLE DEVELOPMENT

Project code / Acronym:

Web site:

Grantholder

Professor Ante Vujić, PhD, Faculty of Sciences

Coordinator FTS:

Professor Vesna Crnojevic-Bengin, PhD

Scientific Research Fields / Type of research (Fundamental / Applied / Development)

Technical and Technological Sciences

Summary:

The sustainable agriculture, namely the production of safe and healthy food using the ecological principles, relies on studying of the relationship between an organism and its environment. The basic principles of sustainable agriculture are presented in the ''Good Agricultural Practices'' document produced by FAO. The management of natural resources is of a primarily importance for the development of sustainable agriculture and therefore the analysis of natural resources is a first step in this process.

Genetic diversity is the basis of all ecosystems, including the agro ecosystems. Discovery, recognition and preservation of genetic diversity is one of the main goals in ecosystem management. Agroecosystems of Vojvodina are interleaved with authentic forest ecosystems, planted forests and growths. This project focuses on monitoring of the existing genetic diversity of plant and animal population in forest and agro ecosystems of Vojvodina, by applying adequate molecular markers. Based on the complied data, data base of genetic resources of Vojvodina will be created, that will be used to evaluate and improve ecosystem management. The research in this project will focus on model organisms, such as invasive and selected protected plant and animal species (insects, birds, mammals) from two habitats: natural forest environments with unaffected biodiversity and areas exposed to intensive management such as agro ecosystems, hunting grounds, intensive growth forests.

Four phases of research are foreseen in three years:

A. Monitoring of genetic diversity of selected populations and groups on various habitats, with the focus on forest habitats and agro ecosystems in Vojvodina;
B. Analysis of genetic diversity by applying various models and statistical programs, with the final goal of understanding their influence on ecosystem functions and services;
C. Recommendation of adequate measures for development of ecosystem management practices, with the final goal to develop sustainable agriculture in Vojvodina.

Duration:

4 years, 2011-2014

Partners:

Faculty of Sciences, Faculty of Technical Sciences in Novi Sad, Universdad de Alicante, Instituto Universitario de la biodiversidad CIBIO, Spain, Finnish Museum of Natural History, Zoological Museum, Division of Entomology, University of Helsinki, Finland, University of the Aegean, Department of Geography, University Hill, Mytilene, Greece

Researchers *from the FTS:*

Vesna Crnojević Bengin

Equipment purchased from project funds:

Equipment purchase is not foreseen

Projekat od značaja za nauku i tehnološki razvoj AP Vojvodine – naziv:
POZICIONIRANJE NAUČNO-ISTRAŽIVAČKE ZAJEDNICE UNIVERZITETA U NOVOM SADU U OSMOM OKVIRNOM PROGRAMU EVROPSKE UNIJE ZA ISTRAŽIVANJE I RAZVOJ
Oznaka projekta / akronim:
114-451-2729/2012-04
Web:
-
Rukovodilac projekta:
Prof. dr Miroslav Vesković, Univerzitet u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Vladimir Crnojević
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehničko – tehnološke nauka / razvojna istraživanja
Opis projekta:
Ovaj projekat ima za cilj objedinjavanje aktivnih istraživačkih potencijala unutar Univerziteta u Novom Sadu u cilju uspešnijeg nastupa u sledećem okvirnom programu FP8 ili HORIZON'2020. S tim u vezi neophodno je proučiti sve strateške dokumente Evropske komisije vezano za HORIZON'2020 i napraviti predloge oko multidisciplinarnih tema istraživanja na kojima bi istraživači sa Univerziteta u Novom Sadu, mogli konkurisati i dati svoje doprinose. Takođe, izgradnja mreže evropskih partnerskih instutucija u cilju zajedničkog učešća na pozivima u okviru sledećeg okvirnog programa predstavlja značajan zadatak u okviru ovog projekta.
Trajanje projekta:
2011 - 2013
***Institucije učesnici / partneri**:*
Filozofski fakultet, Fakultet tehničkih nauka, Medicinski fakultet, Prirodno-matematički fakultet, Univerzitet u Novom Sadu
Učesnici –istraživači sa FTN
Vladimir Crnojević, Branislav Borovac, Silvia Gilezan, Goran Stojanović
Oprema nabavljena iz projektnih sredstava
-

Projects of importance for sciences and technological development of AP Vojvodina – Title:
POSITIONING OF SCIENTIFIC COMMUNITY OF THE UNIVERSITY OF NOVI SAD IN THE EIGHT FRAMEWORK PROGRAMME OF EUROPEAN UNION FOR RESEARCH AND DEVELOPMENT
Project code / acromin:
114-451-2729/2012-04
Web site:
-
Grantholder
Prof. dr Miroslav Vesković
Coordinator FTS:
Prof. dr Vladimir Crnojević
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technical and Technological Sciences
Summary:
The aim of this project is integration of active research potentials within the University of Novi Sad with the intention of writing successful project proposals in the next framework programme of EU, FP8 or HORIZON'2020. It is necessary to analyze important strategic documents of European Commission related to the HORIZON'2020 and make proposals of multidisciplinary topics where researchers from University of Novi Sad can participate and give their contribution. Additionally, building the network of strategic partnering institutions with the aim of joint applications for open calls within HORIZON'2020 represents the important task in the framework of this project.
Duration:
2011 - 2013
***Partners**:*
Faculty of Philosophy, Faculty of Technical Sciences, Faculty of Medicine, Faculty of Science, University of Novi Sad
Researchers *from the FTS:*
Vladimir Crnojević, Branislav Borovac, Silvia Gilezan, Goran Stojanović
Equipment purchased from project funds:
-

Projekat od značaja za nauku i tehnološki razvoj AP Vojvodine – naziv:
KORELACIJA IZMEĐU SASTAVA I SVOJSTAVA METAL-DOPIRANIH NEKRISTALNIH HALKOGENIDA
Oznaka projekta / akronim:
114-451+2187/2012-02
Web:
-
Rukovodilac projekta:
Prof. Dr Svetlana Lukić-Petrović
Rukovodilac projekta sa FTN:
Prof. Dr Goran Stojanović
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehničko – tehnološke nauka / razvojna istraživanja
Opis projekta:
Osnovni cilj istraživanja je analiza aplikativnih osobina metal-dopiranih halkogenida kao posledica sastava, odnosno izmena u neuređenoj strukturnoj. Sa povećanjem broja komponenti sposobnost formiranja stakla se povećava. Utvrdiće se najoptimalniji odnosi elementarnih komponenti i tehnološkog procesa dobijanja s obzirom da izbor odgovarajućeg sastava stakla i strukture omogućuje da se kreira specifična mikrostruktura koja će optimizovati performanse stakla. Biće sprovedeno ispitivanje termodinamičkih, mehaničkih, električnih i optičkih osobina. Spektroskopske tehnike visoke rezolucije (Raman, IR, micro–Raman, FT–Raman i optička apsorpciona spektroskopija), površinski osetljive tehnike (XPS/UPS), kao i teorijske i poluempirijske kalkulacije će biti primenjene u cilju ispitivanja strukturnih karakteristika halkogenidnih stakala i povezivanja mikroskopske strukture sa makroskopskim osobinama. Upotrebiće se sofisticirana oprema za merenje optičke nelinearnosti, kao i mnogih električnih parametara različitih komponenti i kola u zavisnosti od frekvencije (Impedance Analyzer, Curve Tracer, Hall effect measurement system, itd.).
Trajanje projekta:
4 godine
Institucije učesnici / partneri:
Prirodno-matematički i Fakultet tehničkih nauka Univerziteta u Novom Sadu
Učesnici –istraživači sa FTN
Goran Stojanović, Miloš Slankamenac, Dragana Štrbac
Oprema nabavljena iz projektnih sredstava
-

Projects of importance for sciences and technological development of AP Vojvodina – Title:

CORRELATION BETWEEN THE COMPOSITION AND CHARACTERISTICS OF METAL-DOPED NONCRYSTALINE CHALCOGENIDES

Project code / Acronym:

114-451+2187/2012-02

Web site:

-

Grantholder

Prof. dr Svetlana Lukić-Petrović

Coordinator FTS:

Prof. dr Goran Stojanović

Scientific Research Fields / Type of research (Fundamental / Applied / Development)

Technical and Technological Sciences

Summary:

The main aim of this research is analysis of applicable properties and characteristics of metal-doped chalcogenides as a consequence of the composition or changes in the internal structure. With increasing number of atoms possibility for glass forming is increased. This project will investigate optimal ratio of elementary atoms and technological process bearing in mind that glass composition and internal structure enable creation of specific microstructure which will optimize glass characteristics.

Thermodynamics, mechanical, electrical and optical characteristics will be analyzed. High-resolution spectroscopic technique (Raman, IR, micro-Raman, FT-Raman and optical absorption spectroscopy), surface sensitive techniques (XPS/UPS) as well as theoretical and semi-empirical calculation will be applied with the aim of exploring structural characteristics of chalcogenides glasses and connecting microscopic structure with macroscopic characteristics. Modern equipment will be used for measuring nonlinear optical performances, electrical parameters, etc. (Impedance Analyzer, Curve Tracer, Hall effect measurement system, etc.).

Duration:

4 years

Partners:

Faculty of Sciences and Faculty of Technical Sciences/University of Novi Sad

Researchers *from the FTS:*

Goran Stojanović, Miloš Slankamenac, Dragana Štrbac

Equipment purchased from project funds:

-

Projekat od značaja za nauku i tehnološki razvoj AP Vojvodine – naziv:
AUDIO BIBLIOTEKA ZA OSOBE SA INVALIDITETOM
Oznaka projekta / akronim:
ABOSI
Web:
www.alfanum.ftn.uns.ac.rs
Rukovodilac projekta:
Prof. dr Vlado Delić, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Vlado Delić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehničko – tehnološke nauka / razvojna istraživanja
Opis projekta:
Projekat se bazira na Audio biblioteci za slepe i slabovide (ABSS) koja je razvijena na inovacionom projektu Ministarstva nauke. ABSS je prilagođena korisnicima računara koji ne vide, ali čuju i koriste ruke i tastaturu. Druge OSI koriste različite interfejse (specijalne džojstike, miševe i tastature, Brajeve redove, duvaljke, pogled), a i govorne komande na srpskom se danas automatski prepoznaju, pa se na projektu istražuju mogućnosti njihovog korišćenja za efikasan pristup ABOSI. Analizirane su mogućnosti povezivanja ABOSI i digitalnih biblioteka na bazi iskustva sa BISIS-om i radi se na njihovom povezivanju u cilju povećanja bibliotečkog fonda koji će biti dostupan preko ABOSI.
Trajanje projekta:
2011 - 2014
***Institucije učesnici / partneri**:*
Fakultet tehničkih nauka, Medicinski fakultet, Prirodno-matematički fakultet Univerziteta u Novom Sadu, Alpineon d.o.o. Ljubljana, Model Labs GmbH u Berlinu
Učesnici –istraživači sa FTN
Vlado Delić, Milan Sečujski, Branko Milosavljević, Slavica Golubović
Oprema nabavljena iz projektnih sredstava
Sitna računarska oprema za FTN i jedan kamkorder za Medicinski fakultet.

Projects of importance for sciences and technological development of AP Vojvodina – Title:
AUDIO LIBRARY FOR THE DISABLED
Project code / Acronym:
ABOSI
Web site:
www.alfanum.ftn.uns.ac.rs
Grantholder
Professor Vlado Delić, PhD – Faculty of Technical Sciences
Coordinator FTS:
Professor Vlado Delić, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technical and Technological Sciences
Summary:
The project is based on the Audio Library for the Visually Impaired (ABSS) that is developed on an innovation project financed by Serbian Ministry of Science. ABSS is suited for the visually impaired users which can hear and use of keyboard. Other people with disabilities use other interfaces (special joysticks, mice, keyboards, Braille lines, blowers, gaze) and speech commands in Serbian are automatically recognised nowadays. Their applications in ABOSI are investigated in the project. Moreover, the posibility of connections between ABOSI and other digital libraries is analised based on BISIS experience in order to increase library holdings that will be available via ABOSI.
Duration:
2011 - 2014
***Partners**:*
Faculty of Technical Sciences, Faculty of Medicine, Faculty of Sciences of University in Novi Sad, Alpineon d.o.o. Ljubljana, Model Labs GmbH
Researchers *from the FTS:*
Vlado Delić, Milan Sečujski, Branko Milosavljević, Slavica Golubović
Equipment purchased from project funds:
Small equipment for FTN and a camcorder for the Faculty of Medicine.

Projekat od značaja za nauku i tehnološki razvoj AP Vojvodine – naziv:

ISTRAŽIVANJE I RAZVOJ ENERGETSKI EFIKASNIH SISTEMA NAPAJANJA I POGONA ELEKTRIČNIH AUTOMOBILA

Oznaka projekta / akronim:

114-451-3508/2013

Web:

Rukovodilac projekta:

Prof. dr Vladimir Katić, E-mail: katav@uns.ac.rs

Rukovodilac projekta sa FTN:

Prof. dr Vladimir Katić, E-mail: katav@uns.ac.rs

Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):

Tehničko-tehnološke nauke / razvojna

Opis projekta:

Predmet istraživanja su električni sistemi napajanja i pogona električnih vozila. U tom smislu projektom se proučavaju energetski efikasni sistemi brzog punjenja i pražnjenja akumulatorskih baterija, algoritmi optimalnog rada električnih potrošača u automobilu, upravljački sistemi pogona visokih performansi te uticaj električnih automobila na distributivnu mrežu. Kao pogonska mašina, istražuje se mogućnost primene višefaznih motora (šestofazni), kao i odgovarajućih energetskih pretvarača za njihov pogon. Takođe, razmatra se i iznalaženje optimalnog upravljanja pogonskim sklopom automobila u cilju minimalne potrošnje energije uz istovremeno ostvarivanje maksimalnih performansi. U žiži interesovanja je i bilateralni energetski pretvarač sa funkcijom kontrole i regulacije protoka aktivne i reaktivne energije između automobila i spoljne distributivne mreže.
Cilj projekta je realizacija robustnog, kvalitetnog, energetski efikasnog i po ceni konkurentnog sistema napajanja i pogona električnog automobila.

Trajanje projekta:

4 godine

Institucije učesnici / partneri:

1. Liverpool John Moores University, School of Engineering, Byrom Street, Liverpool, L3 3AF, U.K.
2. University of Timisoara, bd. Vasile Parvan 2, RO-300223 Timisoara, Romania

Učesnici – istraživači sa FTN:

Vladimir Katić, Veran Vasić, Darko Marčetić, Đura Oros, Nikola Čelanović, Stevan Grabić, Vlado Porobić, Boris Dumnić, Dejan Reljić, Dragan Milićević, Zoltan Čorba, Evgenije Adžić, Marko Vekić, Zoran Ivanović

Oprema nabavljena iz projektnih sredstava:

Električne mašine, akumulatori i baterije, merni instrumenti, merna i senzorna oprema, transformatori, sklopna i zaštitna oprema, elektronske komponente, računari i računarska oprema itd.

Projects of importance for sciences and technological development of AP Vojvodina – Title:

RESEARCH AND DEVELOPMENT OF ENERGY EFFICIENT SUPPLY AND DRIVE SYSTEMS FOR EVS

Project code / acronym:

114-451-3508/2013

Web site:

Grantholder:

Prof. dr Vladimir Katić, E-mail: katav@uns.ac.rs

Coordinator from the Faculty of Technical Sciences:

Prof. dr Vladimir Katić, E-mail: katav@uns.ac.rs

Scientific Research Field / Type of research (Fundamental / Applied / Development):

Technical and technological sciences / developmental research

Project Summary:

The topic of the project are electrical supply and drive systems in modern EV's. The energy-efficient fast battery charging and discharging systems, the algorithms for optimal operation of EV's electrical loads, algorithms for high performance control and possible impact of EV's charging on the distribution network are the research problems in the framework of this project. As a driving electrical machine, a multi-phase motor (six phases) and corresponding power converter are investigated. Also, the optimal control of EV's power train in order to minimize energy consumption and simultaneously achieve maximum performance is considered. The focus of interest is the bilateral energy converter with the function of the control and regulation of the flow of active and reactive power between the car and the public distribution network.
The aim of the project is to create a robust, high-quality, energy-efficient and price competitive supply and drive system for EVs.

Duration of the project:

4 years

Partners:

1. Liverpool John Moores University, School of Engineering, Byrom Street, Liverpool, L3 3AF, U.K.
2. University of Timisoara, bd. Vasile Parvan 2, RO-300223 Timisoara, Romania

Researchers from the FTS:

Vladimir Katić, Veran Vasić, Darko Marčetić, Đura Oros, Nikola Čelanović, Stevan Grabić, Vlado Porobić, Boris Dumnić, Dejan Reljić, Dragan Milićević, Zoltan Čorba, Evgenije Adžić, Marko Vekić, Zoran Ivanović

Equipment purchased from the project funds:

Electrical machinery, accumulators and batteries, measuring instruments, measuring and sensory equipment, transformers, switchgear and protection equipment, electronic components, computers and computer equipment and etc.

Projekat od značaja za nauku i tehnološki razvoj AP Vojvodine – naziv:
MATEMATIČKI MODELI INTELIGENTNIH SISTEMA I NJIHOVA PRIMENA
Oznaka projekta / akronim:
MMISIP
Web:
new.informatika.ftn.uns.ac.rs/istrazivanje
Rukovodilac projekta:
Akademik Enre Pap
Rukovodilac projekta sa FTN:
Prof. dr Zora Konjović
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehničko – tehnološke nauka / razvojna istraživanja
Opis projekta:
Istraživanje koji realizuje učesnik Fakultet tehničkih nauka usmereno je u dva pravca. Prvi pravac bavi se matematičkim modelima prostorno determinisanih sistema u uslovima neodređenosti i njihovim primenama, a drugi deo obuhvata istraživanja vezana za fazi mere i njihove primene.
Trajanje projekta:
2011-2014
***Institucije učesnici / partneri**:*
Vojvođanska akademija nauka i umetnosti, Prirodno-matematički fakultet u Novom Sadu, Fakultet tehničkih nauka u Novom Sadu, Tehnološki fakultet u Novom Sadu, Visoka škola strukovnih studija za obrazovanje vaspitača u Novom Sadu, Učiteljski fakultet na mađarskom nastavnom jeziku u Subotici, Obuda University u Budimpešti, Mađarska
Učesnici –istraživači sa FTN
Zora Konjović, Biljana Mihailović, Đorđe Obradović
Oprema nabavljena iz projektnih sredstava
U okviru finansijskog plana nije bila predviđena nabavka opreme za FTN. Shodno tome, nije nabavljana nikakva oprema za FTN.

Projects of importance for sciences and technological development of AP Vojvodina – Title:
MATHEMATICAL MODELS OF INTELLIGENT SYSTEMS AND THEIR APPLICATIONS
Project code / Acronym:
MMISIP
Web site:
new.informatika.ftn.uns.ac.rs/istrazivanje
Grantholder
Academician Endre Pap
Coordinator FTS:
Professor Zora Konjović , PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technical and Technological Sciences
Summary:
Research carried out by Faculty of Technical Sciences is targeted towards two directions. The first direction deals with mathematical model of spatially determined systems under uncertainty conditions, while the second one is targeting research concerning fuzzy measures and their applications.
Duration:
2011-2014
***Partners**:*
Vojvodinian Academy of Sciences and Arts in Novi Sad, Faculty of Sciences in Novi Sad, Faculty of Technical Sciences in Novi Sad, Faculty of Technology, College for Vocational Education of Educators in Novi Sad, Teaching Faculty in Hungarian Teaching Language in Subotica, Obuda University in Budapest, Hungaria
Researchers *from the FTS:*
Zora Konjović, Biljana Mihailović, Đorđe Obradović
Equipment purchased from project funds:
The financial plan of the project did not foresee any equipment purchasing for FTN. Accordingly, no equipment was purchased for FTN,

Projekat od značaja za nauku i tehnološki razvoj AP Vojvodine – naziv:
RAZVOJ PROGRAMSKE PODRŠKE ZA SAŽIMANJE PODATAKA ZASNOVAN NA METODAMA RAČUNARSKE INTELIGENCIJE
Oznaka projekta / akronim:
114-451-2434 (Broj projekta)
Web: -
-
Rukovodilac projekta:
Prof. dr Dragan Kukolj, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Dragan Kukolj
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehničko – tehnološke nauka / razvojna istraživanja
Opis projekta:
Predmet istraživanja na projektu je razvoj programske podrške za sažimanje visoko-dimenzionalnih podataka koji su karakteristični za proces analize patentnih portfolija. Automatska analiza tekstova patentnih portfolija, sastavljenih često od velikog broja patenata, ima za cilj sticanje suštinskog razumevanja tehnoloških karakteristika kompanije, kao i stanja i trendova u razmatranoj industriji i tržištu. Kao rezultat projekta se očekuje realizacija programske podrške za analizu IP (eng. Intellectual Property) portfolija. U doba sve veće konkuretnosti na tržištu i primata kompanija koje vrlo brzo usvajaju i izbacuju nova tehnička rešenja javlja se sve veća potreba za bržim transferom tehnologija i u tu svrhu evaluacija tehničkih rešenja i tržišta. Ovaj trend je pogotovo važan za razvoj malih i srednjih preduzeća koji kroz patentiranje, a potencijalno i licenciranjem, svojih tehnoloških rešenja mogu ravnopravno da konkurišu velikim multi-nacionalnim kompanijama. U tu svrhu postupak analize tehnologija ima za cilj da se dobije suštinsko razumevanje stanja i trendova u razmatranoj tehnološkoj oblasti, tržišta kao i konkurencije. S toga je neophodno obezbediti pristup velikoj količini raznorodnih podataka koji su javno dostupni, u današnje vreme najčešće putem interneta. Dva glavna izvora takvih informacija su (i) patentni dokumenti i (ii) marketing materijali tipa dokumenata vezanih za rad kompanija (npr. godišnji izveštaji, pregled proizvoda, pregled njihovog udela na tržištu itd.). Programska podrška će pomoći prilikom donošenja poslovnih odluka kao što su: (i) patentiranje tehničkih rešenja, (ii) nuđenje svojih patentnih rešenja za licenciranje drugim kompanijama (iii) integracija / kupovina kompanija ili IP paketa (IP pools), ili (iv) prilikom razrešavanja sudskih sporova uzrokovanim nelegalnim korišćenjem IP svojine (patenata).
Trajanje projekta:
2 godine (2011 – 2013)
Institucije učesnici / partneri:
Fakultet tehničkih nauka u Novom Sadu, Učiteljski fakultet na mađarskom nastavnom jeziku u Subotici, Univerzitet u Segedinu Institut za informatiku
Učesnici –istraživači sa FTN
Dragan Kukolj, Miroslav Popović, Ištvan Pap, Dragan Samardžija, Jelena Kovačević
Oprema nabavljena iz projektnih sredstava
-

Projects of importance for sciences and technological development of AP Vojvodina – Title:
DEVELOPMENT OF DATA REDUCTION ENGINE BASED ON COMPUTATIONAL INTELLIGENCE
Project code / Acronym:
114-451-2434 (Project Number)
Web site:
-
Grantholder
Professor Dragan Kukolj, PhD – Faculty of Technical Sciences
Coordinator FTS:
Professor Dragan Kukolj, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technical and Technological Sciences
Summary:
In present times, with high market competiveness, when leading companies very quickly adopt and launch new technical solutions there is ever higher need for faster technology transfer and evaluation of technical solutions and markets. This trend is especially important for small and medium enterprises which, through patented solutions and their potential licensing, can compete with large multi-national companies. Therefore, the main aim of technology analysis process is to obtain in depth understanding of state and trends in certain areas of technology, market place and competitors. To the end, it is necessary to be able to access vast amount of various types of data which are nowadays publicly available mainly via internet access. Two main sources of information are: (i) patent documents and (ii) company marketing and operational documents (e.g. annual reports, products overview, market share overview etc.). Patent documents, as technical and legal entities, contain precise method, system and/or device descriptions which protect invention on certain territories and as such can only be enforced under legally regulated conditions. The project aims to develop a software which will be used as a business decision support mechanism, for example for: (i) patenting technical solutions (ii) offering patented solutions for licensing to other companies (iii) integration or purchase of companies or IP pools (iv) litigation cases due to illegal use of patented solutions.
Duration:
2 years (2011-2013)
***Partners**:*
Faculty of Technical Sciences in Novi Sad, Teachers Faculty in Hungarian Teaching Language in Subotica, University of Szeged Institute for Informatics
Researchers *from the FTS:*
Dragan Kukolj, Miroslav Popović, Ištvan Pap, Dragan Samardžija, Jelena Kovačević
Equipment purchased from project funds:
-

Projekat od značaja za nauku i tehnološki razvoj AP Vojvodine – naziv:

RAZVOJ I PRIMENA NOVIH MATERIJALA NA BAZI DOMAĆIH SIROVINA U FUNKCIJI REVITALIZACIJE MATERIJALNOG KULTURNOG NASLEĐA U RURALNIM SREDINAMA VOJVODINE

Oznaka projekta / akronim:

114-451-2689/2012-02

Web:

Rukovodilac projekta:

Prof. dr Jonjaua Ranogajec

Rukovodilac projekta sa FTN:

Prof. dr Miroslava Radeka

Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)

Technical and Technological Sciences

Opis projekta:

Ovaj naučnoistraživački projekat od posebnog interesa za ruralni razvoj Pokrajine ima multidisciplinarni karakter povezujući naučnoistraživačke institucije i istraživače različitih profila u cilju očuvanja materijalnog kulturnog nasleđa Pokrajine. Usled složenosti postavljenih ciljeva projekta neophodan je istraživački tim koji okuplja naučnike iz oblasti materijala, katalize i inženjerstva materijala. Istraživanja treba da obezbede aplikaciju naučnih saznanja, vezanih za razvoj i primenu novih materijala na bazi dostupnih sirovina nižeg kvaliteta (nalazište glinenog peska „Belo blato“ kod Zrenjanina), u planiranju i izvođenju sanacionih radova na lokalitetima pokrajine (srednjevekovna tvrđava Bač i manastir Bođani), uz preporuke za razvoj proizvodnje materijala za očuvanje kulturne baštine. Biće izvršena karakterizacija i izvor mineralnih sirovina, nakon čega će se pristupiti dizajniranju pucolanskih maltera i karakterizaciji očvrslih maltera. Kompatabilnost dizajniranih maltera i različitih podloga, od ključnog značaja za primenu u kulturnom nasleđu, biće određena na osnovu rezultata ispitivanja dimenzione stabilnosti, toplotnog širenja, modula elastičnosti, transportnih osobina i alkalno silikatnih reakcija.
Posebnu inovaciju u ovom projektu predstavlja razvoj novih fotokatalitičkih nanokompozita na bazi slojevitih hidroksida i TiO2 i/ili drugih poluprovodnika i njihovu primenu u dobijanju građevinskih materijala sa funkcijom samočišćenja (razgradnje organskih, mikrobioloških i neorganskih polutanata). Nova saznanja omogućiće dobijanje aktivne strukture konačnog proizvoda, kao osnove za razvoj tehnologije novih građevinskih materijala sa funkcijom samočišćenja i njihovoj primeni u očuvanju materijalne kulturne baštine Vojvodine. Međunarodno učešće će omogućiti protok znanja, iskustva i podataka o karakteristikama sirovina koje se mogu primeniti u kulturnom nasleđu iz šireg regiona, kao i korišćenje komplementarne opreme u istraživanjima.

Trajanje projekta:

2011-2014

***Institucije učesnici / partneri**:*

Tehnoloiški fakultet u Novom Sadu, Fakultet tehničkih nauka u Novom Sadu, Zavod za gradbeništvo Slovenije, Tehnološko-metalurški fakultet Univerziteta Sv. Kirilo i Metodije u Skoplju – Makedonija,

Učesnici –istraživači sa FTN

Prof. Dr Miroslava Radeka

Oprema nabavljena iz projektnih sredstava

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Projects of importance for sciences and technological development of AP Vojvodina – Title:
DEVELOPMENT AND APPLICATION OF NEW MATERIALS BASED ON LOCAL RAW MATERIALS FOR THE REVITALIZATION OF CULTURAL HERITAGE IN RURAL ARESS OF VOJVODINA
Project code / Acronym:
114-451-2689/2012-02
Web site:
-
Grantholder
Professor Jonjau Ranogajec, PhD - Faculty of Technology in Novi Sad
Coordinator FTS:
Professor Miroslava Radeka, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technical and Technological Sciences
Summary:
This scientific research project of special interest for the rural development of the Province is multidisciplinary in character and connects scientific research institutions and researchers of different profiles with the aim to preserve the material cultural heritage of the Province. Due to the complexity of the aims of the project, a research team is needed which gather researchers from the fields of the science of materials, catalysis, and materials engineering. Research should provide the application of the scientific results connected with the development and application of new materials on the basis of available raw materials of lower quality (the clay sand site "Belo Blato" near Zrenjanin), in planning and performing repairs on the localities in the Province (the medieval fort in Bač and the Bođani monastery), with recommendations for the development of the production of material used in the preservation of cultural heritage. The team will perform the characterization and choice of mineral raw materials and then will design pozzolana mortar and characterize hardened mortar. The compatibility of designed mortar and various surfaces, which is of key importance for the application in cultural heritage, will be determined on the basis of the results of testing dimensional stability, spread of heat, elasticity module, transport qualities, and alkali-silica reactions. A special innovation in this project is the development of new photocatalytic nanocomposites on the basis of layered hydroxides and TiO2 and/or other semi-conductors and their application in producing construction materials with the self-cleaning function (degradation of organic, microbiological and non-organic pollutants). New knowledge will help to get the active structure of the final product as a basis for the development of technology of new construction material with the self-cleaning function and their application in the preservation of the cultural heritage of Vojvodina. International participants will provide the flow of knowledge, experience and data regarding the characteristics of raw materials which can be applied in cultural heritage in the wider region, as well as the use of complementary equipment in research.
Duration:
2011-2014
***Partners**:*
Faculty of Technology in Novi Sad, Faculty of Technical Sciences in Novi Sad, Slovenian National and Building and Civil Engineering Institute, Slovenia, Faculty of Technology and Metallurgy, University Sts. Cyril and Methodius, Skopje, Macedonia
Researchers from the FTS:
Equipment purchased from project funds:

Projekat od značaja za nauku i tehnološki razvoj AP Vojvodine – naziv:
MODELI ODRŽIVOG RAZVOJNA SAOBRAĆAJA U VOJVODINI
Oznaka projekta / akronim:
Web:
Rukovodilac projekta:
Prof. dr Vladimir Škiljaica, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Vladimir Škiljaica
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehničko – tehnološke nauka / razvojna istraživanja
Opis projekta:
Smernice razvojna saobraćajnog sistema u gradovima Evrope upućuju na to da je smanjenje zavisnosati od korišćenja automobila neophodan element savremene strategije i jedan od osnovnih načina dostizanja veće održivosti sistema. Povećanje pristupačnosti alternativnih vidova prevoza prihvatljivih za životnu sredinu kao što su javni prevoz, bicikl i pešačenje, jedan je od osnovnih preduslova restrikcije prava korišćenja automobila. Pred planerima je danas veliki broj različitih mera iz oblasti saobraćajne politike, politike korišćenja zemljišta i mera iz oblasti tehnoloških inovacija. Iskustva primene u gradovima Evrope upućuju da je jedan od osnovnih preduslova dostizanja održive mobilnosti strategija koja podrazumeva integrisan pristup u rešavanju problema kombinacijom velikog broja različitih instrumenata saobraćajne politike u skladu sa zahtevima različitih struktura korisnika i specifičnošću uslova i problema datog gradskog okruženja.
Trajanje projekta:
4 godine
Institucije učesnici / partneri:
Fakultet tehničkih nauka u Novom Sadu, Fakultet prometnih znanosti u Zagrebu
Učesnici –istraživači sa FTN
Vladimir Škiljaica, Pavle Gladović, Vuk Bogdanović, Zoran Papić, Milica Miličić, Valentina Basarić, Dragan Živanić, Milja Leković, Nenad Ruškić, Jelena Mitrović
Oprema nabavljena iz projektnih sredstava

Projects of importance for sciences and technological development of AP Vojvodina – Title:

MODELS OF SUSTAINABLE DEVELOPMENT OF TRAFFIC IN VOJVODINA

Project code / Acronym:

Web site:

Grantholder

Professor Vladimir Škiljaica, PhD – Faculty of Technical Sciences

Coordinator FTS:

Professor Vladimir Škiljaica, PhD

Scientific Research Fields / Type of research (Fundamental / Applied / Development)

Technical and Technological Sciences

Summary:

Waypoints of development of transport systems in European cities points to that decrease of dependence on private cars is necessary element of modern strategies and one of basic methods of achieving higher sustainability of a system. Increase of availability of EFMT (environmentally friendly means of transport) is one of basic conditions in restriction in use of a car. Modern transport planners are faced with a wide spectrum of different transport policy measures, land use policies and measures in the field of technological innovation.

The experiences in implementation of different instruments and strategies in large European cities indicate that one of the key prerequisites in achieving sustainable mobility is that transport issues are addressed through integrated approach, through optimal combination of a large number of transport and land use policy instruments, in accordance with the demands of different user groups and characteristics of the environment they are aimed at.

Duration:

4 years

Partners:

Faculty of Technical Sciences in Novi Sad, Faculty of Traffic Sciences in Zagreb

Researchers *from the FTS:*

Vladimir Škiljaica, Pavle Gladović, Vuk Bogdanović, Zoran Papić, Milica Miličić, Valentina Basarić, Dragan Živanić, Milja Leković, Nenad Ruškić, Jelena Mitrović

Equipment purchased from project funds:

Projekat od značaja za nauku i tehnološki razvoj AP Vojvodine – naziv:
INTEGRACIJA IDENTIFIKACIONIH TEHNOLOGIJA U UREĐAJE ZA PROIZVODNJU AMBALAŽE ZA PREHRAMBENE, HEMIJSKE I MEDICINSKE PROIZVODE
Oznaka projekta / akronim:
114-451-1948
Web:
Rukovodilac projekta:
Prof. dr Stevan Stankovski, Fakultet tehničkih nauka u Novom Sadu
Rukovodilac projekta sa FTN:
Prof. dr Stevan Stankovski
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehničko – tehnološke nauka / razvojna istraživanja
Opis projekta:
Kvalitet proizvoda u velikom broju slučajeva nije jasno prepoznatljiv od stane korisnika budući da podaci koji su naznačeni na ambalaži ne preciziraju kvalitet i istoriju sirovina, uslove u kojima je proizvod transportovan i čuvan, kao ni ograničenje korišćenja koje pojedini potrošači, osetljivi na određene komponente u hrani, hemijskim sredstvima ili medicinskim/farmaceutskim proizvodima smeju da koriste. Pored toga, prehrambena, hemijska, farmaceutska i procesna postrojenja rukuju brojnim sirovinama svakodnevno. Neke od ovih sirovina mogu biti vrlo toksične i opasne po okolinu, odnosno da predstavljaju hazardni materijal kojem se mora posvetiti posebna pažnja. To znači, da je veoma značajno da neke od kritičnih informacija, kao što su: tip hemikalije, njene komponente, koncentracija i slično, kada je kontejner sa datom hemikalijom dopremljen, kada i gde je poslednji put lociran unutar fabrike, ako se transportuje unutar fabrike, koja je njegova putanja i da li se našao na toj destinaciji u predviđeno vreme, da li je napustio fabriku (npr. da li je otpremljen na reciklažu ili distributeru ili kupcu), budu dostupne. Pored toga, u slučaju farmaceutskih proizvoda potrebno je izvršiti jedinstveno označavanje svakog pojedinačnog pakovanja i obezbediti infrastrukturu i servise koji će omogućiti njihovo praćenje u lancima snabdevanja i zdravstvenim ustanovama. Preduslov za ovakvu mogućnost jeste implementacija novih identifikacionih tehnologija u ambalažu u kojoj se nalazi proizvod. Ovde se pre svega misli na RFID (Radio Frequency Identification) tehnologiju čijom se primenom može ostvariti inteligentna ambalaža. Ambalaža koja će krajnjem korisniku moći da pruži sve bitne informacije o proizvodu koji se u njoj nalazi, uključujući i promene koje su nastale nakon pakovanja. Za ostvarivanje ovog cilja potrebno je razviti i posebne uređaje koji se moraju prilagoditi tipu i nameni RFID tagova koji se postavljaju na ambalažu (proizvod). Razvoj i primena ovih uređaja su osnovni preduslov za još masovniju primenu RFID tehnologije koja menja bar kod tehnologiju. To znači da će svaki proizvođač ambalaže morati da poseduje bar jedan tip ovog uređaja, prilagođen datim mašinama i ambalaži koja se proizvodi.
Trajanje projekta:
4 godine
***Institucije učesnici / partneri**:*
Fakultet tehničkih nauka u Novom Sadu, South Dacota School of Mines and Technology, Rapid City, USA, Elektrotehnički fakultet u Istočnom Sarajevu, Mašinski fakultet Univerziteta u Ljubljani
Učesnici –istraživači sa FTN
Stevan Stankoviski, Gordana Ostojić, Milovan Lazarević, Ivana Šenk, Laslo Tarjan
Oprema nabavljena iz projektnih sredstava

Projects of importance for sciences and technological development of AP Vojvodina – Title:
INTEGRATION OF ID TECHNOLOGIES IN FOOD, CHEMICAL AND MEDICAL PACKING DEVICES
Project code / acromin:
114-451-1948
Web site:
Grantholder
Professor Stevan Stankovski, PhD – Faculty of Technical Sciences
Coordinator FTS:
Professor Stevan Stankovski, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technical and Technological Sciences
Summary:
Product quality in many cases is not clearly distinguishable from the users since it fits the data indicated on the packaging does not specify the quality of raw materials and history, the conditions in which the product is transported and stored, or limitation on the use of individual consumers, sensitive to certain components in food, chemical substances or medical / pharmaceutical products must be used. In addition, food, chemical, pharmaceutical and process plants handling various raw materials on a daily basis. Some of these materials can be very toxic and dangerous to the environment or to a hazardous material which requires special attention. This means that it is very important that some of the critical information such as: type of chemical, its components, concentration, etc., when the container was delivered to a given chemical, when and where it was last located within the plant, if it is transported within the plant, which is the trajectory that you have found on this destination at the scheduled time, was abandoned factory (e.g. whether recycling or shipped to the dealer or customer), are available. In addition, in the case of pharmaceutical products, it is necessary to uniquely mark each package and provide infrastructure and services that will allow you to keep track of the supply chain and healthcare facilities. A prerequisite for such a possibility is the implementation of new identification technologies in packaging that contains the product. This primarily refers to the RFID (Radio Frequency Identification) technology whose implementation can achieve intelligent packaging. Packaging to the end-user will be able to provide all the relevant information about the product it contains, including changes that occurred after packaging. To achieve this goal, it is necessary to develop special devices that must be adapted to the type and purpose of RFID tags that can be placed on the packaging (product). Development and application of these devices is the fundamental requirement for more mass deployment of RFID technology is changing the bar code technology. This means that every manufacturer of packaging have to own at least one type of device, adapted to the given machines and packaging products.
Duration:
4 years
***Partners**:*
Faculty of Technical Sciences in Novi Sad, South Dacota School of Mines and Technology, Rapid City, USA, Electrical Faculty of University in East Sarajevo, University of Ljubljana, Faculty of Mechanical Engineering
Researchers *from the FTS:*
Stevan Stankoviski, Gordana Ostojić, Milovan Lazarević, Ivana Šenk, Laslo Tarjan
Equipment purchased from project funds:

Projekat od značaja za nauku i tehnološki razvoj AP Vojvodine – naziv:
EVROPSKA DRŽAVA BLAGOSTANJA I SIROMAŠTVO: INTRA I INTEREGIONALNA ANALIZA
Oznaka projekta / akronim:
Web:
Rukovodilac projekta:
Prof. dr Kosta Josifidis, Ekonomski fakultet u Subotici
Rukovodilac projekta sa FTN:
Prof. dr Alpar Lošonc
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Tehničko – tehnološke nauka / razvojna istraživanja
Opis projekta:
Projekat se bavi sa konkretizacijom različitih aspekata države blagostanja i siromaštva s obzirom na konstelaciju u Vojvodini i Srbiji, polazeći od odgovarajućih metodoloških okvira.
Trajanje projekta:
-
Institucije učesnici / partneri:
Ekonomski fakultet u Subotici, Fakultet tehničkih nauka u Novom Sadu, University of Nice-Sophia Antipolis CEMAFI – Faculty of Low and Economics, Francuska
Učesnici –istraživači sa FTN
Alpar Lošonc
Oprema nabavljena iz projektnih sredstava
-

Projects of importance for sciences and technological development of AP Vojvodina – Title:
THE EUROPEAN WELFARE STSTE AND PROPERTY: INTRAREGIONAL INTERREGIONAL ANALYSIS
Project code / Acronym:
Web site:
Grantholder
Professor Kosta Josifidis, PhD – Faculty of Economics
Coordinator FTS:
Professor Alpar Lošonc , PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Technical and Technological Sciences
Summary:
The project is dealing with the concretization of the welfare state and poverty in relation to the constellation in Vojvodina and Serbia starting with the selected methodological framework.
Duration:
-
***Partners**:*
Faculty of Economics in Subotica, Faculty of Technical Sciences in Novi Sad, University of Nice-Sophia Antipolis CEMAFI – Faculty of Low and Economics, France
Researchers *from the FTS:*
Alpar Lošonc
Equipment purchased from project funds:
-

Međunarodni projekti

MP

International Projects

IP

Međunarodni projekti

FP 7

International Projects

FP 7

Naziv projekta Sedmog okvirnog programa FP 7 :
OSMATRANJE ZEMLJE ZA EKONOMSKO OSNAŽIVANJE
Oznaka projekta / akronim:
EOPOWER
Web:
http://www.eopower.eu/
Rukovodilac projekta:
University of Geneva [UNIGE] - Švajcarska
Rukovodilac projekta sa FTN:
Prof. dr Vesna Crnojević-Bengin
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Osmatranje zemlje
Opis projekta:
Svrha EOPOWER projekta je stvaranje uslova za održivi ekonomski razvoj kroz povećano korišćenje proizvoda i usluga za aplikacije životne sredine u osmatranju Zemlje. Projekat služi višem cilju efikasnog korišćenja posmatranja Zemlje u pogledu odlučivanja i upravljanja ekonomskim i održivim razvojnim procesima.
Trajanje projekta:
01.06.2013 – 31.05.2015
Institucije učesnici / partneri:
UNIVERSITE DE GENEVE Švajcarska NOORT HARMANNUS CONRADUS PIETER Holandija INSTITUT DE RECHERCHE POUR LE DEVELOPPEMENT Francuska CENTRUM BADAN KOSMICZNYCH POLSKIEJ AKADEMII NAUK Poljska UNIVERZITA KARLOVA V PRAZE Češka republika SOUTH AFRICA NATIONAL SPACE AGENCY Južna Afrika CENTRE REGIONAL AFRICAIN DES SCIENCES ET TECHNOLOGIES DE L'ESPACE Maroko ARISTOTELIO PANEPISTIMIO THESSALONIKIS Grčka CONSIGLIO NAZIONALE DELLE RICERCHE Italija UNIVERZITET U NOVOM SADU Srbija UNIVERSITEIT TWENTE Holandija TURKIYE BILIMSEL VE TEKNOLOJIK ARASTIRMA KURUMU Turska INSTITUTO NACIONAL DE ASTROFISICA, OPTICA Y ELECTRONICA Meksiko
Učesnici – istraživači sa FTN:
Prof. dr Vesna Crnojević-Bengin Prof. dr Vladimir Crnojević Boris Antić
Oprema nabavljena iz projektnih sredstava:

EU's Seventh Framework Programme (FP7) project – Title:
EOPOWER: EARTH OBSERVATION FOR ECONOMIC EMPOWERMENT
Project code / acronym:
EOPOWER
Web site:
http://www.eopower.eu/
Grantholder:
University of Geneva [UNIGE] - Switzerland
Coordinator from the Faculty of Technical Sciences:
Prof. Dr Vesna Crnojević-Bengin
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Earth Observation
Project Summary:
The purpose of the EOPOWER project is to create conditions for sustainable economic development through the increased use of Earth observation products and services for environmental applications. This purpose serves the higher goal of effective use of Earth observation for decision making and management of economic and sustainable development processes.
Duration of the project:
01.06.2013 – 31.05.2015
Partners:
UNIVERSITE DE GENEVE Switzerland NOORT HARMANNUS CONRADUS PIETER Netherlands INSTITUT DE RECHERCHE POUR LE DEVELOPPEMENT France CENTRUM BADAN KOSMICZNYCH POLSKIEJ AKADEMII NAUK Poland UNIVERZITA KARLOVA V PRAZE Czech Republic SOUTH AFRICA NATIONAL SPACE AGENCY South Africa CENTRE REGIONAL AFRICAIN DES SCIENCES ET TECHNOLOGIES DE L'ESPACE Morocco ARISTOTELIO PANEPISTIMIO THESSALONIKIS Greece CONSIGLIO NAZIONALE DELLE RICERCHE Italy UNIVERZITET U NOVOM SADU Serbia UNIVERSITEIT TWENTE Netherlands TURKIYE BILIMSEL VE TEKNOLOJIK ARASTIRMA KURUMU Turkey INSTITUTO NACIONAL DE ASTROFISICA, OPTICA Y ELECTRONICA Mexico
Researchers from the FTS:
Prof. Dr Vesna Crnojević-Bengin Prof. Dr Vladimir Crnojević Boris Antić
Equipment purchased from the project funds:

Naziv projekta Sedmog okvirnog programa (FP 7):

JEFTINI I ENERGETSKI EFIKASNI LTCC SENZORI I IR-UWB PRIMOPREDAJNICI ZA OSTVARIVANJE ODRŽIVOG ZDRAVOG OKRUŽENJA

Oznaka projekta / akronim:

289481 / SENSEIVER

Web:

www.senseiver.com

Rukovodilac projekta:

Prof. dr Goran Stojanović, Fakultet tehničkih nauka u Novom Sadu

Rukovodilac projekta sa FTN:

Prof. dr Goran Stojanović

Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):

Razvojna

Opis projekta:

Osnovna uloga ovog projekta je da stvori uslove za efikasan trening, obuku i usavršavanje mladih istraživača na Fakultetu tehničkih nauka u oblasti senzora i široko-pojasnih primopredajnika.
U stručnom smislu osnovni ciljevi SENSEIVER projekta su:

1. razvoj inovativnih i jeftinih senzora i njihova fabrikacija (izrada) u LTCC (Low Temperature Co-fired Ceramics) tehnologiji,
2. sinteza novih materijala koji će biti korišćeni kao osetljive prevlake na razvijenim senzorima,
3. razvoj energetski efikasnih široko-pojasnih primopredajnika,
4. dizajn i realizacija inteligentnih sistema za prikupljanje, obradu i prikazivanje relevatnih podataka o kontaminantima iz našeg okruženja (vode, zemlje i vazduha).

Pored ovoga, ovaj projekat je značajan jer će omogućiti zapošljavanje tri mlada istraživača iz inostranstva na Fakultet tehničkih nauka.

Trajanje projekta:

2011. – 2015.

Institucije učesnici / partneri:

Partnerske institucije uključene u SENSEIVER konzorcijum su: (1) Institut za senzorske i aktuatorske sisteme, Beč, Austrija; (2) Tehnički univerzitet Jaši, Rumunija; (3) Institut za elektronske tehnologije, Krakov, Poljska; (4) Institut za sisteme i kompjutersko inženjerstvo, Porto, Portugal; (5) kompanija TES Electronic Solutions GmbH, Štutgart, Nemačka i (6) kompanija North Point Ltd., Subotica, Srbija.

Učesnici –istraživači sa FTN:

Goran Stojanović, Mirjana Videnović Mišić, Slobodan Nedić, Ivan Mezei, Jelena Radić, Alena Đugova, Srđan Ajkalo, Akhil Chandra, Aleksandar Pajkanović.

Oprema nabavljena iz projektnih sredstava:

Mikroelektronika razvojni sistem, Komercijalni senzori za merenje CO2, O2, N2, SO2, itd., Sonde za merenje na vejferu, Licence za softverske alate. itd.

EU's Seventh Framework Programme (FP7) project – Title:

LOW-COST AND ENERGY-EFFICIENT LTCC SENSOR/IR-UWB TRANSCEIVER SOLUTIONS FOR SUSTAINABLE HEALTHY ENVIRONMENT

Project code / acronym:

289481 / SENSEIVER

Web site:

www.senseiver.com

Grantholder:

Prof. Dr. Goran Stojanović, Faculty of Technical Sciences, Novi Sad

Coordinator FTS:

Prof. Dr. Goran Stojanović

Scientific Research Fields / Type of research (Fundamental / Applied / Development)

Development

Summary:

A multi-site network has been formed in order to provide excellent training opportunities to young researchers in the field of wireless sensors and transceivers for application in environmental parameters monitoring.
The goals of the scientific part of the proposal, which will be achieved in accordance with the main objectives are:

1. development of innovative and cost-effective sensors and their fabrication in LTCC (Low-Temperature Co-fired Ceramics) process
2. development of new sensitive materials as coating layers for unique LTCC microsensors platform
3. design and testing of highly energy efficient IR-UWB (impulse radio based ultra wideband) transceivers compatible with designed LTCC sensors
4. development of intelligent systems for acquisition, processing and displaying data relevant to soil, air and water quality.

In addition to this, three young researchers will be employed within the Faculty of Technical Sciences, financed from the budget of this project.

Duration:

2011-2015

Partners:

The members of the SENSEIVER consortium are: (1)Institute for Sensors and Actuators (ISAS), (2)Vienna University of Technology, Austria). Faculty of Electrical Engineering, Technical University Iasi, Romania, (3) Department of Microelectronics, Instytut Technologii Elektronowej, Krakow, Poland, (4) Institute for Systems and Computer Engineering of Porto, Portugal, (5) TES Electronic Solutions, Germany, (6) North Point Ltd., Serbia

Researchers from the FTS:

Goran Stojanović, Mirjana Videnović Mišić, Slobodan Nedić, Ivan Mezei, Jelena Radić, Alena Đugova, Srđan Ajkalo, Akhil Chandra, Aleksandar Pajkanović.

Equipment purchased from project funds:

Mikroelektronika's development system, Commercial sensors for measuring of concentration of CO2, O2, N2, SO2, etc., Z-probe for measuring on the wafer, Licenses for software tools, etc.

Naziv projekta Sedmog okvirnog programa (FP 7):
QB50 Projekat
Oznaka projekta / akronim:
QB50
Web:
https://www.qb50.eu/
Rukovodilac projekta:
Jean Mulyaert, von Karman Institute for Fluid Dynamics, Belgium
Rukovodilac projekta sa FTN:
Prof. dr Vojin Šenk
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Telekomunikacije – primena u satelistskim sistemima / primenjena
Opis projekta:
QB50 jeste mreža 50 CubeSat nano satelita koji su opremljeni skupom standardizovanih senzora sposobnih za simultana daljinska merenja u više tačaka, svih ključnih parametara i sastava do sada slabo istraženih donjih slojeva termosfere i jonosfere. QB50 će takođe proučavati proces ulaska satelita u niže slojeve atmosfere, tako što će se beležiti svi bitni parametri vezani za ponovni ulazak u atmosferu. Ovi podaci biće korišćeni za poređenje sa podacima dobijenim raznim vrstama kompjuterskih simulacija
Trajanje projekta:
2012. - 2016.
Institucije učesnici / partneri:
von Karman Institute for Fluid Dynamics (VKI) i drugi instituti iz oko 40 zemalja
Učesnici –istraživači sa FTN:
Vojin Šenk, Veljko Malbaša, Stevan Stankovski, Gordana Ostojić, Milan Lukić, Predrag Teodorović, Ivana Šenk, Nenad Teofanov, Aleksandar Minja, Veljko Karadžić, Ivan Djermanović, Aleksandar Nikolić
Oprema nabavljena iz projektnih sredstava:

EU's Seventh Framework Programme (FP7) project – Title:
QB50 project
Project code / acronym:
QB50
Web site:
https://www.qb50.eu/
Grantholder:
Jean Mulyaert, von Karman Institute for Fluid Dynamics, Belgium
Coordinator FTS:
Prof. Dr. Vojin Šenk,
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Telecommunications-application in satellite system / Applied
Summary:
QB50 has the scientific objective to study in situ the temporal and spatial variations of a number of key constituents and parameters in the lower thermosphere (90-320 km) with a network of about 40 double CubeSats, separated by a few hundred kilometres and carrying identical sensors. QB50 will also study the re-entry process by measuring a number of key parameters during re-entry and by comparing predicted and actual CubeSat trajectories and orbital lifetimes.
Duration:
2012-2016
Partners:
von Karman Institute for Fluid Dynamics (VKI) and other institutes from about 40 diffrent countries
Researchers from the FTS:
Vojin Šenk, Veljko Malbaša, Stevan Stankovski, Gordana Ostojić, Milan Lukić, Predrag Teodorović, Ivana Šenk, Nenad Teofanov, Aleksandar Minja, Veljko Karadžić, Ivan Djermanović, Aleksandar Nikolić
Equipment purchased from project funds:
-

Naziv projekta Sedmog okvirnog programa (FP 7):
ENHANCED MULTICARRIER TECHNIQUES FOR PROFESSIONAL AD-HOC AND CELL-BASED COMMUNICATIONS
Oznaka projekta / akronim:
EMPhAtiC
Web:
www.ict-emphatic.eu
Rukovodilac projekta:
Centre Tecnològic de Telecomunicacions de Catalunya, Spanija
Rukovodilac projekta sa FTN:
Slobodan Nedic
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Primenjena i razvojna
Opis projekta:
Cilj projekta je da razvije, evaluira i demonstrira osobine paralelnog prenosa u smislu boljeg korišćenja postojecih frekvencijskih opsega za obezbedjivanje širokopojasnog prenosa podataka u koegzistenciji sa postojećim uskopojasnim servisima. Projekat se odnosi na primenu Profesionalniom Mobilnom Radiju (PMR), i posebno na evoluciju sistema za javnu zastitu i oporavak u slučaju katastrofalnih situacija, koji trenutno koristi TETRA ili druge standardizovane ili privatne sisteme za govorne i servise prenosa podataka niskim brzinama. Osnovni naglasak je na skorišćenju talasnih oblika koji odgovaraju paralelnom prenosu na osnovu filtarsih banki, za efikasno korišćenje fragmentiranog spektra u heterogenom okruženju. Sržna ideja je razvoj multimodne radio platforme na osnovu felksibilne filtarske banke za modulaciju i detekciju vise različitih signala istovremeno, sa podešljivim centralnim frekvencijama i rastojanjima izmedju potkanala, odnosno njihovim širinama. Poboljsana OFDM resenja su takodje namenjena eventualnom usvajanju u okviru standardizacije sistema mobilne telefonije najnovije generacije (LTE). Pored fizičkog nivoa, biće razmatran i MAC nivo, a takodje i korišćenje MIMO relejnih tehnika. Konzorcijum ima veliko iskustvo u dizajniranju TETRA sistema, kao i vrlo dobre rezultate u razvoju sistema za paralelni prenos podataka na osnovu filtarskih banki, te stoji u uverenju da će razvijeni sistemi i njihova implementacija biti dobra osnova za predlaganje i uvodjenje znatno poboljšanih sistema za PMR i 3GPP evoluciju.
Trajanje projekta:
30 meseci, od septembra 2012. do marta 2014.
Institucije učesnici / partneri:
CTTC - Centre Tecnològic de Telecomunicacions de Catalunya, Spanija, CNAM - Conservatoire National des Arts et Métiers, Francuska, TTY-SAATIO (operating as Tampere University of Technology), Finska, TUM - Technical University of Munich, Nemacka, UCL - Université Catholique de Louvain, Belgija, CTI - Computer Technology Institute & Press "Diophantus, Grcka, ITU - Ilmenau University of Technology, Nemacka, SINTEF - Stiftelsen SINTEF, Norveska, UNS – Faculty of Technical Science university of Novi Sad, Srbija, CASSIDIAN – Francuska, TCS - Thales Communications & Security, Francuska, Bitgear – Srbija, Magister - Finska
Učesnici –istraživači sa FTN:
Sladjana Josilo, Vladimir Stanivuk, Branko Djordjevic, Mulos Pejovic, Milan Narandzic
Oprema nabavljena iz projektnih sredstava:
Nije bilo predvidjeno projektom.

EU's Seventh Framework Programme (FP7) project – Title:
ENHANCED MULTICARRIER TECHNIQUES FOR PROFESSIONAL AD-HOC AND CELL-BASED COMMUNICATIONS
Project code / acronym:
EMPhAtiC
Web site:
www.ict-emphatic.eu
Grantholder
Centre Tecnològic de Telecomunicacions de Catalunya, Spanija
Coordinator FTS:
Slobodan Nedic
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Applied and Development
Summary:
The objective of EMPhAtiC is to develop, evaluate and demonstrate the capability of enhanced multicarrier techniques to make better use of the existing radio frequency bands in providing broadband data services in coexistence with narrowband legacy services. The project will address the Professional Mobile Radio (PMR) application, and in particular the evolution of the Public Protection & Disaster Relief (PPDR) service currently using TETRA or other legacy systems for voice and low-speed data services. Both cell-based and ad-hoc networking solutions are needed for PPDR and will be developed. Our main emphasis is on filterbank based multicarrier (FB-MC) and single-carrier (FB-SC) waveforms for utilizing effectively the available fragmented spectrum in such heterogeneous environments. The core idea is to develop a multi-mode radio platform, based on variable filter-bank processing, which is able to perform modulation/detection functions simultaneously for different signal formats with adjustable centre frequencies, bandwidths and subchannel spacings. SC-FDMA waveforms are included in the study in order to relax the transmitter power amplifier requirements of mobile terminals. Enhanced OFDM solutions are also considered as alternatives aiming at minimal modifications to the 3GPP LTE standard, which serves as the reference system in the studies. In addition to physical layer functionalities, the project also develops MIMO and MAC-layer techniques, as well as relay networking solutions which are compatible and maximize the benefits of the waveform level solutions. The EMPhAtiC consortium has a strong expertise in the design of practical TETRA and ETSI BRAN systems and a very good track record in the development of FB-MC and FB-SC data transmission systems. We believe that the design of FB-MC schemes facilitating flexible and efficient multi-access spectrum usage, along with a proof of concept implementation, form the necessary basis for proposing better next generation broadband data solutions for the PMR evolution and other applications, including the 3GPP LTE evolution.
Duration:
September 2012 - March 2014
Partners:
CTTC - Centre Tecnològic de Telecomunicacions de Catalunya, Spanija, CNAM - Conservatoire National des Arts et Métiers, Francuska, TTY-SAATIO (operating as Tampere University of Technology), Finska, TUM - Technical University of Munich, Nemacka, UCL - Université Catholique de Louvain, Belgija, CTI - Computer Technology Institute & Press "Diophantus, Grcka, ITU - Ilmenau University of Technology, Nemacka, SINTEF - Stiftelsen SINTEF, Norveska, UNS – Faculty of Technical Science university of Novi Sad, Srbija, CASSIDIAN – Francuska, TCS - Thales Communications & Security, Francuska, Bitgear – Srbija, Magister - Finska
Researchers *from the FTS:*
Sladjana Josilo, Vladimir Stanivuk, Branko Djordjevic, Mulos Pejovic, Milan Narandzic
Equipment purchased from project funds:
Was not proposed in the project proposal.

Naziv projekta Sedmog okvirnog programa FP 7:
VIDEO QUALITY DRIVEN MULTIMEDIA STREAMING IN MOBILE WIRELESS NETWORKS
Oznaka projekta / akronim:
295220 / QoSTREAM
Web:
www.qostream.org
Rukovodilac projekta:
Doc. dr Dubravko Ćulibrk
Rukovodilac projekta sa FTN:
Doc. dr Dubravko Ćulibrk
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Informacione i komunikacione tehnologije /primenjena
Opis projekta:
Cilj projekta QoSTREAM, kao FP7 Mari Kiri IRSES projekta, je da kroz razmenu istraživačkog kadra ojača postojeće i stvori nove veze između internacionalnih partnera koji na projektu učestvuju. U okviru opširnog programa razmena koji je finansiran sa 360,000 eura od strane EU, našim istraživačima će biti sufinansirane posete stranim partnerima (partnerima van Evrope) i posete njihovih istraživača FTN-u i evropskim partnerima. Tokom ovih poseta će se istraživati kompleksna problematika dostavljanja videa putem bežičnih mreža sa stanovištva kvaliteta iskustva koje korisnik takve telekomunikacione usluge proživljava.
Trajanje projekta:
2012. – 2016.
Institucije učesnici / partneri:
FTN, Novi Sad; École Polytechnique Fédérale De Lausanne, Švajcarska; University of Strathclyde, Velika Britanija; Florida Atlantic University, SAD; Texas A&M University, SAD; National Institute of Informatics, Japan; Universidade Tecnológica Federal do Parana, Brazil; Stellenbosch University, Južna Afrika;
Učesnici –istraživači sa FTN
Dubravko Ćulibrk, Vladimir Crnojević, Dejan Vukobratović, Čedomir Stefanović, Milan Mirković, Katarina Gavrić, Srdjan Sladojević, Branko Brkljač, Marko Panić
Oprema nabavljena iz projektnih sredstava
Projekat ne pokriva nabavku opreme.

EU's Seventh Framework Programme (FP7) project – Title:
VIDEO QUALITY DRIVEN MULTIMEDIA STREAMING IN MOBILE WIRELESS NETWORKS
Project code / acronym:
295220 / QoSTREAM
Web site:
www.qostream.org
Grantholder
Assistant professor Dr. Dubravko Ćulibrk
Coordinator FTS:
Assistant professor Dr. Dubravko Ćulibrk
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
ICT / Applied
Summary:
QoSTREAM - Video Quality Driven Multimedia Streaming in Mobile Wireless Networks is an FP7 Marie Curie International Research Staff Exchange Scheme (IRSES) project. The project started on February 1st 2012 and will last for four years. Main objective of QoSTREAM is to establish new partnerships and to reinforce already existing paths of cooperation between participating European and non-European research institutions through a coordinated multi annual joint research programme in the field of multimedia processing/communications and quality of experience for real-time multimedia streaming applications over emerging wireless networks. Due to complementary expertise of the chosen participating institutions, enhanced efficiency of multimedia delivery schemes in this research programme will be pursued through the inter-disciplinary combination of: i) applications of state-of-the-art multimedia processing and compression schemes such as scalable video coding, multi-view video coding, texture plus depth coding, distributed video coding, region of interest coding, network-aware video coding, multipath video, error resilience, network-adaptive media, video analysis; ii) advanced communication techniques such as fountain coding, network coding, source-aware resource allocation, packet scheduling and prioritization; and iii) light-weight video quality assessment algorithms suitable for implementations embedded in all sorts of mobile receivers; all of these contributing to practical and optimal system design. The project brings together leading and complementary research teams in Europe and in Brazil, Japan, South Africa and USA in the field of multimedia processing and compression, communications and networking, video quality assessment and user experience enhancement, machine learning and embedded system design. All are willing to share their expertise and accumulated knowledge.
Duration:
2011-2015
Partners:
Faculty of Technical Sciences, University of Novi Sad; École Polytechnique Fédérale De Lausanne, Switzerland ; University of Strathclyde, United Kingdom; Florida Atlantic University, USA; Texas A&M University, USA; National Institute of Informatics, Japan; Universidade Tecnológica Federal do Parana, Brazil; Stellenbosch University, South Africa
Researchers from the FTS:
Dubravko Ćulibrk, Vladimir Crnojević, Dejan Vukobratović, Čedomir Stefanović, Milan Mirković, Katarina Gavrić, Srdjan Sladojević, Branko Brkljač, Marko Panić
Equipment purchased from project funds:
The project does not cover equipment costs.

Naziv projekta Sedmog okvirnog programa FP 7:
BALKAN GEO NETWORK – KA UKLJUČENJU BALKANSKIH ZEMALJA U GLOBALNE INICIJATIVE ZA OSMATRANJE ZEMLJE
Oznaka projekta / akronim:
BalkanGEONet
Web:
www.balkanGEO.net
Rukovodilac projekta:
UNS – BioSense center
Rukovodilac projekta sa FTN:
Prof. dr Vladimir Crnojević
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Zaštita životne sredine – razvnojni projekat
Opis projekta:
Uključenje svih balkanskih zemalja u GEO i njihov doprinos sistemu GEOSS od velike je važnosti s obzirom na činjenicu da samo sveobuhvatna inicijativa osmatranja Zemlje može voditi boljem razumevanju i korišćenju prirodnih resursa, povećanom kvalitetu života i bržem ekonomskom razvoju. Važnost i koristi od učešća u globalnim inicijativama osmatranja Zemlje već su prepoznate od nekoliko balkanskih zemalja. Ipak, veliki broj zemalja još uvek nije pristupio GEO inicijativi. Ciljevi ovog projekta jesu da identifikuje postojeće provajdere i korisnike podataka o Zemlji u široj regiji Balkana, da odredi njihov status, potencijale i potrebe, kao i da koordinira učesnike kroz uspostavljanje komunikacija i mreže među njima. Opsežna analiza nedostataka i komplementarnosti EO inicijativa u regiji sa naglaskom na potrebe korisnika u specifičnim kontekstima biće realizovana u regiji Balkana. Konzorcijum projekta pažljivo je sastavljen tako da uključi ključne činioce kako iz sektora provajdera podataka o osmatranju Zemlje, tako i korisnika istih podataka iz svih balkanskih zemalja. Učesnici iz ostalih EU zemalja takođe su uključeni u projekat kako bi omogućili jasnu identifikaciju mehanizama za poboljšanje, razvoj i koordinaciju izgradnje kapaciteta u regiji, kao i da osiguraju da rezultati projekta budu usklađeni sa SEIS i ISIE inicijativama. Glavni rezultatati projekta biće formiranje trajnog sistema za umrežavanje partnera PNF, razvoj putokaza i preporuka za aktivno, koordinirano i održivo učešće svih balkanskih zemalja u globalnim inicijativama za osamtranje Zemlje. Ovi rezultati će takođe predstavljati doprinos GEO zadatku CB-09-03 „Building Institutional Capacity to Use EO", a posebno delu CB-09-03b „Establishing Regional Capacity Building Networks".
Trajanje projekta:
3 godine
Institucije učesnici / partneri:
University of Novi Sad, Jozef Stefan Institute, Joanneum Research, IRIDA Labs Ltd, University of Split, Geonardo Environmental Technologies Ltd, Environment Agency Austria, International Institute for Applied Systems Analysis, Ghent University, Romanian Space Agency, Provincial Secretariat for Agriculture, Water Economy and Forestry Faculty of Agriculture and Food Science, University of Sarajevo University of Montenegro, Polytechnic University of Tirana, Balkan Foundation for Sustainable Development, Geophysical Institute – Bulgarian Academy of Sciences
Učesnici –istraživači sa FTN
Vladimir Crnojevic, Vesna Crnojevic – Bengin, Boris Antic
Oprema nabavljena iz projektnih sredstava
-

EU's Seventh Framework Programme (FP7) project – Title:
BALKAN GEO NETWORK – TOWARDS INCLUSION OF BALKAN COUNTRIES INTO GLOBAL EARTH OBSERVATION INITIATIVES
Project code / acronym:
BalkanGEONet
Web site:
www.balkanGEO.net
Grantholder:
UNS – BioSense center
Coordinator FTS:
Prof. dr Vladimir Crnojevic
Scientific Research Fields / Type of research (Fundamental / Applied / Development):
Environmental science / Development
Summary:
Inclusion of all Balkan countries into GEO and their contribution to GEOSS is of great importance, since only a comprehensive EO framework can lead to better understanding and more intelligent utilization of the environmental resources, increased quality of life and faster economic development. The importance and benefits from participation in global EO initiatives have already been recognized by several Balkan countries. However, a great number of Balkan countries are still not members of GEO. This project aims to identify existing EO-data providers and users in the wider Balkan region, to determine their status, potentials and needs, and to coordinate EO players by establishing proper interfaces and networking between them. A broad analysis of gaps and complementarities of EO activities within the region will be performed, with the emphasis on user needs in the specific context of the Balkan region. The consortium has been carefully constituted to include key players both from EO-data provider and EO-data user communities, from all Balkan countries. Participants from other EU countries are also included to allow straightforward identification of mechanisms for leveraging, developing and coordinating EO capacity building initiatives in the region, and to ensure that the Project outcomes will be in line with the currently designed Shared Environmental Information System and with Infrastructure for Spatial Information in Europe. Main outcomes of the Project will be the creation of a permanent web-based networking facility, and the design of roadmaps and recommendations for an active, coordinated and sustained participation of all Balkan countries in global EO initiatives. These outcomes will also present a contribution to GEO task CB-09-03 „Building Institutional Capacity to Use EO" and specifically to subtask CB-09-03b „Establishing Regional Capacity Building Networks".
Duration:
3 years
Partners:
University of Novi Sad, Jozef Stefan Institute, Joanneum Research, IRIDA Labs Ltd, University of Split, Geonardo Environmental Technologies Ltd, Environment Agency Austria, International Institute for Applied Systems Analysis, Ghent University, Romanian Space Agency, Provincial Secretariat for Agriculture, Water Economy and Forestry Faculty of Agriculture and Food Science, University of Sarajevo University of Montenegro, Polytechnic University of Tirana, Balkan Foundation for Sustainable Development, Geophysical Institute – Bulgarian Academy of Sciences
Researchers from the FTS:
Vladimir Crnojevic, Vesna Crnojevic – Bengin, Boris Antic
Equipment purchased from project funds:
-

Naziv projekta Sedmog okvirnog programa FP 7:
MENADŽMENT EKOLOŠKE OPTIMIZACIJE NAVODNJAVANJA SA KOMBINOVANOM UPOTREBOM I INTEGRACIJOM VISOKE PRECIZNOSTI SATELITSKIH PODATAKA, NAPREDNIM MODELOVANJEM, KONTROLOM PROCESA I POSLOVNIM INOVACIJAMA
Oznaka projekta / akronim:
ENORASIS
Web:
http://www.enorasis.eu/
Rukovodilac projekta:
DRAXIS Ltd.
Rukovodilac projekta sa FTN:
Prof. dr Vladimir Crnojević
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Zaštita životne sredine – Poljoprivreda/Razvojna
Opis projekta:
Glavni cilj ENORASIS-a je razvoj inteligentnog, integrisanog sistema za podršku pri odlučivanju. ENORASIS zapravo ima za cilj da motiviše poljoprivrednike da prilikom navodnjavanja racionalizuju i optimizuju potrošnju vode i time ostvare uštedu, kao i da pruži vodoprivrednim organicaijama inteligentne alate i servise za efikasnu prognozu i upravljanje resursima, omogućavajući da se naplata korisnicima (poljoprivrednicima) vrši na osnovu inteligentnog sistema, putem motivacije i podsticaja baziranih na tražnji. ENORASIS će razviti i integrisati set naprednih tehnologija, metodologija i modela u oblasti: sistema vremenskog predviđanja koji iskorišćava satelitska zapažanja i napredne hidrološke modele, tehnike optimiziacije za navodnjavanje; pametne sisteme za navodnjavanje kako bi se došlo do rešenja koje će biti jednostavno za korišćenje od strane poljoprivrednika i koji će biti dovoljno fleksibilni za korišćenje od strane organizacija za navodnjavanje; bežične senzorske mreže (rad sa solarnom energijom) kao ključna pokretačka tehnologija za terenska merenja i nadzor uslova. Takvo inteligentno upravljanje navodnjavanjem i punjenje sistema, očekuje se da će imati veliki uticaj na usvajanje održive prakse upravljanja vodama za navodnjavanje u poljoprivredi in a taj način doprineti zaštiti životne sredine i uštedeti troškove svih strana uključenih u poljoprivrednu ekonomiju. ENORASIS projekat će biti realizovan u periodu od 36 meseci od strane multidisciplinarnog i dobro izbalansiranog konzorcijum od 13 partnera, uključujući i akademske partnere, istraživačke centre i institute, mala i srednja preduzeća kao i krajnje korisnike (organizacije vodoprivrede).
Trajanje projekta:
Januar 2012. - Decembar 2014.
Institucije učesnici / partneri:
Draxis Environmental S.A., Rheinisches Institut fuer umwelt-forschung an der Universitaet zu Koeln E.V., Instytut Urawy Nawozenia i Gleboznawstwa, Panstwowy Instyut Badawczy, Noveltis SAS, Univerzitet u Novom Sadu Fakultet tehničkih nauka, Imaxdi Real Innovation S.L., The Cyprus Research and Educational Foundation, University of Patras, Scuola Universitaria Professionale della Svizzera Italina (SUPSI), Teknoset Bilgisayar Yazilim ve Danismanlik Hizmetleri Sanayive limited Sirketi, Unisoft Romania SA, Intetrnational Environment and Quality Services North Greece LTD, Javno vodoprivredno preduzeće vode Vojvodine Novi Sad
Učesnici –istraživači sa FTN:
Vladimir Crnojevic, Dejan Vukobratovic, Dubravko Culibrk, Vesna Crnojevic – Bengin, Vladan Minic, Nikolina Jankovic
Oprema nabavljena iz projektnih sredstava:
Uređaj za merenje vlažnosti zemljišta, GPRS metereološka stanica, kamera visoke rezolucije sa GPS-om

EU's Seventh Framework Programme (FP7) project – Title:
ENVIRONMENTAL OPTIMIZATION OF IRRIGATION MANAGEMENT WITH THE COMBINED USE AND INTEGRATION OF HIGH PRECISION SATELLITE DATA, ADVANCED MODELING, PROCESS CONTROL AND BUSINESS INNOVATION
Project code / acronym:
ENORASIS
Web site:
http://www.enorasis.eu/
Grantholder:
DRAXIS Ltd.
Coordinator FTS:
Prof. Dr. Vladimir Crnojević
Scientific Research Fields / Type of research (Fundamental / Applied / Development):
Environmental Science – Agriculture / Development
Summary:
The overall aim of ENORASIS is to develop an intelligent, integrated Decision Support System (ENORASIS Service Platform and Components) for environmentally optimised and, thus, sustainable irrigation management by farmers and water management organisations. ENORASIS system will actually target to motivate irrigation farmers to optimize the use of water, whereas it will also provide to (irrigation) water management organizations intelligent tools and services to effectively forecast and manage irrigation water resources, cover irrigation demand and charge customers (farmers) on the basis of an intelligent system of motives and incentives that exploits irrigation demand side fluctuations. To achieve so, ENORASIS will develop and integrate a bouquet of advanced technologies, methodologies and models in the fields of: (i) weather prediction systems that exploit satellite observations and advanced hydrology models; (ii) irrigation optimization techniques and (iii) smart card irrigation systems in order to arrive at a solution that will be easy to use for farmers and that will be flexible and robust enough for its use by irrigation water management organizations; and (iv) wireless sensor networks (functioning with solar energy) as key enabling technology for field measurements and monitoring conditions. Such an intelligent irrigation management and charging system is expected to have a major impact towards the adoption of more sustainable irrigation water management practices in agriculture and thus, increased environmental protection and costs savings for all stakeholders involved in agricultural economy. Finally, the ENORASIS project will be implemented over a period of 36 months by a multi-disciplinary and well-balanced consortium of 13 partners, including academic partners, research centres & institutes, SMEs as well as end-users (water management organisation).
Duration:
January 2012. - December 2014.
Partners:
Draxis Environmental S.A., Rheinisches Institut fuer umwelt-forschung an der Universitaet zu Koeln E.V., Instytut Urawy Nawozenia i Gleboznawstwa, Panstwowy Instyut Badawczy, Noveltis SAS, Univerzitet u Novom Sadu Fakultet tehničkih nauka, Imaxdi Real Innovation S.L., The Cyprus Research and Educational Foundation, University of Patras, Scuola Universitaria Professionale della Svizzera Italina (SUPSI), Teknoset Bilgisayar Yazilim ve Danismanlik Hizmetleri Sanayive limited Sirketi, Unisoft Romania SA, Intetrnational Environment and Quality Services North Greece LTD, Javno vodoprivredno preduzeće vode Vojvodine Novi Sad
Researchers from the FTS:
Vladimir Crnojevic, Dejan Vukobratovic, Dubravko Culibrk, Vesna Crnojevic – Bengin, Vladan Minic, Nikolina Jankovic
Equipment purchased from project funds:
Soil moisture, GPRS enabled meteo Stations, GPS enabled HiRes Camera

Naziv projekta Sedmog okvirnog programa FP 7:
DESIGN, ANALYSIS AND APPLICATIONS OF NOVEL INFORMATION PROCESSING PARADIGMS FOR MULTIMEDIA TRANSMISSION IN NEXT GENERATION WIRELESS NETWORKS
Oznaka projekta / akronim:
MMCODESTREAM
Web:
/
Rukovodilac projekta:
Prof. Dr Vojin Senk
Rukovodilac projekta sa FTN:
Prof. Dr Vojin Senk
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Primenjena
Opis projekta:
Prenos multimedijalnog sadržaja kao što su visoko-kvalitetna slika, audio ili video postali su deo svakodnevnog života, kako za poslovne potrebe tako i za zabavu. Kako se mobilnost korisnika i njegove potrebe za multimedijalnim sadržajem dostupnim uvek i svuda povećavaju, multimedijalne aplikacija kao što su video streaming, mobilna TV, video-konferencije, multimedijalno peer-to-peer umrežavanje, druženje u socijalnim mrežama sa multimedijalnim sadržajem, interaktivne igre, itd postaju veliki potrošač propusnog opsega na, mobilnim uređajima i da su, kako je naznačeno u mnogim najnovijim studijama, glavni pokretački faktor za sledeću generaciju mobilnih mreža. To je vidljivo ne samo u korisničkoj opremi kao što su smart telefoni i tableti, za koje veličina ekrana i rezolucija neprekidno raste I ograničena je samo sa udobnosti pri upotrebi uređaja, nego i u razvoju četvrte generacije mobilnih ćelijskih sistema za bežični prenos podataka kao što su mobilni WiMax (IEEE 802.16e - 2009) i 3GPP LTE - Advanced koji imaju za cilj da obezbede velike protoke dovoljne za kvalitetno konzumiranje mobilnih multimedijalnih servisa. Nedavno uvedena tehnika za obradu informacija poznata kao mrežno kodovanje otvara nov spektar mogućnosti za poboljšanje performansi mreže u smislu protoka, pouzdanosti i kašnjenja. Međutim , iako obično obezbeđuje veći propusni opseg, brojni problemi se javljaju pri pokušaju uspešne integracije principa mrežnog kodovanje u multimedijalnim komunikacijama u sadašnjim bežičnim komunikacionim sistemima. Ovaj projekat ima za cilj da analizira I ponudi rešenje za probleme dizajna efikasnih šema mrežnog kodovanja za isporuku skalabilnog multimedijalnog sadržaja u bežičnim mrežama. Cilj ovog projekta je i da obezbedi rigorozne teorijske rezultate kao i praktične sistemske metode mrežnog kodovanja primenjenog na skalabilan multimedijalni prenosa u bežičnim širokopojasne sisteme nove generacije.
Trajanje projekta:
36 meseci.
Institucije učesnici / partneri:
Dr Vladimir Stankovic, Department of Electrical and Electronic Engineering, University of Strathclyde, G1 1XW Glasgow, UK Prof. John Thompson, School of Engineering, The University of Edinburgh, EH9 3JL, Edinburgh, UK Prof. Petar Popovski, Aalborg University, Niels Jernej Vej 10, 9220, Aalborg, Denmark Prof. Romano Fantacci, Department of Electronics and Telecommunications, Univeristy of Florence, Italy Dr Thomas Schierl, Multimedia Communications Group, Fraunhofer HHI Berlin, Germany Dr David Gomez Barquero, UPV-iTeam, Universita Politecnica Valencia, Valencia, Spain
Učesnici – istraživači sa FTN:
Docent Dr Dejan Vukobratovic
Oprema nabavljena iz projektnih sredstava:
Nema

EU's Seventh Framework Programme (FP7) project – Title
DESIGN, ANALYSIS AND APPLICATIONS OF NOVEL INFORMATION PROCESSING PARADIGMS FOR MULTIMEDIA TRANSMISSION IN NEXT GENERATION WIRELESS NETWORKS
Project code / acronym:
MMCODESTREAM
Web site:
/
Grantholder:
Prof. Dr Vojin Senk
Coordinator from the Faculty of Technical Sciences:
Prof. Dr Vojin Senk
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Applied
Project Summary:
Communicating multimedia content such as high-quality images, audio or video streams became a part of everyday life both for the purpose of business and entertainment. As user mobility and need for multimedia content available anytime and anywhere increases, multimedia applications such as video streaming, mobile TV, video-conferencing, multimedia peer-to-peer networking, social networking with multimedia content, interactive gaming, etc., are becoming a major bandwidth consumer on small, handheld, mobile devices and are indicated in many recent studies as a major driving factor for the next generation mobile broadband technologies. This is evident both in the user equipment such as smart phones, portable digital assistants and tablets, for which the screen size and resolution is everincreasing and constrained only with the comfort of the device usage, as well as in the development of the fourth generation high-speed wireless data interfaces such as Mobile WiMax (IEEE 802.16e-2009) and 3GPP LTE-Advanced that aim to provide sufficient data rates for comfortable high-quality mobile multimedia services. Recently introduced groundbreaking information-processing paradigm called network coding opens a novel set of possibilities for improvements of network performance in terms of throughput, reliability and delay. However, even though it usually provides more bandwidth, a number of problems arise in successful integration of network coding principles into multimedia communications in current wireless communication systems. This proposal aims to address the problem of design of efficient network coding schemes for scalable multimedia delivery in wireless networks. The goal of this project is to provide both rigorous theoretical and realistic system-level investigation of network coded scalable multimedia transmission in emerging wireless broadband systems.
Duration of the project:
36 months
Partners:
Dr Vladimir Stankovic, Department of Electrical and Electronic Engineering, University of Strathclyde, G1 1XW Glasgow, UK Prof. John Thompson, School of Engineering, The University of Edinburgh, EH9 3JL, Edinburgh, UK Prof. Petar Popovski, Aalborg University, Niels Jernej Vej 10, 9220, Aalborg, Denmark Prof. Romano Fantacci, Department of Electronics and Telecommunications, Univeristy of Florence, Italy Dr Thomas Schierl, Multimedia Communications Group, Fraunhofer HHI Berlin, Germany Dr David Gomez Barquero, UPV-iTeam, Universita Politecnica Valencia, Valencia, Spain
Researchers from the FTS:
Dr Dejan Vukobratovic
Equipment purchased from the project funds:
None.

Naziv projekta Sedmog okvirnog programa (FP 7):
MULTIBAND ELECTRONICALLY RECONFIGURABLE MICROWAVE DEVICES AND ANTENNAS FOR A NEW GENERATION OF WIRELESS SYSTEMS
Oznaka projekta / akronim:
MultiWaves
Web:
http://www.biosense.uns.ac.rs/
Rukovodilac projekta:
Vesna Crnojević-Bengin
Rukovodilac projekta sa FTN:
Vesna Crnojević-Bengin
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
osnovna / primenjena / razvojna
Opis projekta:
Ovaj projekat ima za cilj uspostavljanje novih partnerstava i jačanje već postojećih veza između dva evropske i tri ne-evropske istraživačke institucije, kroz struktuiran program razmene istraživača i koordinirane višegodišnjeg zajedničkog istraživačkog programa u oblasti Multiband elektronskih mikrotalasnih uređaja i antena. Institucije učesnice iz Srbije, Velike Britanije, Rusije, Južne Afrike i SAD, izabrne za različitosti u njihovoj stručnosti i istraživačkim pristupima, priznate širom sveta kao lideri u oblasti istraživanja i inovacija . Širok opseg i dubina znanja akumuliranog u konzorcijumu nudi jedinstvenu priliku za razmenu istraživača i razmenu najsavremenijih istraživanja pod mentorstvom iskusnih starijih istraživača . Glavni tehnički cilj zajedničkog istraživačkog programa je da podstakne primenu novih tehnologija i doprinese razvoju jeftinih, minijaturnih, podesivih mikrotalasnih uređaja i antena za buduće multifunkcione bežične sisteme. Osnovni ciljevi istraživanja su : - Razvoj kompaktnih mikrotalasnih uređaja i antena sa više opsega učestanosti, - Razvoj i primena novih materijala kao što su veštački metamaterijali - Primene fraktalnih krivih u dizajnu kompaktnih i Multiband uređaja zbog svojstva multimode rada , - Razvoj efikasnih metoda elektromagnetne analize i optimizacija alata za Multiband uređaje - Razvoj microfabrication tehnika koje koriste višeslojna tehnologija (LTCC i debeloslojnu tehologiju) , Ferroelectrics i superprovodne tehnologije.
Trajanje projekta:
01.04.2010-31.03.3014
Institucije učesnici / partneri:
1. Heriot-Watt University, Department of Electrical Electronic and Computer Engineering, Velika Britanija 2. St. Petersburg Electrotechnical University LETI, Dept. Microelectronics & Radio Engineering, Russia 3. Stellenbosch University, Department of Electrical and Electronic Engineering, South Africa 4. University of Pennsylvania, School of Engineering and Applied Science, USA
Učesnici – istraživači sa FTN:
dr Vesna Crnojević Bengin, dr Vladimir Crnojević, dr Milan Secujski, dr Vasa Radonić, Nikolina Janković, Goran Kitić, Slobodan Birgermajer, Norbert Čeljuska
Oprema nabavljena iz projektnih sredstava:
Nema

EU's Seventh Framework Programme (FP7) project – Title:
MULTIBAND ELECTRONICALLY RECONFIGURABLE MICROWAVE DEVICES AND ANTENNAS FOR A NEW GENERATION OF WIRELESS SYSTEMS
Project code / acronym:
MultiWaves
Web site:
http://www.biosense.uns.ac.rs/
Grantholder:
Vesna Crnojević-Bengin
Coordinator from the Faculty of Technical Sciences:
Vesna Crnojević-Bengin
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Fundamental / Applied / Development
Project Summary:
This project aims at establishing new partnerships and reinforcing already existing ones between two European and three non-European research institutions, through a structured programme of exchange of researchers and coordinated multiannual joint research programme in the field of multiband electronically reconfigurable microwave devices and antennas. The participating institutions from Serbia, United Kingdom, Russia, South Africa and USA, chosen for the diversity in their respective expertise and research approaches, are recognized world-wide as leaders in research and innovation. The wide scope and depth of the knowledge accumulated in the consortium offers a unique opportunity for exchanged researchers to undertake cutting-edge research under mentorship of experienced senior researchers. The main technical goal of the joint research programme is to encourage the application of emerging technologies and result in the development of low-cost miniature tunable and reconfigurable microwave devices and antennas for future multifunctional wireless systems. Main research targets are: - development of compact microwave devices and antennas with multiple functionalities, - development and applications of novel artificially structured materials like metamaterials, controllable electromagnetic band gap materials, nano-foam materials and reconfigurable metamaterials, - applications of fractal curves in the design of compact and multiband devices due to their inherent multimode operation, - development of computationally efficient electromagnetic analysis and optimization tools for multiband reconfigurable devices - development of low-cost microfabrication techniques using multi-layer technology (LTCC and Thick-Film), ferroelectrics and superconducting technologies.
Duration of the project:
01.04.2010-31.03.3014
Partners:
1. Heriot-Watt University, Department of Electrical Electronic and Computer Engineering, Velika Britanija 2. St. Petersburg Electrotechnical University LETI, Dept. Microelectronics & Radio Engineering, Russia 3. Stellenbosch University, Department of Electrical and Electronic Engineering, South Africa 4. University of Pennsylvania, School of Engineering and Applied Science, USA
Researchers from the FTS:
dr Vesna Crnojević Bengin, dr Vladimir Crnojević, dr Milan Secujski, dr Vasa Radonić, Nikolina Janković, Goran Kitić, Slobodan Birgermajer, Norbert Čeljuska
Equipment purchased from the project funds:
No

Naziv projekta Sedmog okvirnog programa (FP 7):
FP7-REGPOT-2012-2013-1 PROJECT INNOSENSE - REINFORCEMENT OF BIOSENSE CENTER – ICT FOR SUSTAINABILITY AND ECO-INNOVATION
Oznaka projekta / akronim:
InnoSense
Web:
http://www.biosense.uns.ac.rs
Rukovodilac projekta:
Vesna Crnojević – Bengin
Rukovodilac projekta sa FTN:
Vesna Crnojević – Bengin
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Osnovna primenjena i razvojna istraživanja
Opis projekta:
Vizija BioSense Centra je da postane međunarodno priznati multidisciplinarni istraživački centar i provajder naprednih ICT rešenja za prikupljanje i obradu podataka za upravljanje prirodnim resursima . Glavni cilj ovog predloga je da se podstakne budući razvoj BioSense Centra , na osnovu svoje 3 godine razvojne strategije, rezultati prepreka Analiza potencijala Centra, i rezultatima SVOT analize. Predlog ima za cilj da ojača kako istraživanje i inovacije Centra za podršku u okviru sinergije i da se doprinese smanjenju odliva mozgova, napredovanju infrastrukture (i istraživanje i upravljanje) i de se povećaju eko - inovacione performanse Centra. Identifikovani prednosti BioSense Centra, u kombinaciji sa ojačanim aktivnostima u ovom projektu, će pomoći u prevazilaženju uočenih slabosti. Da biste to postiglo, InnoSense će se realizovati kroz sedam snažno međusobno povezanih radnih paketa (PP1 - VP7) u periodu od 42 meseci, i to: PP1: upravljanje projektom, VP2: zapošljavanje novih stručnjaka, PP3 : Kupovina opreme, VP4 rada: prava intelektualne Imovina i inovacije kapaciteta , VP5: Plasmani i obuke, VP6: Širenje i umrežavanje, i VP7 : Ek-post evaluacija. InnoSense je mono podnosilac predloga . Međutim, 20 institucije (instituti, privatna preduzeća, državne institucije, itd) širom Evrope pružaju podršku za ovaj predlog i da će se aktivno uključiti u realizaciju projekta i prenesu svoje znanje i stručnost u BioSense centru.
Trajanje projekta:
3.5 godina (01.03.2013 - 31.08.2016.)
Institucije učesnici / partneri:
1. Institute of Sensor and Actuator Systems, Department of Applied Electronic Materials, Vienna University of Technology, Vienna, Austria 2. Institute of Microwave Systems, Faculty of Electrical Engineering and Information Technology, Ruhr-University Bochum, Bochum, Germany 3. Agricultural University of Athens, Athens, Greece 4. Ghent University, Research group Image Processing and Interpretation 5. Institute of Food and Resource Economics, Faculty of Life Sciences, University of Copenhagen, Copenhagen, Denmark 6. GIS and Remote Sensing Laboratory (LAST) at Doñana Biological Station, Spain
Učesnici – istraživači sa FTN:
dr Vesna Crnojević Bengin, dr Vladimir Crnojević, dr Dejan Vukobratović, dr Tatjana Loncar Turukalo, dr Milan Secujski, dr Vasa Radonić
Oprema nabavljena iz projektnih sredstava:

EU's Seventh Framework Programme (FP7) project – Title:
FP7-REGPOT-2012-2013-1 PROJECT INNOSENSE - REINFORCEMENT OF BIOSENSE CENTER – ICT FOR SUSTAINABILITY AND ECO-INNOVATION
Project code / acronym:
InnoSense
Web site:
http://www.biosense.uns.ac.rs
Grantholder:
Vesna Crnojević – Bengin
Coordinator from the Faculty of Technical Sciences:
Vesna Crnojević – Bengin
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Fundamental, Applied, Development
Project Summary:
The vision of BioSense Center is to become an internationally recognized multidisciplinary research center and a key provider of advanced ICT solutions for acquisition and processing of data for natural resource management. The main objective of this proposal is to foster future development of the BioSense Center, based on its 3-year development strategy, the results of the gap analysis of the Center's potential, and the results of the SWOT analysis. The proposal aims to strengthen both the research and innovation capacities of the Center, to support the synergies within, and, in the end, to contribute to the reduction of the brain-drain, advance of the infrastructure (both research and management) and to increase the eco-innovation performance of the Center. The identified strengths of the BioSense Center, combined with the reinforcement activities proposed in this Project, will help in overcoming the identified weaknesses, exploit benefits from recognized opportunities and mitigate the threats. To achieve so, InnoSense will be implemented through seven strongly interrelated work packages (WP1-WP7) within a period of 42 months, namely: WP1: Management of the Project, WP2: Employment of new experts, WP3: Equipment purchase, WP4: Intellectual Property and Innovation Capacity Building, WP5: Placements and trainings, WP6: Dissemination and networking, and WP7: Ex-post evaluation. InnoSense is a mono-applicant proposal. However 20 Institutions (research institutes, private enterprises, governmental institutions etc.) all over Europe are providing endorsement to this proposal and will be actively involved in the implementation of the project and transfer their knowledge and expertise to the BioSense Center. Key-words: Research Capacities, Eco-Innovation, ICT, Sustainability, Environment, Agriculture
Duration of the project:
01.03.2013 - 31.08.2016
Partners:
1. Institute of Sensor and Actuator Systems, Department of Applied Electronic Materials, Vienna University of Technology, Vienna, Austria 2. Institute of Microwave Systems, Faculty of Electrical Engineering and Information Technology, Ruhr-University Bochum, Bochum, Germany 3. Agricultural University of Athens, Athens, Greece 4. Ghent University, Research group Image Processing and Interpretation 5. Institute of Food and Resource Economics, Faculty of Life Sciences, University of Copenhagen, Copenhagen, Denmark 6. GIS and Remote Sensing Laboratory (LAST) at Doñana Biological Station, Spain
Researchers from the FTS:
dr Vesna Crnojević Bengin, dr Vladimir Crnojević, dr Dejan Vukobratović, dr Tatjana Loncar Turukalo, dr Milan Secujski, dr Vasa Radonić
Equipment purchased from the project funds:

Naziv projekta Sedmog okvirnog programa FP 7:
FP7-ENV-2013 PROJECT DANCERS - DANUBE MACROREGION: CAPACITY BUILDING AND EXCELLENCE IN RIVER SYSTEMS (BASIN, DELTA AND SEA)
Oznaka projekta / akronim:
DANCERS
Web:
http://www.biosense.uns.ac.rs/
Rukovodilac projekta:
Vesna Crnojević-Bengin
Rukovodilac projekta sa FTN:
Vesna Crnojević-Bengin
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Osnovna primenjena i razvojna istraživanja
Opis projekta:
Cilj ovog projekta je da se razviju nove instrumenti i alati koji će unaprediti životnu sredinu i istraživanje i da se promovišu inovacije u Dunavskom regionu, uključujući delte Dunava i Crnog mora. Novi instrumenti i alati će se graditi na postojećim projektima koji pokrivaju više izvora finansiranja (javni, privatni ili PPP). Projekat će preduzeti kritičku analizu onoga što je do sada postignuto u regionu i gradiće se na rezultatima postignutim do danas, projektovaće se inovativna rešenja za jačanje i transfer znanja u ovoj oblasti. To će se postići prikupljanjem vrhunskih predstavnika akademske i poslovne zajednice kao i donosioca odluka, specijalizovanim u različitim sektorima integrisanog upravljanja Dunav - Crno more macrosistemom. Projekat će biti postavljeni na tri glavna stuba istraživanja i inovacija (I. nauku i inovacije, ii. Istraživačkih infrastruktura i III. Ljudskog kapitala) - i njihovim odnosom prema tri glavne kategorije: I. Politika i donosioci odluka, II. Poslovni/Industrija zajednica i III. Academia. Specifični ciljevi ovog projekta su : kritički analiziraju dostignuća u integrisanom sistemu reka - delta - more upravljanja u Dunavskom regionu, razumeju veze između postignuća, robe i rezultatima obavljenog posla, definisati set instrumenata za poboljšanje životne sredine istraživanje i inovacije u Dunavskom regionu. Krajnji proizvod projekta će bitikutija za alat instrumenata koji će dati: 1. strateški plan istraživanja, 2. koncept i detaljan plan distribuiranog istraživačke infrastrukture za Dunav - Crno more macrosistem i 3. Predlozi za integrisanog obrazovnog programa koji se sprovode na regionalnom nivou u neposrednoj budućnosti, uz punu saradnju partnera iz Dunav - Crno more Macrosistema .
Trajanje projekta:
2 godine (01.03.2013 - 31.03.2015)
Institucije učesnici / partneri:
Institutul National de Cercetare-Dezvoltare pentru Geologie sl , Geoecologie Marina-GeoEcoMar Consorzio per la Gestione del Centro di Coordinamento delle Attivita dl Ricerca Inerenti il Sistema Lagunare dl Venezia – CORILA, Zentrum fuer Soziale Inovation, Institutul National de Cercetare Dezvoltare pentru Stiinte Biologice RA, WasserCluster Lunz - Biologische Station GMBH Universitaet fuer Bodenkultur Wien, Consorcio Centro Internacional de Investigacion de los Recursos Costeros Hellenic Centre for Marine Research the University of Stirling (and Consortia), University College Cork, National University of Ireland, Cork Bundesanstalt Fuer Fewaesserkunde, Institut Francais de Recherche pour l'Exploitation de la Mer United Nations Educational, Scientific and Cultural Organization –UNESCO – IHE International University of Novi SadSzéchenyi I. University
Učesnici – istraživači sa FTN:
dr Vladimir Crnojvić, dr Vesna Crnojević Bengin, dr Dejan Vukobratović, dr Vasa Radonić
Oprema nabavljena iz projektnih sredstava:

EU's Seventh Framework Programme (FP7) project – Title:
FP7-ENV-2013 PROJECT DANCERS - DANUBE MACROREGION: CAPACITY BUILDING AND EXCELLENCE IN RIVER SYSTEMS (BASIN, DELTA AND SEA)
Project code / acronym:
DANCERS
Web site:
http://www.biosense.uns.ac.rs/
Grantholder:
Vesna Crnojević-Bengin
Coordinator from the Faculty of Technical Sciences:
Vesna Crnojević-Bengin
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Fundamental ,Applied, Development
Project Summary:
The aim of this project is develop new instruments and tools that will enhance environmental research and promote innovation in Danube Region, including the Danube Delta and the Black Sea. Importantly, the new instruments and tools do not start ab initio but will build on existing projects – covering multiple source of funding (public, private or PPP), whether national, regional or European – which will be identified and clustered. The project will undertake a critical analysis of what has been achieved so far in the region and will build upon results of achievements to-date, to design innovative solutions to strengthen knowledge transfer in this area. This will be achieved by gathering top level representatives of the academia and business communities as well as decision makers, specialized in various sectors of integrated management of the Danube –Black Sea macrosystem. The project will be structured on the three main pillars of Research and Innovation (i. Science and Innovation Agenda, ii. Research Infrastructures and iii. Human Capital) – and their relation to the three principal categories of stakeholder: i. Policy and Decision Makers, ii. Business / Industry community and iii. Academia. The specific objectives of this project are to: 1. critically analyse the achievements in integrated river- delta –sea management in the Danube Region, 2. understand links between the achievements, deliverables and results of the work performed. 3. Define a set of instruments to enhance environmental research and innovation in Danube Region. The ultimate deliverable will be a toolbox of instruments which will yield 1. a strategic research agenda, 2. a concept and detailed plan of the distributed research infrastructure – both for the Danube – Black Sea Macrosystem and 3. Proposals for an integrated educational program to be implemented at a regional level in the immediate future, with the full cooperation of partners from Danube - Black Sea Macrosystem
Duration of the project:
01.03.2013 - 31.03.2015
Partners:
Institutul National de Cercetare-Dezvoltare pentru Geologie sl , Geoecologie Marina-GeoEcoMar Consorzio per la Gestione del Centro di Coordinamento delle Attivita dl Ricerca Inerenti il Sistema Lagunare dl Venezia – CORILA, Zentrum fuer Soziale Inovation, Institutul National de Cercetare Dezvoltare pentru Stiinte Biologice RA, WasserCluster Lunz - Biologische Station GMBH Universitaet fuer Bodenkultur Wien, Consorcio Centro Internacional de Investigacion de los Recursos Costeros Hellenic Centre for Marine Research the University of Stirling (and Consortia), University College Cork, National University of Ireland, Cork Bundesanstalt Fuer Fewaesserkunde, Institut Francais de Recherche pour l'Exploitation de la Mer United Nations Educational, Scientific and Cultural Organization –UNESCO – IHE International University of Novi SadSzéchenyi I. University
Researchers from the FTS:
dr Vladimir Crnojvić, dr Vesna Crnojević Bengin, dr Dejan Vukobratović, dr Vasa Radonić
Equipment purchased from the project funds:

Naziv projekta Sedmog okvirnog programa (FP 7):
ADVANCED COMMUNICATIONS AND INFORMATION PROCESSING IN SMART GRID SYSTEMS (MARIE CURIE INITIAL TRAINING NETWORK)
Oznaka projekta / akronim:
FP7-PEOPLE-ITN-2013 ADVANTAGE
Web:
Rukovodilac projekta:
Prof. John Thompson, School of Engineering, The University of Edinburgh
Rukovodilac projekta sa FTN:
Doc. Dr Dejan Vukobratović
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Telekomunikacije i obrada signala (primenjena)
Opis projekta:
Smart Grid sistemi predstavljaju značajnu novu tehnologiju za ostvarenje energetski efikasnih sistema za isporuku električne energije uz smanjenje emisije ugljen-dioksida koji su u stanju da objedine mešavinu izvora energije od obnovljivih izvora energije malog obima do velikih hidro ili nuklearnih elektrana. Dizajn i implementacija pametne elektro-energetske mreže će biti veoma složen proces koji će uključiti veliki broj sistema, različitih slojeva funkcionisanja i međusobnih odnosa . Da bi infrastruktura pametne mreže radila efikasno , inženjeri treba da budu obučeni da imaju detaljno razumevanje kako elektro-energetike tako i telekomunikacionih sistema i obrade podataka. Mnogi slični istraživački projekti do danas uključuju ili uglavnom inženjera energetike ili uglavnom komunikacija i obradu signala, što ograničava interakciju i razmenu znanja između ove dve zajednice. Međutim , Smart Grid inženjeri treba da bude u stanju da razumeju i elektroenergetsku mrežu i protokole i mehanizme komunikacije i obrade podataka dobijenih sa električne mreže, a sve u cilju efikasne kontrole budućeg Smart Grida. Ovaj projekat je ITN interdisciplinarni projekat između komunikacionih inženjera i inženjera elektroenergetike namenjen da obuči novu generaciju naučnika i inženjera koji će voditi razvoj Smart Grid tehnologije kako unutar Evrope tako i na međunarodnom planu.
Trajanje projekta:
48 meseci
Institucije učesnici / partneri:
Prof. John Thompson, School of Engineering, The University of Edinburgh, EH9 3JL, Edinburgh, UK Prof. Petar Popovski, Aalborg University, Niels Jernej Vej 10, 9220, Aalborg, Denmark Dr Jesus Alonso Zarate, CTTC, Av del Kanal Olimpic, 8860, Castelldefels, Spain Prof. Antonio Gomez Exposito, Department of Electrical Engineering, University of Sevilla, Avda dos Descubrimientos, 41092 Sevilla, Spain Alastair Martin, Flextricity Ltd, Canning Street 19, EH3 8EG, UK Lund Staermose, Neogrid Technologies, Niels Jernej Vej 10, 9220 Aalborg, Denmark Dr Vladimir Strezoski, Schneider Electric DMS Novi Sad LLC, Narodnog Fronta 25, Novi Sad, Serbia Dr Millan Navarro, Endesa Distribucion Electrica, Avda Della Borbolla 5, 41004 Sevilla, Spain
Učesnici – istraživači sa FTN:
Dr Dejan Vukobratović i doktorant koji će biti angažovan na projektu
Oprema nabavljena iz projektnih sredstava:
Smart meters, senzori, mrežna oprema, računari, laptop računari

EU's Seventh Framework Programme (FP7) project – Title:
ADVANCED COMMUNICATIONS AND INFORMATION PROCESSING IN SMART GRID SYSTEMS (MARIE CURIE INITIAL TRAINING NETWORK)
Project code / acronym:
FP7-PEOPLE-ITN-2013 ADVANTAGE
Web site:
Project starts 01/01/2014, to be developed
Grantholder:
Prof. John Thompson, School of Engineering, The University of Edinburgh
Coordinator from the Faculty of Technical Sciences:
Dr Dejan Vukobratovic, Assistant Professor
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Applied
Project Summary:
Smart Grid systems represent a significant new technology to provide more energy efficient power delivery systems that reduce carbon emissions and can handle a mix of energy sources from small scale renewable energy to large power stations. The design and implementation of the smart grid will be very complex, involving a large number of systems, layers and relationships. In order to make the infrastructure of smart grid systems work effectively, engineers need to be trained to have a detailed understanding of both power engineering and communications issues. Many related research projects to date involve either mainly power engineers or mainly communications/signal processing researchers, limiting the interaction and knowledge exchange between these two communities. However, smart grid engineers should be able to appreciate the power network that the smart grid is designed for and how to communicate and process data concerning the power grid, so that it can be controlled effectively. This ITN project is a major interdisciplinary project between both power and communications engineers to train the next generation of engineers and scientists that will lead the development of this technology both within Europe and Internationally.
Duration of the project:
48 months
Partners:
Prof. John Thompson, School of Engineering, The University of Edinburgh, EH9 3JL, Edinburgh, UK Prof. Petar Popovski, Aalborg University, Niels Jernej Vej 10, 9220, Aalborg, Denmark Dr Jesus Alonso Zarate, CTTC, Av del Kanal Olimpic, 8860, Castelldefels, Spain Prof. Antonio Gomez Exposito, Department of Electrical Engineering, University of Sevilla, Avda dos Descubrimientos, 41092 Sevilla, Spain Alastair Martin, Flextricity Ltd, Canning Street 19, EH3 8EG, UK Lund Staermose, Neogrid Technologies, Niels Jernej Vej 10, 9220 Aalborg, Denmark Dr Vladimir Strezoski, Schneider Electric DMS Novi Sad LLC, Narodnog Fronta 25, Novi Sad, Serbia Dr Millan Navarro, Endesa Distribucion Electrica, Avda Della Borbolla 5, 41004 Sevilla, Spain
Researchers from the FTS:
Dr Dejan Vukobratović and a PhD student to be hired
Equipment purchased from the project funds:
Smart meters, sensors, networking equipment, computers, laptops

Naziv projekta Sedmog okvirnog programa FP 7:
RAZVOJ NOVE GENERACIJE EVROPSKIH BRODOVA ZA UNUTRAŠNJU PLOVIDBU I LOGISTIČKOG SISTEMA
Oznaka projekta / akronim:
NEWS
Web:
http://www.news-fp7.eu/
Rukovodilac projekta:
Tehnički Univerzitet u Beču | Vienna University of Technology Institut za menadžment | Institute of Management Science Odsek za industrijski i sistemski inženjering | Division Industrial and Systems Engineering
Rukovodilac projekta sa FTN:
Prof. dr ing. Milosav Georgijević
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Razvojna istraživanja
Opis projekta:
Osnovni cilj projekta je povećanje transportnih (kontejnerskih) tokova na unutrašnjim plovnim putevima (naročito na Dunavu) kroz razvoj nove generacije brodova za Evropske unutrašnje plovne puteve i logistički sistem koji će kontejnerski transport na unutrašnjim plovnim putevima učiniti troškovno, vremenski i ekološki povoljnijim vidom transporta. Projekat podržava potpunu integraciju vodnog transporta u postojeću EU transportnu i logističku mrežu. NEWS kombinuje tehničke i logističke inovacije koje treba da pomognu u rešavanju prekograničnih Evropskih izazova u vezi optimizovanog transporta na unutrašnjim plovnim putevima. Najvažnije inovativne karakteristike su: • Povećanje efikasnosti transporta (+100% TEU) kroz dizajn trupa brodova za kontejnerske specifikacije, • Rezervoar sa balastom, za prilagođavanja gaza, što povećava broj dana moguće plovidbe u periodima ekstremnog vodostaja, • Povećanje efikasnosti resursa (i do 30%) instaliranjem prilagodljivog dizel-TNG-električnog pogona, • Posebno projektovan logistički sistem za konkretne zahteve ciljanih tržišta, • Novi koncepti infrastrukture za rečne luke, • Mogućnost da se NEWS adaptira za UN klase III i IV, tj. da sekundarni plovni putevi postanu dostupni za efikasan kontejnerski transport.
Trajanje projekta:
30 meseci, od 1. marta 2013. godine
Institucije učesnici / partneri:
Technische Universität Wien, Austrija, DI Ziviltechniker Anzböck / Austria, First DDSG Logistics Holding GmbH / Austria, Regional Development Agency of the West Region Romania / Romania, Lindenau Maritime Engineering and Projecting / Germany, University of Duisburg-Essen / Germany, TU Dortmund - University / Germany, University of Novi Sad / Serbia, Intermodal Concepts & Management AG / Switzerland, Projektkompetenz.eu / Austria.
Učesnici – istraživači sa FTN:
Prof. dr ing. Milosav Georgijević, prof. dr Todor Bačkalić, doc. dr Sanja Bojić, Atila Zelić, dipl.ing.-master
Oprema nabavljena iz projektnih sredstava:
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EU's Seventh Framework Programme (FP7) project – Title:
DEVELOPMENT OF A NEXT GENERATION EUROPEAN INLAND WATERWAY SHIP AND LOGISTICS SYSTEM
Project code / acronym:
NEWS
Web site:
http://www.news-fp7.eu/
Grantholder:
Technische Universität Wien | Vienna University of Technology Institut für Managementwissenschaften | Institute of Management Science Bereich Betriebstechnik und Systemplanung | Division Industrial and Systems Engineering
Coordinator from the Faculty of Technical Sciences:
Prof. Dr.- Ing. Milosav Georgijevic
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Development Research
Project Summary:
NEWS' principal objective is to increase (container) transport flows on inland waterways (especially the Danube) by developing a Next generation European Inland Waterway Ship and logistics system to make container transport on inland waterways more cost-, time- and ecologically efficient. Hence, it supports the full integration of waterborne transport into the EU transport and logistics chain. NEWS combines technical and logistical innovations to assist cross-border European challenges for an optimized container inland waterway transport. Therefore, coherent work packages will lead to the expected results: • Re-design of a standard inland ship hull: increase of transport efficiency (up to 100% TEU) • Adaptable draught: a ballast tank leading to an increase of days of navigability • Increase of resource efficiency (up to 30%), decrease of harmful exhaust emissions by the technical development of LNG-electric energy- and propulsion system • Macro-regional analysis: Spatial framework incl. systemic transboundary and regional impact • Micro-regional analysis: Logistical network structures and intermodal integration within most promising catchment area • River ports infrastructure and service concepts • Development of a finance and business plan • Development of technical and commercial implementation scenarios
Duration of the project:
30 months, since 1st of March 2013
Partners:
Technische Universität Wien, Austrija, DI Ziviltechniker Anzböck / Austria, First DDSG Logistics Holding GmbH / Austria, Regional Development Agency of the West Region Romania / Romania, Lindenau Maritime Engineering and Projecting / Germany, University of Duisburg-Essen / Germany, TU Dortmund - University / Germany, University of Novi Sad / Serbia, Intermodal Concepts & Management AG / Switzerland, Projektkompetenz.eu / Austria.
Researchers from the FTS:
Prof. dr ing. Milosav Georgijević, prof. dr Todor Bačkalić, doc. dr Sanja Bojić, Atila Zelić, dipl.ing.-master
Equipment purchased from the project funds:
No purchased equipment

Međunarodni projekti

H2020

International Projects

H2020

Naziv projekta okvirnog programa H2020 :
FRIEND TO UNDERSTAND
Oznaka projekta / akronim:
Friend2U
***Web*:**
http://nocistrazivaca.rs/Join-us.-Explore-the-night
Rukovodilac projekta:
Fakultet tehničkih nauka
Rukovodilac projekta sa FTN:
Vladimir Todorović
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Razvoj
Opis projekta:
Ideja vodilja Noći istraživača je omogućiti posetiocima da što bolje upoznaju naučnike i nauku na atraktivan, dinamičan i interaktivan način, spajajući nauku sa zabavom, inovativnošću i kreativnošću. Cilj projekta je da skrene pažnju na istraživače i poziv istraživača, da pokaže da su naučnici obični ljudi sa veoma interesantnim poslom, da poput ljudi drugih profesija, doprinose opštem društvenom i ekonomskom razvoju. U tom smislu, javnost će imati priliku da upozna istraživače u njihovim svakodnevnim aktivnostima, bez tajni i predrasuda da se radi o komplikovanom i nedostupnom poslu. Posetioci će moći bolje da razumeju nauku, da dođu u kontakt sa opremom i uređajima, ali pre svega da se sretnu licem u lice sa naučnicima. Projekat se realizuje kroz tri celine: kampanju podizanja svesti, realizaciju samog događaja i evaluaciju učinjenog. Kampanja podrazumeva odlaske u osnovne i srednje škole, na fakultete, gostovanja na televiziji i na radiju, javne performanse u gradovima, a sve u cilju prenošenja osnovne poruke da se naučnici bave zanimljivim i za društvo korisnim poslom.
Trajanje projekta:
2014. – 2016.
***Institucije učesnici / partneri**:*
Fakultet tehničkih nauka, Prirodno-matematički fakultet, Novi Sad, Visoka tehnička škola strukovnih studija Zrenjanin, Kreativno edukativni centar, Novi Sad, Udruženje naučnih komunikatora, Centar za promociju nauke
Učesnici –istraživači sa FTN
Vladimir Todorović, Tijana Pokrajac
Oprema nabavljena iz projektnih sredstava

EU's Framework Programme H2020 project – Title:
FRIEND TO UNDERSTAND
Project code / acronym:
Friend2U
Web site:
http://nocistrazivaca.rs/Join-us.-Explore-the-night
Grantholder
Faculty of Technical Sciences
Coordinator FTS:
Vladimir Todorović
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Development
Summary:
Friend2U - Researchers' Night project aims at bringing the researchers closer to the general public and increasing awareness of the research and innovation activities with a view to supporting the public recognition of researchers, creating understanding of the impact of the researchers' work on our daily life, and encouraging young people to embark on scientific careers. In other words, it aims at increasing mutual understanding, interest and connections, and facilitating a dialogue between the researchers and the general public. In a nutshell, it is about making the researchers friends with the common people i.e. the general public - as closest friends as possible. Friend2U project proposal mixes, blends and unites faces, voices, results and energies of many generations of the researchers in offering the public at large, regardless of their age, education and scientific background, the opportunity to make friends with these researchers. Here, making friends with the researchers is a paradigm of learning more about their science, learning how to appreciate their work and achievement, and above all, about building trust in what friends do and invessuccessful implementation fot eh ation and as such needs to be udnertaken weell before sumemr break.
Duration:
2014. – 2016.
Partners:
University of Novi Sad, Faculty of Tecnical Sciences, University of Novi Sad, Faculty of Sciences, High Technical School of professional studies, Zrenjanin, Creative Educational Centre – KEC, Novi Sad, Association of Scientific communicators, Serbia, The Center for Science Promotion, Serbia
Researchers from the FTS:
Vladimir Todorović, Tijana pokrajac
Equipment purchased from project funds:

Međunarodni projekti

COST

International Projects

COST

Projekat COST saradnje:
KOOPERATICNE RADIO/KOMUNIKACIJE U 'ZELENIM' PAMETNIM OKRUŽENJIMA
Oznaka projekta / akronim:
IC1004
Web:
http://www.ic1004.org/
Rukovodilac projekta:
Prof. dr Narcis Cardona, ali grant holder je prof. dr Roberto Verdone, Polytechnical University of Valencia, Spain
Rukovodilac projekta sa FTN:
Prof. dr Dragana Bajić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Osnovna
Opis projekta:
U pametnim okruženjima (PO) kao što su ljudsko telo, energetski efikasne građevine, pokretno ili urbano okruženje, nalaze se brojni uređani povezani u bežičnu mrežu. Osnova PO je radio kanal, jer je njegov impakt dizajniranje prenosnih tehnika i komunikacionih protokola. Od radio komunikacija u PO se zahteva da budu "zelene" i da se zasnivaju na kooperativnim paradigmama koje ublažavaju efekte interferencije i poboljšavaju efikasnost. Ova akcija, u okviru radio komunikcija, nastoji da učini okruženje čišćim, bezbednijim i energetski efikasnijim. Osnovni cilj je povećanje spoznaje kooperativnih komunikacija primewenih na zelena PO (ZPO), istraživanjem i razvojem metoda, modela, tehnika, strategija i alata u kontekstu koji je obogaćen dubokim vezama između industrije i akademije. Trenenzi mladih istraživača su jedan od osnovnih ciljeva koji će se postići trening školama. Evropa će prosperirati putem aktivnosti ove Akcije, jer će ZPO biti jedna od ključnih komponenti šireg polja Interneta Stvari, interesnog domena mnogih velikih i malih evropskih kompanija. COST akcija je idealan okvir za ova istraživanja, jer omogućava izuzetno efikasnu saradnju između industrije i akademije.
Trajanje projekta:
2011. – 2015.
Institucije učesnici / partneri:
Ukupno 125 institucija iz 35 država
Učesnici –istraživači sa FTN:
Dragana Bajić
Oprema nabavljena iz projektnih sredstava:
-

COST networking project – Title:
COOPERATIVE RADIO COMMUNICATIONS FOR GREEN SMART ENVIRONMENTS
Project code / acronym:
IC1004
Web site:
http://www.ic1004.org/
Grantholder:
Prof. Dr. Roberto Verdone; project Coordinator Prof. Dr. Narcis Cardona, Polytechnical University of Valencia, Spain
Coordinator FTS:
Prof. Dr. Dragana Bajić
Scientific Research Fields / Type of research (Fundamental / Applied / Development):
Fundamental and applied
Summary:
Smart Environments (SEs), like the human body, energy efficient buildings, vehicular or urban environments, are populated by many devices connected by wireless networks. The radio channel is central to SEs, as it impacts the design of transmission techniques and communication protocols. Radio communications in SEs need to be green and based on cooperative paradigms to mitigate the effect of interference and improve efficiency. This Action addresses research issues in the field of cooperative radio communications to make our society cleaner, safer, and more energy efficient. The main goal of the Action is to increase knowledge of cooperative communications applied to Green SEs (GSEs), by exploring and developing new methods, models, techniques, strategies and tools, in a context enriched by deep industry-academia links. Training of young researchers is also one of its main objectives, to be pursued e.g. via annual training schools. Europe will benefit from the activities of this Action, as GSEs will be one of the key components of the broader field (and exploding market) of the Internet of Things, a domain of interest to many large and small companies in Europe. COST is the ideal framework, as it allows very efficient cooperation among industries and academia.
Duration:
2011–2015
Partners:
Total of 125 institutions from 35 countries
Researchers from the FTS:
Dragana Bajić
Equipment purchased from project funds:
-

Projekat COST saradnje:
MREŽNO KODOVANJE I DIZAJNI NAD POLJEM GF(q)
Oznaka projekta / akronim:
IC1104
Web:
http://www.network-coding.eu/
Rukovodilac projekta:
Prof. **dr** Marcus Greferath, Univerzitetski koledž u Dablinu, Irska
Rukovodilac projekta sa FTN:
Doc. dr Dejan Vukobratović
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Osnovna/primenjena
Opis projekta:
COST akcija „Mrežno kodovanje i dizajni nad poljem GF(q)“ služi za uspostavljanje međunarodne saradnje između evropskih partnera za oblast mrežnog kodovanja čija popularnost raste u okviru istraživanja komunikacionih tehnologija. Akcija okuplja eksperte iz oblasti matematike i primenjene matematike, teorijske informatike i inženjerstva elektrotehnike.
Trajanje projekta:
2012. – 2016.
Institucije učesnici / partneri:
University College Dublin, School of Mathematical Sciences, 4 Dublin, Ireland (Chairing COST Action) University of University of Zagreb, Faculty of Electrical Engineering and Computing, Unska 3, 10000 Zagreb, Croatia (- Vice Chairing COST Action) i još po do dve dodatne institucije iz sledećih evropskih zemalja: Belgija, Hrvatska, Danska, Finska, Nemačka, Grčka, Irska, Izrael, Italija, Norveška, Portugal, Srbija, Slovenija, Španija, Švajcarska, Turska, Velika Britanija
Učesnici –istraživači sa FTN:
Dejan Vukobratović, Mladen Kovačević, Aleksandar Minja
Oprema nabavljena iz projektnih sredstava:
-

COST networking project – Title:
RANDOM NETWORK CODING AND DESIGNS OVER GF (q)
Project code / acronym:
IC1104
Web site:
http://www.network-coding.eu/
Grantholder:
Prof. Dr. Marcus Greferath, University College in Dublin, Ireland
Coordinator FTS:
Assistant professor Dr. Dejan Vukobratović
Scientific Research Fields / Type of research (Fundamental / Applied / Development):
Fundamental/Applied
Summary:
This COST Action on Random Network Coding and Designs over GF(q) serves to foster an international European collaboration on this emerging field in Communications Technology. It brings together experts from pure and applied mathematics, computer science, and electrical engineering.
Duration:
2012-2016
Partners:
University College Dublin, School of Mathematical Sciences, 4 Dublin, Ireland (Chairing COST Action) University of University of Zagreb, Faculty of Electrical Engineering and Computing, Unska 3, 10000 Zagreb, Croatia (- Vice Chairing COST Action) and up to two more institutions from the following European countries: Belgium, Croatia, Denmark, Finland, Germany, Greece, Ireland, Israel, Italy, Norway, Portugal, Serbia, Slovenia, Spain, Switzerland, Turkey, UK
Researchers from the FTS:
Dejan Vukobratović, Mladen Kovačević, Aleksandar Minja
Equipment purchased from project funds:
None

Projekat COST saradnje:
EVROPSKA MREŽA ZA KVALITET MULTIMEDIJALNIH SISTEMA I USLUGA
Oznaka projekta / akronim:
COST IC 1003: QUALINET
Web:
http://www.qualinet.eu/
Rukovodilac projekta:
Prof. dr Touradj Ebrahimi
Rukovodilac projekta sa FTN:
Prof. dr Dragan Kukolj
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Razvojna
Opis projekta:
Kvalitet doživljaja je jedan od najvažnijih ciljeva u razvoju multimedijalnih tehnologija, uređaja i usluga. Prema tome, projektovanje sledeće generacije multimedijalnih sistema treba biti zasnovan na efektivnim i pouzdanim metrikama sposobnim da ocene subjektivni doživljaj kvaliteta. Optimizacija kvaliteta nije moguća jer nisu precizno definisani kriterijumi subjektivnog doživljaja. Cilj mreže izvsnost Qualinet je da proširi smisao mrežno orijentisanog ocenjivanja kvaliteta usluga u multimedijalnim sistemima koristeći koncept kvaliteta doživljaja. Glavni zadatak akcije je razvoj metodologija i metrika za objektivno i subjektivno ocenjivanje kvaliteta, uzimajući u obzir tekuće i nove trendove u multimedijalnim komunikacionim sistemima, gde smo svedoci pojave novih tipova sadržaja i interakcija.Značajan naučni uticaj u istraživanjima u tom polju će biti postignut u okviru koordinisanih istraživanja evropskih stručnjaka pod okriljem COST akcije.
Trajanje projekta:
08.11.2010. - 07.11.2014.
Institucije učesnici / partneri:
Klagenfurt University Austria, ForschungszentrumTelekommunikation Wien, K.U. Leuven Centre for User Experience Research Belgium, Vrije Universiteit Brussel - Interdisciplinary Institute for Broadband Technology (IBBT) Belgijum, Universtiy of Zagreb Faculty of Graphic Arts, University of Zagreb, Faculty of EE and Computing, University of Cyprus, Czech Technical University in Prague, Faculty of Electrical Engineering, Technical University of Denmark DTU Fotonik, VTT Technical Research Centre of Finland, EMMi Lab. Tampere Univ. of Technlogoy (TUT), Université de Nantes/Polytech Nantes rue christianpauc France, TU Berlin Quality and Usability Lab, Deutsche Telekom Laboratories, Technische Universtität München Arcisstrasse 21 80290 Munich, Hellenic Open University School of Science and Technology, National University of Ireland, Maynooth Dept of Electronic Engineering, NUI Galway Discipline of IT GAL Galway Ireland, Interdisciplinary Center (IDC) Herzliya Israel, AGH University of Science and Technology, Department of Telecommunications Poland, Fondazione Ugo Bordoni Italy, University of Malta Department of Communications and Computer Engineering, T-VIPS AS Norway, National Institute of Telecommunications Poland, Instituto Superior Técnico Portugal, Instituto Superior Técnico Portugal, Universidade da Beira Interior Portugal, University of Zilina Faculty of Electrical Engineering, University of Zilina Dept. of Telecomm. and Multimedia Slovakia, Alpineond.o.o. Slovenia, University of Maribor, Faculty of EE & CS Slovenia, Consejo Superior de Investigaciones Cientificas Spain, Asociación Industrial de Óptica Color e Imagen AIDO Spain, Mid Sweden University, Acreo AB Sweden, University of Applied Sciences Western Switzerland College of Engineering and Architecture, Faculty of Economics – Skopje, University Sts Cyril and Methodius Faculty of Electrical Engineering, University of Plymouth School of Computing and Mathematics United Kingdom, University of Essex School of Computer Science and Electronic Engineering United Kingdom
Učesnici –istraživači sa FTN:
Dragan Kukolj, Maja Pokrić, Vladimir Zlokolica, Miodrag Temerinac, Nemanja Lukić
Oprema nabavljena iz projektnih sredstava:
-

COST networking project – Title:

EUROPEAN NETWORK QUALITY OF EXPERIENCE IN MULTIMEDIA SYSTEMS AND SERVICES

Project code / acronym:

COST IC 1003: QUALINET

Web site:

http://www.qualinet.eu/

Grantholder:

Prof. Dr. Touradj Ebrahimi

Coordinator FTS:

Prof. Dr. Dragan Kukolj

ScientificResearch Fields /Type of research(Fundamental / Applied/Development):

Development

Summary:

Current forecasts on multimedia communication predict an aggressive growth. The transition from single medium communication (typically telephone and conversation based on voice) to interactive multimedia with (possibly augmented) 3D audiovisual content (media streaming, IPTV, multimodal teleconferences, NGN communication scenarios, etc.) encompasses the capability of reaching more complete and natural forms of expression and communication.

Perceived quality is one of the most fundamental goals when developing multimedia technologies, products and services. Thus, an approach for the design and assessment of next generation multimedia services needs to be based on effective and reliable metrics predicting the subjectively perceived quality. Quality optimization is meaningless if the notion of quality is not precisely defined, preventing effectiveness, efficiency, and user satisfaction.

The Network of Excellence (NoE) Qualinet aims at extending the notion of network-centric Quality of Service (QoS) in multimedia systems, by relying on the concept of Quality of Experience (QoE). The main scientific objective is the development of methodologies for subjective and objective quality metrics taking into account current and new trends in multimedia communication systems as witnessed by the appearance of new types of content and interactions. A substantial scientific impact on fragmented efforts carried out in this field will be achieved by coordinating the research of European experts under the catalytic COST umbrella.

Duration:

November 8, 2010 – November 7, 2014

Partners:

Klagenfurt University Austria, ForschungszentrumTelekommunikation Wien, K.U. Leuven Centre for User Experience Research Belgium, Vrije Universiteit Brussel - Interdisciplinary Institute for Broadband Technology (IBBT) Belgijum, Universtiy of Zagreb Faculty of Graphic Arts, University of Zagreb, Faculty of EE and Computing, University of Cyprus, Czech Technical University in Prague, Faculty of Electrical Engineering, Technical University of Denmark DTU Fotonik, VTT Technical Research Centre of Finland, EMMi Lab. Tampere Univ. of Technlogoy (TUT), Université de Nantes/Polytech Nantes rue christianpauc France, TU Berlin Quality and Usability Lab, Deutsche Telekom Laboratories, Technische Universtität München Arcisstrasse 21 80290 Munich, Hellenic Open University School of Science and Technology, National University of Ireland, Maynooth Dept of Electronic Engineering, NUI Galway Discipline of IT GAL Galway Ireland, Interdisciplinary Center (IDC) Herzliya Israel, AGH University of Science and Technology, Department of Telecommunications Poland, Fondazione Ugo Bordoni Italy, University of Malta Department of Communications and Computer Engineering, T-VIPS AS Norway, National Institute of Telecommunications Poland, Instituto Superior Técnico Portugal, Instituto Superior Técnico Portugal, Universidade da Beira Interior Portugal, University of Zilina Faculty of Electrical Engineering, University of Zilina Dept. of Telecomm. and Multimedia Slovakia, Alpineond.o.o. Slovenia, University of Maribor, Faculty of EE & CS Slovenia, Consejo Superior de Investigaciones Cientificas Spain, Asociación Industrial de Óptica Color e Imagen AIDO Spain, Mid Sweden University, Acreo AB Sweden, University of Applied Sciences Western Switzerland College of Engineering and Architecture, Faculty of Economics – Skopje, University Sts Cyril and Methodius Faculty of Electrical Engineering, University of Plymouth School of Computing and Mathematics United Kingdom, University of Essex School of Computer Science and Electronic Engineering United Kingdom

Researchers from the FTS:

Dragan Kukolj, Maja Pokrić, Vladimir Zlokolica, Miodrag Temerinac, Nemanja Lukić

Equipment purchasedfrom project funds:

-

Projekat COST saradnje:

BIMODAL PET-MRI MOLECULAR IMAGING TECHNOLOGIES AND APPLICATIONS FOR IN VIVO MONITORING OF DISEASE AND BIOLOGICAL PROCESSES

Oznaka projekta / akronim:

TD 1007 / PET-MRI

Web:

www.pet-mri.eu

Rukovodilac projekta:

Prof. dr George LOUDOS, Technological Educational Institute of Athens, Department of Medical Instruments Technology, Greece

Rukovodilac projekta sa FTN:

Doc. dr Dubravko Ćulibrk

Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvoja):

Informacione tehnologije, Medicina /primenjena

Opis projekta:

Cilj TD1007 akcije je da koordiniše nacionalne i internacionalne projekte iz atraktivne i nove oblasti PET-MRI medicinskog imidžinga. U poslednjih 5 godina sve veća pažnja se posvećuje PET-MRI tehnici, zbog komplementarnih prednosti dve tehnologije koje je čine. Između ostalog radi se o kotrastu koji se dobija kod mekih tkiva i niskom nivou zračenja. Iako je tehnologija u povoju, četiri prototipa integrisanih hibridnin PET/MRI skenra su instalirana u dva PET centra u Evropi (Nemačkoj) i SAD.

Molekularni imidžing pomoću PET MRI je intersiciplinarna tema koja uključuje: novu instrumentaciju, strategije prikupljanja podataka, obradu slike i algoritme rekonstrukcije. U tom smislu ova COST akcija predstavlja multidisciplinarni balans grupa, kome doprinosi i naša istraživačka frupa koja uključuje istrazivače sa FTN-a i Insituta za Onkologiju Vojvodine.

Trajanje projekta:

2011. – 2015.

Institucije učesnici / partneri:

Pored naše grupe u projektu učestvuju institucije iz Austrije, Belgije, Bugarske, Hrvatske, Kipra, Danske, Francuske, Nemačke, Grčke, Italije, Holandije, Norveške, Poljske, Portugala, Španije, Švedske, Švajcarske i Velike Britanije.

Učesnici –istraživači sa FTN:

Dubravko Ćulibrk, Vladimir Crnojević, Vladimir Petrović, Dejan Vukobratović, Milan Mirković, Katarina Gavrić, Srdjan Sladojević, Branko Brkljač, Marko Panić, Andraš Anderla

Oprema nabavljena iz projektnih sredstava:

Projekat ne pokriva nabavku opreme.

COST networking project – Title:

BIMODAL PET-MRI MOLECULAR IMAGING TECHNOLOGIES AND APPLICATIONS FOR IN VIVO MONITORING OF DISEASE AND BIOLOGICAL PROCESSES

Project code / acronym:

TD 1007/PET-MRI

Web site:

www.pet-mri.eu

Grantholder:

Prof. Dr. George LOUDOS, Technological Educational Institute of Athens, Department of Medical Instruments Technology, Greece

Coordinator FTS:

Doc. Dr. Dubravko Ćulibrk

Scientific Research Fields / Type of research (Fundamental / Applied / Development):

ICT, Medicine, PET-MRI imaging/ Applied

Summary:

The rapid growth in genetics and molecular biology combined with the development of techniques for transgenic small animals has lead to an increased interest in in vivo preclinical molecular imaging; PET-MRI has gained attention over the past five years due to the complementary advantages of those technologies, including soft tissue contrast and low radiation. Molecular imaging with PET-MRI is an interdisciplinary topic; new instrumentation, data acquisition strategies, image processing and reconstruction algorithms need to be developed, evaluated and optimised. In addition, bimodal contrast agents, including nanoparticles are promising candidates for a number of preclinical and clinical diagnostic and therapeutic applications.

Although a number of prototype hybrid systems are being developed, enhancing interaction with end users is still critical. Recently, four prototypes of integrated hybrid PET/MRI scanners, were installed at two PET centres in Europe Germany and the United States. Understanding the emerging biological needs, preclinical and clinical challenges, will provide the directions for the design of efficient bimodal probes and optimized imaging equipment. The proposed Action fulfils the need for European coordinated research in the development and application of peak technologies, aiming to bridge the gap between basic biological research and preclinical application with significant social impact.

Duration:

2011-2015

Partners:

In addition to our group, the project includes institutions from: Austria, Belgium, Bulgaria, Croatia, Cyprus, Denmark, France, Germany, Greece, Hungary, Italy, Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland, United Kingdom

Researchers from the FTS:

Dubravko Ćulibrk, Vladimir Crnojević, Vladimir Petrović, Dejan Vukobratović, Milan Mirković, Katarina Gavrić, Srdjan Sladojević, Branko Brkljač, Marko Panić, Andraš Anderla

Equipment purchased from project funds:

The project does not cover equipment costs.

Projekat COST saradnje:

BETTY: BEHAVIOURAL TYPES FOR RELIABLE LARGE-SCALE SOFTWARE SYSTEMS

Oznaka projekta / akronim:

BETTY

Web:

http://www.cost.eu/domains_actions/ict/Actions/IC1201

Rukovodilac projekta:

Dr Simon Gay, University of Glasgow, UK

Rukovodilac projekta sa FTN:

Prof. dr Jovanka Pantovic

Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):

Informacione i komunikacione tehnologije / osnovna

Opis projekta:

Savremeno društvo je u velikoj meri zavisno od složenih softverskih sistema koji su distribuirani, kolaborativni i usmereni na komunikaciju. Činjenica da su ovakvi softveri u velikoj meri osetljivi na neželjena ponašanja, dovela je do urgentne potrebe za postavljanjem matematičkih okvira za opisivanje i rezonovanje o distribuiranim softverskim sistemima. Jedan okvir predstavlja bihejvioralna teorija tipova, koja opisuje medjusobnu interakciju između ponašanja i interfejsa sistema,. Ova oblast trenutno predstavlja vodeću temu istraživanja u velikom broju evropskih zemalja. Akcija će postaviti mrežu izuzetnosti za evropske istraživače kako bi koordinirali saradnju i primenu teorije bihejvioralnih tipova. To uključuje radne grupe u teoretskim osnovama, bezbednosti, aplikacijama, programskim jezicima i alatima za analizu i verifikaciju. Diseminacija rezultata uključuje seriju otvorenih radionica.

Trajanje projekta:

5.07.2012. – 6.06.2016.

Institucije učesnici / partneri:

Hrvatska, Danska, Francuska, Nemačka, Irska,Italija, Malta, Holandija, Poljska, Portugalija, Srbija, BJR Makedonija, Velika Britanija,...

Učesnici –istraživači sa FTN:

Jelena Čolić, Silvia Gilezan, Jelena Ivetić, Svetlana Jakšić, Jovanka Pantović, Andrijana Stamenković

Oprema nabavljena iz projektnih sredstava:

-

COST networking project – Title:

BETTY: BEHAVIOURAL TYPES FOR RELIABLE LARGE-SCALE SOFTWARE SYSTEMS

Project code / acronym:

BETTY

Web site:

http://www.cost.eu/domains_actions/ict/Actions/IC1201

Grantholder:

Prof. Dr. Simon GayUniversity of Glasgow, UK

Coordinator FTS:

Prof. Dr. Jovanka Pantovic

Scientific Research Fields / Type of research (Fundamental / Applied / Development):

Information and communication technologies / Fundamental

Summary:

Modern society is increasingly dependent on large-scale software systems that are distributed, collaborative and communication-centred. Software of this kind is very sensitive to undesired behaviour, ranging from security breaches to deadlocks and incompatibilities. These concerns have led to the emergence of mathematical frameworks for describing and reasoning about distributed software. One such framework is that of behavioural type theory, which describes the interplay between the behaviour and the interface of systems. This is now emerging as an important research topic in a number of European countries. This Action will set up a network of excellence for European researchers to co-ordinate collaboration on and applications of the theory of behavioural types. This involves Working Groups on the topics of theoretical foundations, security, applications, programming languages and tools for analysis and verification. The dissemination of results includes a series of open workshops.

Duration:

July 5, 2012 – June 6, 2016

Partners:

Croatia, Denmark, France, Germany, Ireland, Italy, Malta, Netherlands, Poland, Portugal, Serbia, FYR Macedonia, United Kingdom

Researchers from the FTS:

Jelena Čolić, Silvia Gilezan, Jelena Ivetić, Svetlana Jakšić, Jovanka Pantović, Andrijana Stamenković

Equipment purchased from project funds:

-

Projekat COST saradnje:
BOJA I PROSTOR U KULTURNOJ BAŠTINI
Oznaka projekta / akronim:
COST Action TR1201
Web:
http://www.cost.eu/domains_actions/mpns/Actions/TD1201?
Rukovodilac projekta:
dr Sergey Kucheryavskiy, Aalborg University, Danska
Rukovodilac projekta sa FTN:
Prof. dr Nataša Sladoje Matić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Interdisciplinarna (Primenjena istraživanja)
Opis projekta:
Precizna i kompletna dokumentacija je od suštinskog značaja za predstavljanje i očuvanja kulturne baštine (KB). Evropska unija u članu 167 Ugovora navodi da se očuvanje pokretnog i nepokretnog kulturnog nasleđa mora tretirati kao prioritet za EU, što daje pravni osnov za inicijative koje se odnose na zaštitu KB, uključujući i istraživanja u ovoj oblasti. Obezbeđivanjem pristupa najboljoj mogućoj dokumentaciji objekata KB, Akcija doprinosi razumevanju i dugoročnom očuvanju materijalnog nasleđa. Postupak kreiranja dokumentacija o KB uključuje multidisciplinarne timove istraživača i stručnjaka iz nauke, kulture i industrije. Istraživanja u ovoj oblasti se obično oslanjaju na nacionalno-finansirane projekte sa malo interakcije između zainteresovanih strana. Imajući to u vidu, Akcija će obezbediti okvir za artikulisanje problema, razmenu rešenja i veština, standardizaciju metodologije i protokola, ako i unapređenje uzajamnog razumevanja. Akcija će promovisati otvorene standarde za dokumentaciju o KB. Glavni cilj ove Akcije će biti da promoviše istraživanje, razvoj i primenu optičkih mernih tehnika - prilagođenih potrebama KB-dokumentacije - na osnovu interdisciplinarne saradnje, kao i da ponudi novu i pouzdanu, globalnu bazu znanja koja će olakšati korišćenja današnje i buduće optički merne tehnike za podršku dokumentaciji KB.
Trajanje projekta:
7.11.2012. - 6.11.2016.
Institucije učesnici / partneri:
1. Royal Belgian Institute of Natural Sciences 29 rue Vautier B-1000 Brussels, Belgium, 2. Aalborg University Fredrik Bajers Vej 5 9100 Aalborg, Denmark, 3. University of Eastern Finland SIB-labs FI-80101 Joensuu, Finland, 4. University of Applied Sciences Mainz Lucy Hillebrand Str. 2 55128 Mainz, Germany, 5. "Athena" Research Center 58 Tsimiski St. GR 67100 Xanthi, Greece, 6. Istituto di Fisica Applicata "Nello Carrara" del Consiglio Nazionale delle Ricerche (IFAC-CNR) Via Madonna del Piano 10 50019 Sesto Fiorentino, Italy, 7. Warsaw University of Technology Boboli 8 02-525 Warsaw, Poland 8. Faculty of Technical Sciences, University of Novi Sad Trg Dositeja Obradovica 6 21 000 Novi Sad, Serbia, 9. Institute of Measurement Science, Slovak Academy of Sciences Dubravska cesta 9 84104 Bratislava, Slovakia, 10. University of Málaga Facultad de Filosofía y Letras 29071 Málaga, Spain, 11. University of Southampton ECS dept. SO17 1BJ Southampton, United Kingdom, 12. Mathematical Institute SANU, Kneza Mihaila 36, 11000 Beograd, Serbia,
Učesnici –istraživači sa FTN:
Nataša Sladoje Matić, Tibor Lukić, Slobodan Dražić, Vladimir Ilić, Jovana Radenović, Andrijana Stamenković
Oprema nabavljena iz projektnih sredstava:
-

COST networking project – Title:

COLOUR AND SPACE IN CULTURAL HERITAGE (COSCH)

Project code / acronym:

COST Action TR1201

Web:

http://www.cost.eu/domains_actions/mpns/Actions/TD1201?

Grantholder:

Dr. Sergey Kucheryavskiy, Aalborg University, Denmark

Coordinator FTS:

Prof. Dr. Nataša Sladoje Matić

Scientific Research Fields / Type of research (Fundamental / Applied / Development):

Interdisciplinary (Applied)

Summary:

True, precise and complete documentation of artefacts is essential for conservation and preservation of our cultural heritage (CH). By ensuring access to the best possible documentation of artefacts we are contributing to the enhanced understanding of material CH and help its long-term preservation. We are all responsible for ensuring that this heritage is passed on to future generations.

Documentation of CH involves researchers, scientists and professionals from multiple disciplines and industries. There is a need to promote research, development and application of non-contact optical measurement techniques (spectral and spatial) – adapted to the needs of heritage documentation – on a concerted European level, in order to protect, preserve, analyse understand, model, virtually reproduce, document and publish important CH in Europe and beyond.

Research in this field typically relies on nationally-funded projects with little interaction between stakeholders. This Action will provide a stimulating framework for articulating and clarifying problems, sharing solutions and skills, standardising methodologies and protocols, encouraging a common understanding, widening applications and dissemination. The Action will foster open standards for state-of-the-art documentation of CH. It will simplify the usage of high-resolution optical techniques in CH and define good practice and stimulate research.

Duration:

November 7, 2012 - November 6, 2016

Partners:

1. Royal Belgian Institute of Natural Sciences 29 rue Vautier B-1000 Brussels, Belgium, 2. Aalborg University Fredrik Bajers Vej 5 9100 Aalborg, Denmark, 3. University of Eastern Finland SIB-labs FI-80101 Joensuu, Finland, 4. University of Applied Sciences Mainz Lucy Hillebrand Str. 2 55128 Mainz, Germany, 5. "Athena" Research Center 58 Tsimiski St. GR 67100 Xanthi, Greece, 6. Istituto di Fisica Applicata "Nello Carrara" del Consiglio Nazionale delle Ricerche (IFAC-CNR) Via Madonna del Piano 10 50019 Sesto Fiorentino, Italy, 7. Warsaw University of Technology Boboli 8 02-525 Warsaw, Poland
8. Faculty of Technical Sciences, University of Novi Sad Trg Dositeja Obradovica 6 21 000 Novi Sad, Serbia, 9. Institute of Measurement Science, Slovak Academy of Sciences Dubravska cesta 9 84104 Bratislava, Slovakia, 10. University of Málaga Facultad de Filosofía y Letras 29071 Málaga, Spain, 11. University of Southampton ECS dept. SO17 1BJ Southampton, United Kingdom, 12. Mathematical Institute SANU, Kneza Mihaila 36, 11000 Beograd, Serbia

Researchers from the FTS:

Nataša Sladoje Matić, Tibor Lukić, Slobodan Dražić, Vladimir Ilić, Jovana Radenović, Andrijana Stamenković

Equipment purchased from project funds:

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Projekat COST saradnje:
COST ACTION IC1301 WIPE – WIRELESS POWER TRANSMISSION
Oznaka projekta / akronim:
WiPE
Web:
http://www.biosense.uns.ac.rs/
Rukovodilac projekta:
Vesna Crnojević-Bengin
Rukovodilac projekta sa FTN:
Vesna Crnojević-Bengin
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Osnovna, primenjena i razvojna
Opis projekta:
Projekat ima za cilj da reši efikasno bežični prenos snage. Sistemi i strategije specijalno prilagođene za baterije - manje sisteme, baterija - free sistem, pasivni RFID , Near Field Communications (NFC) su usko povezani koncepti koje koriste VPT i akumulacija energije sistema daljinske snage do mobilnih uređaja ili daljinski punjenje baterije, doprinoseći da se razvija i neguje IOT evolucija . U ovom kontekstu , ovaj predlog ima za cilj približavanje RF kola i sistema različitog porekla na: 1) obezbeđenje poboljšana kolo i podsistema za povećanje efikasnosti u VPT, i 2) istražuje i upotrebu novih materijala i tehnologija koje omogućavaju minimiziranje troškova i maksimalnu integraciju elektronike sa okruženjem i sa ciljnim aplikacijama. Očekuje stvaranje široke mreže stručnjaka kako iz univerziteta tako i industrije koja može da reši postojeće i predstojeće izazove u bežičnim sistemimaza prenos snage na interdisciplinaran način i da se pronađe put za buduće generacije bežičnih rešenja za prenos snage i povezane regulacije. COST je idealan okvir za ujedinjenje na međunarodnom nivou i uspostavljanje Evrope kao vodeće naučne i industrijske zajednice u oblasti bežičnog prenosa energije.
Trajanje projekta:
Oktobar 24 2013 - Oktobar, 23, 2017.
Institucije učesnici / partneri:
Universidade de Aveiro, Portugal Ghent University, Belgium University of Nicosia, Cyprus University of Technology Brno, Czech Republic AAlborg University, Denmark CNRS LAAS & University of Toulouse, France University College Dublin, Ireland
Učesnici – istraživači sa FTN:
dr Vesna Crnojević Bengin dr Vasa Radonić dr Vladimir Crnojević Nikolina Janković Goran Kitić Slobodan Birgermajer Norbert Čeljuska
Oprema nabavljena iz projektnih sredstava:
Nema

COST networking project – Title:
COST ACTION IC1301 WIPE – WIRELESS POWER TRANSMISSION
Project code / acronym:
WiPE
Web site:
http://www.biosense.uns.ac.rs/
Grantholder:
Vesna Crnojević-Bengin
Coordinator from the Faculty of Technical Sciences:
Vesna Crnojević-Bengin
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Fundamental, Applied, Development
Project Summary:
The proposal aims to address efficient Wireless Power Transmission (WPT) circuits, systems and strategies specially tailored for battery-less systems. battery-free sensors, passive RFID, Near Field Communications (NFC); these are all closely related concepts that make use of WPT and energy harvesting systems to remotely power up mobile devices or to remotely charge batteries, contributing to develop and foster the internet of things (IoT) evolution. In this context, this proposal aims at bringing together RF circuit and system designers with different backgrounds to: 1) provide enhanced circuit and subsystem solutions to increase the efficiency in WPT; and 2) investigate the use of novel materials and technologies that allow minimizing cost and maximizing integration of the electronics with the environment and with the targeted applications. The proposal expected benefits include the creation of a wide network of experts both from academia and industry that can address the existing and upcoming challenges in wireless power transmission scenarios in an interdisciplinary manner paving the way for the future generations of wireless power transmission solutions and the associated regulation. COST is an ideal framework towards joining efforts at an international level and establishing Europe as a leading scientific and industrial community in the field of wireless power transmission.
Duration of the project:
October 24 2013 – October, 23, 2017.
Partners:
Universidade de Aveiro, Portugal; Ghent University, Belgium; University of Nicosia, Cyprus ; University of Technology Brno, Czech Republic; Aalborg University, Denmark; CNRS LAAS & University of Toulouse, France; University College Dublin, Ireland
Researchers from the FTS:
dr Vesna Crnojević Bengin dr Vasa Radonić dr Vladimir Crnojević Nikolina Janković Goran Kitić Slobodan Birgermajer Norbert Čeljuska
Equipment purchased from the project funds:
No

Projekat COST saradnje:
NOVI I POUZDANI FIBER-OPTIČKI SENZORSKI SISTEMI ZA BUDUĆE SIGURNOSNE I BEZBEDNOSNE PRIMENE
Oznaka projekta / akronim:
ICT Action COST TD1001
Web:
http://www.cost.eu/domains_actions/ict/Actions/ofsesa/%28glossary%29/off http://www3.ul.ie/td1001/
Rukovodilac projekta:
Dr Sinead OKEEFFE, sinead.okeeffe@ul.ie University of Limerick Optical Fibre Sensors Research Centre
Rukovodilac projekta sa FTN:
Docent dr Miloš Slankamenac
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Optoelektronski senzori/ razvojna
Opis projekta:
Fiber-optički senzori nude praktična rešenje za praćenje ekstremnih parametara vezanih za sigurnosne i bezbednosne aplikacije. Iako su prednosti ovakvih senzora dobro poznate, postoji jedan broj identifikovanih tehničkih problema koji tek treba da se reše. Podržavajući saradnju eksperata iz multidisciplinarnih oblasti, sa razmenom svojih znanja u razvoju dizajna senzora i sistema, zajedno sa razvojem karakterizacija i validacija postupaka, ovi problemi se mogu rešiti i tako nova generacija senzorskih sistema sa optičkim vlakanima može se realizovati i unaprediti fundamentalno stabilni i pouzdani senzori za poboljšanje javne bezbednosti i sigurnosti.
Trajanje projekta:
2011-2014
Institucije učesnici / partneri:
Vrije Universiteit Brussel; Universitas de Mons - Facultas Polytechnique; City University of Hong Kong; Cyprus University of Technology; Frederick University; Institute of Photonic Technology; Federal Institute for Materials Research and Testing (BAM), ; GESO GmbH Jena; National Hellenic Research Foundation; Foundation for Research and Technology - Hellas (FORTH); University of Limerick; ARTTIC Israel International Management Services 2009 LTD; Tel-Aviv University; Second University of Naples Department of Information Engineering Optoelectronics Group; University of Padova; IREA-Nationa Research Council; Institute of Fluid Flow Machinery Polish Academy of Science; Military University of Technology; National Institute of Telecommunications; Institute of Physics, Poland; Universidade da Madeira; National Institute for Laser, Plasma and Radiation Physics; Technical University of Cluj napoca; University of Novi Sad, Faculty of Technical Sciences; Univeristy of Maribor, Faculty of EE and Comp.Sci.; Universidad Publica de Navarra. Optical Communications group; Universidad de Cantabria, Grupo de Ingenieria Fotonica; INTA, Crta. de Ajalvir p.k.4, Spain; Ecole Polytechnique de Lausanne; Sengenia Limited; Aston University, School of Engineering and Applied Science, Birmingham; Photonics Research Group; Heriot-Watt University
Učesnici –istraživači sa FTN
Dr Miloš Slankamenac, Dr Miloš Živanov, Dr Lazo Manojlović, Dipl. mst. Nikola Stojanović, Dipl . mst. Dalibor Sekulić; Dipl . mst. Jovan Bajić, Dipl . mst. Dragan Stupar, Dipl . mst. Vladimir Milosavljević, Dipl . mst. Vladimir Rajs
Oprema nabavljena iz projektnih sredstava

COST networking project – Title:
NOVEL AND RELIABLE OPTICAL FIBRE SENSOR SYSTEMS FOR FUTURE SECURITY AND SAFETY APPLICATIONS (OFSESA)
Project code / acronim:
ICT Action COST TD1001
Web site:
http://www.cost.eu/domains_actions/ict/Actions/ofsesa/%28glossary%29/off http://www3.ul.ie/td1001/
Grandholder
Dr Sinead OKEEFFE, sinead.okeeffe@ul.ie University of Limerick Optical Fibre Sensors Research Centre
Coordinator FTS:
Docent dr Miloš Slankamenac
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Optoelectronics sensors/ Development
Summary:
Optical Fibre Sensors offer a definitive solution to monitoring extreme parameters associated with security and safety applications. While the advantages of such sensors are well known, there are a number of identified technical problems yet to be resolved. By supporting collaboration of experts from multidisciplinary fields, to share their knowledge in sensor development and system design, together with developing characterisation and validation procedures, these problems can be addressed and so new generation optical fibre sensor systems can be realised awarding fundamentally stable and reliable sensors for enhancing public security and safety.
Duration:
2011-2014
Partners:
Vrije Universiteit Brussel; Universitas de Mons - Facultas Polytechnique; City University of Hong Kong; Cyprus University of Technology; Frederick University; Institute of Photonic Technology; Federal Institute for Materials Research and Testing (BAM); GESO GmbH Jena; National Hellenic Research Foundation; Foundation for Research and Technology - Hellas (FORTH); University of Limerick; ARTTIC Israel International Management Services 2009 LTD; Tel-Aviv University; Second University of Naples Department of Information Engineering Optoelectronics Group; University of Padova; IREA-Nationa Research Council; Institute of Fluid Flow Machinery Polish Academy of Science; Military University of Technology; National Institute of Telecommunications; Institute of Physics, Poland; Universidade da Madeira; National Institute for Laser, Plasma and Radiation Physics; Technical University of Cluj napoca; University of Novi Sad, Faculty of Technical Sciences; Univeristy of Maribor, Faculty of EE and Comp.Sci.; Universidad Publica de Navarra. Optical Communications group; Universidad de Cantabria, Grupo de Ingenieria Fotonica; INTA, Crta. de Ajalvir p.k.4, Spain; Ecole Polytechnique de Lausanne; Sengenia Limited; Aston University, School of Engineering and Applied Science, Birmingham; Photonics Research Group; Heriot-Watt University
Researchers *from the FTS:*
Dr Miloš Slankamenac, Dr Miloš Živanov, Dr Lazo Manojlović, Dipl. mst. Nikola Stojanović, Dipl . mst. Dalibor Sekulić; Dipl . mst. Jovan Bajić, Dipl . mst. Dragan Stupar, Dipl . mst. Vladimir Milosavljević, Dipl . mst. Vladimir Rajs
Equipment purchased from project funds:

Projekat COST saradnje:
ISTRAŽIVANJA U OBLASTI DIGITALNE OBRADE SLIKE
Oznaka projekta / akronim:
IC 1005 HDRi: The digital capture, storage, transmission and display of real-world lighting
Web:
http://www.cost.eu/domains_actions/ict/Actions/IC1005; http://www.ic1005-hdri.com/
Rukovodilac projekta:
Prof. Alan Chalmers, University of Warwick, England
Rukovodilac projekta sa FTN:
Prof.dr Željen Trpovski
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Razvojni projekat
Opis projekta:
Razvoj standarda u oblasti generisanja (snimanja), memorisanja, prenosa i prikazivanja širokog opsega vrednosti osvetljenosti slike. Postoje brojne situacije u kojima se slika ne može pravilno generisati ni registrovati jer su neki delovi veoma tamni a drugi preosvetljeni. Obradom ovakve slike može da se postigne dobra vidljivost svih delova slike.
Trajanje projekta:
do 15.05.2015.
Institucije učesnici / partneri:
Saradnici iz 23 evropske zemlje.
Učesnici – istraživači sa FTN:
Prof. dr Željen Trpovski i studenti koji rade diplomske radove u ovoj oblasti (Bojan i Neda Pištinjat, Viktor Kerkez)
Oprema nabavljena iz projektnih sredstava:

COST networking project – Title:
IC 1005 HDRI: THE DIGITAL CAPTURE, STORAGE, TRANSMISSION AND DISPLAY OF REAL-WORLD LIGHTING
Project code / acronym:
IC 1005 HDRi
Web site:
http://www.cost.eu/domains_actions/ict/Actions/IC1005; http://www.ic1005-hdri.com/
Grantholder:
Prof. Alan Chalmers, University of Warwick, England
Coordinator from the Faculty of Technical Sciences:
Prof. Željen Trpovski
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Development Project
Project Summary:
The natural world presents our eyes with a wide range of colours and intensities from moonlight to bright sunshine. We can see detail in regions that vary significantly in luminance. Current imaging techniques are incapable of accurately capturing or displaying such a range of lighting. Some areas under-exposed and others over-exposed. High Dynamic Range (HDR) imaging can capture, store, transmit and deliver real-world lighting. This gives a step change in viewing experience, for example the ability to clearly see the football when it is kicked from the shadow of the stadium into sunshine. This COST Action assembles leading academic and industrial researchers and practitioners to propose a set of standards for the complete HDR pipeline and establish Europe firmly as the world leader in HDR.
Duration of the project:
Until 15.05.2015.
Partners:
Experts from 23 European countries
Researchers from the FTS:
Dr Željen Trpovski and students working diploma and master thesis in the field (Bojan Pištinjat, Viktor Kerkez)
Equipment purchased from the project funds:
-
Project budget:

Projekat COST saradnje:
NOVE MOGUĆNOSTI ZA ŠTAMPANE MEDIJE I AMABALAŽU – KOMBINOVANJE ŠTAMPE SA DIGITALNOM TEHNOLOGIJOM
Oznaka projekta / akronim:
FPS COST Action FP1104
Web:
http://www.cost.eu/domains_actions/fps/Actions/FP1104, http://virtual.vtt.fi/virtual/cost/index.htm
Rukovodilac projekta:
Dr Anu SEISTO
Rukovodilac projekta sa FTN:
Dr Igor Karlović
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Razvojna
Opis projekta:
Cilj ove akcije je da promoviše raspravu o prednostima koje se može postići od novih kombinacija i digitalne štampe . Takođe će se koristiti za poboljšanje inovacije koje će iskoristiti sve prednosti i štampanih i elektronskih medija , kao i inovacije u kojima se kombinuju štampani i elektronski mediji . Nekoliko primera gde postoje uspešne kombinacije postignuti su na primer kroz korišćenje slike priznanja, Augmented Realiti ili štampane elektronike da donese interaktivnost u vlakana na bazi proizvoda . Da daju šumarske privrede konkurentsku prednost ove akcije će se baviti novim inovacijama kombinovanjem znanja za krajnje korisnike sa najnovijim tehnološkim dostignućima . Novi modeli u toku promena u socijalnoj interakciji i u kulturnim proizvodima od papira i elektronskih medija će biti razrađen i predložen . Rezultati će promovisati kritički i teorijski diskusiju o promeni značenja savremene medijske kulture . Akcija će se istražiti nove poslovne mogućnosti za vlakna na bazi proizvoda i lanci vrednosti štampanih medija i pakovanja kroz roman , inovativnih upotreba . Takođe će poslužiti kao kanal za komunikaciju između industrije i univerziteta , doprinoseći tako razvoju novih komercijalnih aplikacija
Trajanje projekta:
2012-2016
Institucije učesnici / partneri:
VTT Vuorimiehentie, Gheorghe Asachi Technical University of Iasi, University of Applied SciencesSoftwarepark, Vrije Universiteit BrusselDepartment of Computer Science, University of Zagreb Faculty of Graphic, University of Pardubice, Aalborg University in Copenhagen, University of Tampere, School of Information Sciences, University of Tampere, University of Erfur, Technological Educational Institute (T.E.I) of Athens, Buda University, Faculty of Light Industry and Environmental Protection Engineering, Consiglio per la Ricerca e la Sperimentazione in Agricoltura - Unit di Ricerca per IIngegneria Agrariavia della Pascolare,Kenniscentrum Papier en KartonI, Vestfold University College, Faculty of Chemistry Jagiellonian University, IADISRua de So Sebastiao da Pedreira, Institute of Chemistry, Technology and Metallurgy (ICTM) - Centre of Microelectronic Technologies and Single Crystals, Faculty of Technical Sciences, Technical University in Zvolen, University of Ljubljana, Faculty of Natural Sciences and Engineering, Mid Sweden University, Swansea UniversitySingleton, Digital World Research CentreFaculty of Arts & Human Sciences, University of Surrey
Učesnici – istraživači sa FTN:
Igor Karlović, Živko Pavlović
Oprema nabavljena iz projektnih sredstava:

COST networking project – Title:
NEW POSSIBILITES FOR PRINT MEDIA AND PACKAGING – COMBINING PRINT WITH DIGITAL
Project code / acronym:
FPS COST Action FP1104
Web site:
http://www.cost.eu/domains_actions/fps/Actions/FP1104, http://virtual.vtt.fi/virtual/cost/index.htm
Grantholder:
Dr Anu SEISTO
Coordinator from the Faculty of Technical Sciences:
Dr Igor Karlović
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Development
Project Summary:
The goal of this Action is to promote discussion on the benefits that may be achieved from novel combinations of print and digital. It will also be used to enhance innovations that will make use of the benefits of both print and electronic media as well as innovations where print and electronic media are combined. Several examples exist where successful combinations have been achieved e.g. through the use of image recognition, augmented reality or printed electronics to bring interactivity into fiber based products. To give the forest industry a competitive edge this Action will focus on new innovations by combining knowledge of the end users with most recent technological achievements. New models of ongoing change in social interaction and in the cultural products of paper and electronic media will be elaborated and proposed. The results will promote critical and theoretical discussion on the changing meanings of contemporary media culture. The Action will explore new business opportunities for the fiber based products and the value chains of print media and packaging through novel, innovative uses. It will also serve as a channel for communication between industry and academia, thus contributing to the development of new commercial applications.
Duration of the project:
2012-2016
Partners:
VTT Vuorimiehentie, Gheorghe Asachi Technical University of Iasi, University of Applied SciencesSoftwarepark, Vrije Universiteit BrusselDepartment of Computer Science, University of Zagreb Faculty of Graphic, University of Pardubice, Aalborg University in Copenhagen, University of Tampere, School of Information Sciences, University of Tampere, University of Erfur, Technological Educational Institute (T.E.I) of Athens, Buda University, Faculty of Light Industry and Environmental Protection Engineering, Consiglio per la Ricerca e la Sperimentazione in Agricoltura - Unit di Ricerca per IIngegneria Agrariavia della Pascolare,Kenniscentrum Papier en KartonI, Vestfold University College, Faculty of Chemistry Jagiellonian University, IADISRua de So Sebastiao da Pedreira, Institute of Chemistry, Technology and Metallurgy (ICTM) - Centre of Microelectronic Technologies and Single Crystals, Faculty of Technical Sciences, Technical University in Zvolen, University of Ljubljana, Faculty of Natural Sciences and Engineering, Mid Sweden University, Swansea UniversitySingleton, Digital World Research CentreFaculty of Arts & Human Sciences, University of Surrey
Researchers from the FTS:
Dr Igor Karlović, Dr Živko Pavlović
Equipment purchased from the project funds:

Projekat COST saradnje:
STRATEGIES D'EVALUATION, MACHINES ABSTRAITES ET CONTROLE DELIMITE
Oznaka projekta / akronim:
SEMACODE
Web:
Rukovodilac projekta:
Alexis Saurin
Rukovodilac projekta sa FTN:
Silvia Gilezan
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
osnovna
Opis projekta:
FORMALIZACIJA STRATEGIJA EVALUACIJE U FUNKCIONALNIM PROGRAMSKIM JEZICIMA. DIREKTNA INKORPORACIJA OPERATORA KONTROLE U „CALL-BY-NEED“ . RAZVOJ JEDINSTVENE PLATFORME ZA „CALL-BY-NAME“ I „CALL-BY-VALUE“ RACUNA SA OPERATORIMA KONTROLE.
Trajanje projekta:
2011-2014
Institucije učesnici / partneri:
INRIA, ROCQUENCOURT *UNIVERSITY PARIS DIDEROT (PARIS 7)* *UNIVERSITY OF BOLOGNA* *UNIVERSITY OF OREGON* *UNIVERSITY OF NOVI SAD*
Učesnici – istraživači sa FTN:
Jelena Ivetic, Jovana Obradovic, Silvia Gilezan
Oprema nabavljena iz projektnih sredstava: -
-

COST networking project title:
STRATEGIES D'EVALUATION, MACHINES ABSTRAITES ET CONTROLE DELIMITE
Project code / acronym:
SEMACODE
Web site:
Grantholder:
ALEXIS SAURIN
Coordinator from the Faculty of Technical Sciences:
SILVIA GHILEZAN
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Fundamental
Project Summary:
To formalize particular evaluation strategies of functional languages, in particular to directly incorporate control operators in call-by-need and to develop a uniform framework for call- by-value and call-by-name calculi with delimited control.
Duration of the project:
2011-2014
Partners:
INRIA, ROCQUENCOURT *UNIVERSITY PARIS DIDEROT (PARIS 7)* *UNIVERSITY OF BOLOGNA* *UNIVERSITY OF OREGON* *UNIVERSITY OF NOVI SAD*
Researchers from the FTS:
JELENA IVETIC, JOVANA OBRADOVIC, SILVIA GHILEZAN
Equipment purchased from the project funds:
-

Projekat COST saradnje:
EVROPSKA MREŽA ZA UNAPREĐENJE RAZUMEVANJA I KORIŠĆENJA TLA ISPOD NAŠIH GRADOVA
Oznaka projekta / akronim:
SUB-URBAN
***Web*:**
http://sub-urban.squarespace.com
Rukovodilac projekta:
Dr Seumas Campbell, Velika Britanija
Rukovodilac projekta sa FTN:
Dr Stojanović Đurica
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Razvoj
Opis projekta:
Urbanizacija koja se sprovodi širom sveta dovela je u pitanje održivi razvoj i otpornost gradova. Uprkos tome, značaj terena koji se nalazi ispod gradova je često zanemaren. Osnovni cilj akcije je da se obezbedi dugoročni doprinos većoj interakciji i povezivanju stručnjaka koji razvijaju znanje o urbanim procesima i onih koji mogu imati najviše koristi od toga - donosioca odluka, praktičarima i široj istraživačkoj zajednici. Akcija će uspostaviti mrežu da koordiniše, integriše i ubrza vodeća svetska istraživanja u oblikovanju urbanog tla.
Trajanje projekta:
2013. – 2017.
Institucije učesnici / partneri:
Saradnici iz 27 evropskih zemalja Međunarodni partneri: Bangladeš i Hong Kong
Učesnici –istraživači sa FTN
Dr Stojanović Đurica
Oprema nabavljena iz projektnih sredstava

COST networking project title:
A EUROPEAN NETWORK TO IMPROVE UNDERSTANDING AND USE OF THE GROUND BENEATH OUR CITIES
Project code / acronym:
SUB-URBAN
Web site:
http://sub-urban.squarespace.com/
Grantholder
Dr Seumas Campbell, GB
Coordinator FTS:
Dr Stojanović Đurica
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Development
Summary:
Increasing urbanisation throughout the world challenges the sustainable development and resilience of cities. Despite this, the importance of the ground beneath cities is under-recognised and often overlooked. The main aim of the Action is to provide a long-needed contribution to greater interaction and networking, and so transform the relationship between experts who develop urban subsurface knowledge and those who can benefit most from it - urban decision makers, practitioners and the wider research community. The Action will establish a network to co-ordinate, integrate and accelerate the world-leading research into modelling the subsurface taking place in European institutions and to develop a Toolbox to enable subsurface knowledge to be widely disseminated.
Duration:
2013. – 2017.
Partners:
Experts from 27 European countries International Partner Countries: Bangladesh and Hong Kong
Researchers from the FTS:
Dr Stojanović Đurica
Equipment purchased from project funds:

Projekat COST saradnje:
PRENOS INŽENJERSKIH NANOMATERIJALA OD TRETMANA OTPADNIH I ATMOSFERSKIH VODA DO REKA
Oznaka projekta / akronim:
ENTER
***Web*:**
http://www.es1205.eu/
Rukovodilac projekta:
Dr Lars Duester, Nemačka
Rukovodilac projekta sa FTN:
Dr Miljana Prica
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Razvoj
Opis projekta:
Prenos inženjerskih nanomaterijala od tretmana otpadnih i atmosferskih voda do reka (ENTER) zahteva odgovore na sledeća pitanja: koja količina inženjerskog nanomaterijala (ENM) je puštena, kolika je njihova otpornost, u kojoj meri uzrokuje toksičnost? Razlozi za propuste u obaveštenosti leže u nedostataku odgovarajućih analitičkih metoda, nepotpunoj bazi podataka o korišćenju, oslobađanju i odsustvu obimne monitoring mreže. ENTER će pomoći unapređenju naučnih saznanja o oslobađanju i sudbini ENM u hidrološkom ciklusu u urbanim sredinama i prenosu stručnog znanja na građane. ENTER će ukloniti barijere između nauke i pritiska javnosti intenzivnim naučnim prezentacijama.
Trajanje projekta:
2013. – 2017.
***Institucije učesnici / partneri**:*
Saradnici iz 26 evropskih zemalja Međunarodni partneri: Tunis, Kanada i Singapur
Učesnici –istraživači sa FTN
Dr Miljana Prica
Oprema nabavljena iz projektnih sredstava

COST networking project title:
THE TRANSFER OF ENGINEERED NANOMATERIALS FROM WASTEWATER TREATMENT & STORMWATER TO RIVERS
Project code / acronym:
ENTER
Web site:
http://www.es1205.eu/
Grantholder
Dr Lars Duester, Germany
Coordinator FTS:
Dr Miljana Prica
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Development
Summary:
New and unprecedented sources of geographic information have recently become available in the form of user-generated Web content. The integration and application of these sources, often termed volunteered geographic information (VGI), offers multidisciplinary scientists an unprecedented opportunity to conduct research on a variety of topics at multiple spatial and temporal scales. Since applications generating VGI are not often designed specifically for data production or analytical purposes, the Action aims at the following to fill this gap, recognizing the potential value of these sources to the EU in citizen-based decision making by: 1) define VGI sources, share and develop data retrieval software, assess VGI quality, 2) define standardization criteria for interoperability with other datasets, 3) identify applications and transfer these applications to business implementation (market analysis, risk management, advertising, etc.).
Duration:
2013. – 2017.
Partners:
Experts from 26 European countries International Partner Countries: Tunisia, Canada and Singapore
Researchers from the FTS:
Dr Miljana Prica
Equipment purchased from project funds:

Projekat COST saradnje:
REZULTATI ISTRAŽIVANJA EVROPSKE MREŽE O GEOPROSTORNIM INFORMACIJAMA DOBIJENIM PUTEM JAVNIH POZIVA
Oznaka projekta / akronim:
ENERGIC
***Web*:**
http://vgibox.eu/
Rukovodilac projekta:
Cristina Capineri, Italija
Rukovodilac projekta sa FTN:
Dr Imre Lendak
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Razvoj
Opis projekta:
Novi i do sada nepoznati izvori geografskih informacija su nedavno postali dostupni u formi korisničko-generisanih web sadržaja. Integracija i primena ovih izvora (VGI) nudi multidisciplinarnim naučnicima jedinstvenu priliku da sprovedu istraživanje o različitim temama na više uzoraka. Pošto aplikacije koje generiše VGI nisu često dizajnirane specijalno za proizvodnju podataka ili u analitičke svrhe, ova akcija nastoji da nadomesti taj nedostatak prepoznavanjem potencijalnih izvora u EU na bazi odlučivanja građana : 1) definisanje VGI izvora, sakuplajnje podataka, procena kvaliteta VGI, 2) definisanje standarda kriterijuma za interoperabilnost sa drugim bazama podataka, 3) identifikacija aplikacije i njena primena na poslovnu implementaciju (analiza tržišta, upravljanje rizikom, oglašavanje, itd).
Trajanje projekta:
2012. – 2016.
***Institucije učesnici / partneri**:*
Saradnici iz 24 evropske zemlje Međunarodni partneri: SAD i Novi Zeland
Učesnici –istraživači sa FTN
Dr Imre Lendak, Dr Stevan Gostojić
Oprema nabavljena iz projektnih sredstava

COST networking project title:
EUROPEAN NETWORK EXPLORING RESEARCH INTO GEOSPATIAL INFORMATION CROWDSOURCING: SOFTWARE AND METHODOLOGIES FOR HARNESSING GEOGRAPHIC INFORMATION FROM THE CROWD
Project code / acronym:
ENERGIC
Web site:
http://vgibox.eu/
Grantholder
Cristina Capineri, Italia
Coordinator FTS:
Dr Imre Lendak
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Development
Summary:
New and unprecedented sources of geographic information have recently become available in the form of user-generated Web content. The integration and application of these sources, often termed volunteered geographic information (VGI), offers multidisciplinary scientists an unprecedented opportunity to conduct research on a variety of topics at multiple spatial and temporal scales. Since applications generating VGI are not often designed specifically for data production or analytical purposes, the Action aims at the following to fill this gap, recognizing the potential value of these sources to the EU in citizen-based decision making by: 1) define VGI sources, share and develop data retrieval software, assess VGI quality, 2) define standardization criteria for interoperability with other datasets, 3) identify applications and transfer these applications to business implementation (market analysis, risk management, advertising, etc.).
Duration:
2012. – 2016.
Partners:
Experts from 24 European countries International Partner Countries: USA and New Zealand
Researchers from the FTS:
Dr Imre Lendak, Dr Stevan Gostojić
Equipment purchased from project funds:

Projekat COST saradnje:
EVROPSKA MREŽA ZA INOVATIVNU UPOTREBU EMF U BIOMEDICINSKIM APLIKACIJAMA
Oznaka projekta / akronim:
EMF-MED
***Web*:**
http://cost-emf-med.eu/
Rukovodilac projekta:
Dr Antonio Šarolić, Hrvatska
Rukovodilac projekta sa FTN:
Dr Nikola Đurić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Razvoj
Opis projekta:
Akcija će obezbediti kooperativni okvir za podršku istraživanju o korisnim biološkim efektima nejonizujućih elektromagnetnih polja (EMF) i njihovoj upotrebi u biomedicini. Istraživanje bioloških efekata EMF je tradicionalno usmereno na zdravstvene rizike. Inspirisana uspehom nedavne studije o korisnim biomedicinskim EMF interakcijama i aplikacijama, ova akcija biće usmerena na korisne efekte, u cilju podizanja rezultata kroz nova otkrića i inovativne biomedicinske tehnologije. Akcija će obezbediti bolje razumevanje osnovnih fizičkih i bioloških interakcionih mehanizama koje se odnose na aplikacije za rak.
Trajanje projekta:
2014. – 2018.
***Institucije učesnici / partneri**:*
Saradnici iz 31 evropske zemlje Međunarodni partneri: SAD
Učesnici –istraživači sa FTN
Dr Nikola Đurić
Oprema nabavljena iz projektnih sredstava

COST networking project title:
EUROPEAN NETWORK FOR INNOVATIVE USES OF EMFS IN BIOMEDICAL APPLICATIONS
Project code / acronym:
EMF-MED
Web site:
http://cost-emf-med.eu/
Grantholder
Dr Antonio Šarolić, Croatia
Coordinator FTS:
Dr Nikola Đurić
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Development
Summary:
The Action will provide a cooperative framework to support the research on beneficial biological effects of non-ionizing electromagnetic fields (EMFs) and their use in biomedical applications. Research on biological effects of EMFs has traditionally focused on health risks. Inspired by promising recent studies on useful biomedical EMF interactions and applications, this Action will focus on beneficial effects, aiming for breakthrough results, new discoveries and innovative biomedical technologies. The Action will provide a better understanding of underlying physical and biological interaction mechanisms, related to both cancer and non-cancer applications, filling the gaps in the present state of knowledge.
Duration:
2014. - 2018.
Partners:
Experts from 31 European countries International Partner Countries: USA
Researchers from the FTS:
Dr Nikola Đurić
Equipment purchased from project funds:

Projekat COST saradnje:
3D KREIRANJE SADRŽAJA, ŠIFROVANJE I PRENOS PREKO BUDUĆE MEDIJSKE MREŽE
Oznaka projekta / akronim:
3D-ConTourNet
***Web*:**
http://www.3d-contournet.eu/
Rukovodilac projekta:
Professor Pedro Assuncao, Portugal
Rukovodilac projekta sa FTN:
Dr Dragan Kukolj
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna)
Razvoj
Opis projekta:
Ova Akcija predstavlja koordinisanu istraživačku saradnju, na 3D multimedijalnom kreiranju, šifrovanju, isporuci i prijemu servisa i aplikacija preko budućih mrežnih tehnologija. Naučni okvir je osmišljen tako da integriše glavne elemente lanca isporuke, kao što su 3D kreacije sadržaja i razvoj šifrovanja, prenos preko heterogenih mreža i potrošnja korisnika, uzimajući vizuelni kvalitet kao ključni faktor ukupnog učinka. Trenutno je u Evropi aktuelno nekoliko pojedinačnih R&D akcija usmerenih na 3D tehnologiju. Ova Akcija ima za cilj da skupi i objedini rasute napore i integriše sve tehnološke elemente sa percepcijom korisnika 3D kvaliteta. Da bi se postigao taj cilj, ova akcija pospešuje saradnju između istraživača i industrijskih stručnjaka, predviđajući proizvodnju tehničkih i naučnih dostignuća za istraživače, naučnike, inženjere i menadžere, preporukom novog poslovnog modela za sadržaje i usluge kroz zajedničke sastanke širom akademskih institucija i industrijskog sektora, dokumentacijom i multimedijalnim prezentacijama 3D tehnologija.
Trajanje projekta:
2012. – 2016.
***Institucije učesnici / partneri**:*
Saradnici iz 26 evropskih zemalja Međunarodni partneri: Brazil i Australija
Učesnici –istraživači sa FTN
Dragan Kukolj, Dr Vladimir Zlokolica
Oprema nabavljena iz projektnih sredstava

COST networking project title:
3D CONTENT CREATION, CODING AND TRANSMISSION OVER FUTURE MEDIA NETWORKS
Project code / acronym:
3D-ConTourNet
Web site:
http://www.3d-contournet.eu/
Grantholder
Professor Pedro Assuncao, Portugal
Coordinator FTS:
Dr Dragan Kukolj
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Development
Summary:
This Action undertakes coordinated research collaboration, at European level, in 3D multimedia creation, encoding, delivery and reception of services and applications over future networking technologies. A scientific framework is devised to integrate the main elements of the delivery chain, such as 3D content creation and encoding evolution, transmission across heterogeneous networks and user consumption, taking perceived quality as an overall key performance factor. Several individual R&D efforts are currently running across Europe, targeted at 3D technologies. This Action aims at beyond this trend by tightening closer together scattered efforts and integrating all technological elements with user 3D quality perception. To reach this goal, this Action fuels cooperation between researchers and industry experts, envisaging production of technical and scientific deliverables for researchers, scientists, engineers and managers, new business model recommendations for content and service providers through joint meetings across academia and industry, plus documentation and multimedia presentations to promote 3D technology in the society.
Duration:
2012. – 2016.
Partners:
Experts from 26 European countries International Partner Countries: Brasil and Australia
Researchers from the FTS:
Dr Dragan Kukolj, Dr Vladimir Zlokolica
Equipment purchased from project funds:

Međunarodni projekti

CEEPUS III/IV

International projects

CEEPUS III/IV

Naziv CEEPUS III projekta:
PRIMENA I DIJAGNOSTIKA ELEKTRIČNE PLAZME
Oznaka projekta / akronim:
CIII-AT-0063-10-1415
Web:
http://www.ceepus.info
Rukovodilac projekta:
Prof.Dr. Roman SCHRITTWIESER
Rukovodilac projekta sa FTN:
Prof. dr Branko Škorić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Plazma fizika/primenjene
Širenje stručnosti i iskustva svih oblasti moderne primenjene fizike plazme , uključujući i ispuštanje u tečnostima , Fusion fizike i nanotehnologije , kako da se izgradi u svim zemljama sa PPUs grupama stručnjaka koji su obučeni u ovim oblastima i na taj način postaju u stanju da se nosi sa različite zahteve , zahteve i veštine brojnih aplikacija fiziku u modernu tehnologiju i energije fizike .Širenje stručnosti i iskustva svih oblasti moderne primenjene fizike plazme , uključujući i ispuštanje u tečnostima , Fusion fizike i nanotehnologije , kako da se izgradi u svim zemljama sa PPUs grupama stručnjaka koji su obučeni u ovim oblastima i na taj način postaju u stanju da se nosi sa različite zahteve , zahteve i veštine brojnih aplikacija fiziku u modernu tehnologiju i energije fizike .
Trajanje projekta:
Od 2006. godine
Institucije učesnici / partneri:
University of Innsbruck St. Kliment Ohridski Sofia University Charles University in Prague Brno University of Technology Masaryk University in Brno State University of Balti ,,Alecu Russo University of Montenegro "OVIDIUS" UNIVERSITY OF CONSTANTA ALEXANDRU IOAN CUZA" UNIVERSITY OF IASI University of Novi Sad University of Ljubljana Comenius University in Bratislava
Učesnici – istraživači sa FTN:
Prof. dr Branko Škorić *Prof. dr Damir Kakaš* *Ist. saradnik Aleksandar Miletić* *Ist. saradnik Pal Terek* *Asistent Lazar Kovačević*
Oprema nabavljena iz projektnih sredstava:

CEEPUS III PROJECT - Title:
APPLICATIONS AND DIAGNOSTICS OF ELECTRIC PLASMAS
Project code / acronym:
CIII-AT-0063-10-1415
Web site:
http://www.ceepus.info
Grantholder:
Prof.Dr. Roman SCHRITTWIESER
Coordinator from the Faculty of Technical Sciences:
Prof. dr Branko Škorić
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Plasma physics/Development
Project Summary:
Dissemination of expertise and experience all fields of modern applied plasma physics, including discharges in liquids, fusion physics and nanotechnology, in order to build up in all countries with PPUs groups of specialists that are trained in these fields and thereby become able to cope with the different requirements, demands and skills of the numerous plasma physics applications in modern technology and energy physics.
Duration of the project:
From 2006.
Partners:
University of Innsbruck St. Kliment Ohridski Sofia University Charles University in Prague Brno University of Technology Masaryk University in Brno State University of Balti ,,Alecu Russo University of Montenegro "OVIDIUS" UNIVERSITY OF CONSTANTA ALEXANDRU IOAN CUZA" UNIVERSITY OF IASI University of Novi Sad University of Ljubljana Comenius University in Bratislava
Researchers from the FTS:
Prof. dr Branko Škorić *Prof. dr Damir Kakaš* *Ist. saradnik Aleksandar Miletić* *Ist. saradnik Pal Terek* *Asistent Lazar Kovačević*
Equipment purchased from the project funds:
-

Naziv CEEPUS III projekta:

PROCESIRANJE SLIKA, INFORMACIONI INŽENJERING I RAZMENA INTERDISCIPLINARNIH ZNANJA

Oznaka projekta / akronim:

CIII-AT-0042-07-1112

Web:

http://www.ceepus.info/public/network/network_detail.aspx

Rukovodilac projekta:

Prof.dr Erich Sorantin, Department of Radiology, Medical University of Graz

Rukovodilac projekta sa FTN:

Prof. dr Nataša Sladoje

Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):

Razvojna

Opis projekta:

A) Obrazovne aktivnosti:
A.1.) Organizacija letnje škole procesiranja slika "Summer School on Image Processing 2012", University of Vienna (Beč, Austrija) (informacije na adresi http://www.inf.u-szeged.hu/~ssip/). SSIP je jedina letnja škola u oblasti procesiranja slika u regionu Centralne Evrope, a redovno se organizuje u okviru ovog projekta.
A.2.) Učešće u organizaciji CT škole, "CT School 2012", koja se od 2003 održava u Kliničkom Centru u Novom Sadu. (Informacije na adresi http://www.ctschool.eu/) Škola ima veliki ugled u regionu, i nudi razmenu ekspertskih znanja u oblasti radiologije. Učesnici ovog CEEPUS projekta participiraju u CT školi i kao polaznici i kao predavači.
A.3.) Organizacija Prolećne škole dečije hirurgije, "Spring School for Pediatric Surgery" u Tirani (Albanija); u okviru ove škole omogućena je uzajamna sveobuhvata razmena znanja i informacija u oblasti dečije hirurgije.
Svi navedeni kursevi (škole) predstavljaju značajne akademske obrazovne aktivnosti u oblasti Centralne Evrope, tokom kojih se ujedno koristi i prilika za dalje razgovore o planiranoj saradnji, harmonizaciji i razmeni znanja i resursa u okviru ovog CEEPUS projekta.
B) Učenje na daljinu:
Partner u okviru ovog CEEPUS projekta, Technical University Cluj-Napoca (Rumunija), obezbeđuje izvanredno sredstvo koje služi kao osnova za učenje na daljinu – "tele-teaching". Svi kursevi iz oblasti procesirana slika u medicini, relevantni za projekat i njegove učesnike, koji se organizuju na bio kom od univerziteta članova ovog CEEPUS projekta se na taj način stavljaju na raspolaganje svim učesnicima projekta i predstavljaju zajedničku bazu znanja, dostupnu širokoj grupi korisnika.
C) Nučno-istraživačka saradnja u oblasti procesiranja medicinskih slika odvija se u vezi sa sledećim temama
C.1.) Rekonstrukcija, segmentacija, poboljšanje ulaznih podataka;
C.2.) Virtuelna sonografija i sonografija pluća;
C.3.) Neinvazivna studija (registracija) disanja kod čoveka.
D) U okviru projekta odvija se i aktiva saradnja u oblasti pedijatrije i pedijatrijske hirurgije.
E) U okviru projekta razvija se i razmena znanja u oblasti pedijatrijske radiologije I zaštite od zračenja, u cilju smanjenja rizika od oboljevanja od raka usled medicinske dijagnostike tokom medicinskih snimanja.

Trajanje projekta:

2011. – 2012. - 2013. - 2014. (Projekat neprekidno traje od 2005. sa redovnim godišnjim produžavanjima)

Institucije učesnici / partneri:

University of Tirana, Medical University of Graz, Medical University of Vienna, University of Sarajevo, University of Zagreb, University of Rijeka, University of Szeged, University of Debrecen, University of Prishtina, University Sts.Cyril and Methodius – Skopje, State University of Tetovo, University of Montenegro, Koszalin University of Technology, "Iuliu Hatieganu" University of Medicine and Pharmacy of Cluj Napoca, Technical University of Cluj-Napoca, "Transilvania" University of Brasov, University of Novi Sad, Belgrade University

Učesnici –istraživači sa FTN:

Nataša Sladoje, Tibor Lukić

Oprema nabavljena iz projektnih sredstava:

CEEPUS III PROJECT - Title:

IMAGE PROCESSING, INFORMATION ENGINEERING & INTERDISCIPLINARY KNOWLEDGE EXCHANGE

Project code / acronym:

CIII-AT-0042-07-1112

Web site:

http://www.ceepus.info/public/network/network_detail.aspx

Grantholder:

Prof.Dr. Erich Sorantin, Department of Radiology, Medical University of Graz

Coordinator FTS:

Prof. Dr. Nataša Sladoje

Scientific Research Fields / Type of research (Fundamental / Applied / Development):

Development

Summary:

A) Educational:
A.1.) Organisation of the "Summer School on Image Processing 2012" , University of Vienna (Austria) (for SSIP please see http://www.inf.u-szeged.hu/~ssip/). The SSIP is the only summer school in the area of image processing.
A.2.) Organisation and Participation on the"CT School 2012" of the Clinical Center Novi Sad / Serbia (http://www.ctschool.eu/): provides high level medical education within the Central European region since 2003. Medical partners of the CEEPUS network will send participants as well as academic teachers.
A.3.) Organisation of the “Spring School for Pediatric Surgery” in Tirana / Albania: this should ensure mutual information and knowledge exchange in the field of pediatric surgery. This school covers a major topic completely.
The mentioned courses represent major academic educational events within Central Europe, where also topics of harmonisation, further cooperations as well as exchange are discussed.
B) Remote Teaching:
The excellent tool of the CEEPUS partners at the Technical University Cluj-Napoca (Romania) forms the professional basis for teleteaching. Courses for all partners in medical imaging and corresponding transmission protocols and standards are of common interest – thus enabling spreading the excellence of this network to a greater community at no costs.
C) Further Cooperation in the field of medical image processing, reconstruction and Augmented Reality concerning the following topics:
C.1.) Image reconstruction, segmentation and enhancement
C.2.) Virtual Sonography and Lung sonography
C.3.) Non invasive registration of human breathing:
D) Cooperation in the field of Pediatrics and Pediatric Surgery
E) Knowledge Exchange in the field Pediatric Radiology and radiation protection – thus paying attention to reduce the cancer risk induced by medical imaging.

Duration:

2011-2012 (The project is active since 2005, and its extensions are approved every year)

Partners:

University of Tirana, Medical University of Graz, Medical University of Vienna, University of Sarajevo, University of Zagreb, University of Rijeka, University of Szeged, University of Debrecen, University of Prishtina, University Sts.Cyril and Methodius – Skopje, State University of Tetovo, University of Montenegro, Koszalin University of Technology, "Iuliu Hatieganu" University of Medicine and Pharmacy of Cluj Napoca, Technical University of Cluj-Napoca, “Transilvania” University of Brasov, University of Novi Sad, Belgrade University

Researchers from the FTS:

Nataša Sladoje, Tibor Lukić

Equipment purchased from project funds:

Naziv CEEPUS III projekta:
NANOTEHNOLOGIJE, MATERIJALI I NOVE PROIZVODNE TEHNOLOGIJE
Oznaka projekta / akronim:
CIII-BG-0613-04-1415
Web:
https://www.ceepus.info/public/network/network.aspx
Rukovodilac projekta:
Rukovodilac projekta sa FTN:
Dr Miodrag Zlokolica
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvoja)
Razvojna
Opis projekta:
Proizvodnja gotovo svih masovno proizvedenih pojedinačnih delova zahteva module koji se koriste u procesima proizvodnje kao što su kovanje, presovanje, utiskivanje i livenje, tako da projektovanje i proizvodnja modula predstavlja veoma važan aspekt u celom proizvodnom ciklusu. Proizvodnja kalupa zauzima ključnu poziciju u proizvodnji komponenti u gotovo svim industrijskim granama a posebno u transportu i prozvodnji potrošačke elektronike. Nekonvencionalni mašinski procesi su specijalizovane operacije koje koriste industrijske kompanije širom sveta. Oni su posebno važni za oblikovanje i obradu materijala koji se teško obrađuju ustaljenim metodama i smatraju se komplementarnim tehnologijama u postojećim praksama. Oblasti na koje se mogu primeniti nanotehnologije, materijali i nove proizvodne tehnologije razvijene u akcijama CEEPUS mreže su široke i kreću se od kućnih aparata do elektronike, automobila i medicinske opreme.
Trajanje projekta:
2012. – 2014.
Institucije učesnici / partneri:
Univerzitet u Novom Sadu, Fakultet tehničkih nauka, Tehnički Univerzitet u Beču, Univerzitet u Mostaru, Tehnički Univerzitet u Sofiji, Univerzitet u Osijeku, Tehnički Univerzitet u Ostravi, Tehnički Univerzitet u Pragu, Univerzitet Usti na Labi, Univerzitet Miškolc, Univerzitet Ćirilo i Metodije Skoplje, Univerzitet u Balti, Univerzitet Crne Gore, Univerzitet u Poznanju, Univerzitet u Krakovu, Univerzitet Oradea, Univerzitet u Galati, Univerzitet Kluž-Napoka, Univerzitet u Nišu, Univeritet u Zvolenu, Univerzitet u Žilini, Univerzitet u Bratislavi, Slovački tehnički univerzitet u Bratislavi
Učesnici –istraživači sa FTN
Dr Miodrag Zlokolica
Oprema nabavljena iz projektnih sredstava

CEEPUS III PROJECT - Title:
NANOTECHNOLOGIES, MATERIALS AND NEW PRODUCTION TECHNOLOGIES
Project code / acromin:
CIII-BG-0613-04-1415
Web site:
https://www.ceepus.info/public/network/network.aspx
Grandholder
Coordinator FTS:
Dr Miodrag Zlokolica
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Development
Summary:
The manufacturing of nearly all mass produced discrete parts require dies and moulds that are used in production processes such as forging, stamping, casting and injection moulding. Thus, the design and manufacturing of dies and moulds represent a very crucial aspect of the entire production chain. So, the die and mould making has a key position in manufacturing components in virtually all industries but especially in transportation, consumer electronics and consumer good industries. Unconventional machining processes are specialized operation used by industrial companies world wide. They are particularly applicable for the shaping and finishing of materials that are difficult to tackle by established methods of machining and are often regarded as complementary technologies to existing practices. The fields to which the nanotechnologies, materials and new production technologies developed in the CEEPUS network tasks can be applied is wide, and ranges from domestic appliances to electronics, car, medical, tool and die, and aerospace products.
Duration:
2012. – 2014.
Partners:
University of Novi Sad, University of East Sarajevo, University Sts.Cyril and Methodius – Skopje, University of Mostar, Technical University of Sofia, Technical University of Sofia, J.J.Strossmayer University in Osijek, VŠB – Technical University of Ostrava, Czech Technical University in Prague, Jan Evangelista Purkyne University in Ústí nad Labem, University of Miskolc, State University of Balti ,,Alecu Russo", University of Montenegro, Poznan University of Technology, Cracow University of Technology, University of Oradea, „Dunarea de jos" University of Galati, Technical University of Cluj-Napoca, University of Nis, University of Novi Sad, Technical University in Zvolen, University of Žilina in Žilina, Slovak University of Technology in Bratislava, Slovak University of Technology in Bratislava
Researchers *from the FTS:*
Dr Miodrag Zlokolica
Equipment purchased from project funds:

Naziv CEEPUS III projekta:
EDUKACIJA O ODRŽIVOM RAZVOJU U PROIZVODNJI
Oznaka projekta / akronim:
CIII-SI-0904-01-1415
Web:
https://ceepus.info/public/network/network.aspx
Rukovodilac projekta:
Rukovodilac projekta sa FTN:
Dr Milenko Sekulić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvoja)
Razvojna
Opis projekta:
Savremena proizvodnja zahteva kontinuirane inovacije i poboljšanja u proizvodnom procesu, tehnologijama i kvalitetu. Budući da proizvođačka industrija postaje sve konkurentnija, proizvođači treba da implementiraju sofisticiranu tehnologiju za poboljšanje produktivnosti. Uspešna proizvodnja danas mora da koristi "high - tech" materijale za proizvodnju malih i velikih proizvoda, kao i nove proizvodne procese za brzu proizvodnju. Upotreba inovativnih tehnologija mora da zadovolji potrebu za stalnom konkurentskom pozicijom.
Trajanje projekta:
2014. – 2015.
Institucije učesnici / partneri:
Univerzitet u Novom Sadu, Fakultet tehničkih nauka, Univerzitet u Banja Luci, Univerzitet u Sarajevu, Univerzitet u Istočnom Sarajevu, Univerzitet Ćirilo i Metodije u Skoplju, Univerzitet Crne Gore, Univerzitet u Kragujevcu, Univerzitet u Ljubljani
Učesnici –istraživači sa FTN
Dr Milenko Sekulić
Oprema nabavljena iz projektnih sredstava

CEEPUS III PROJECT - Title:
EDUCATION FOR SUSTAINABLE DEVELOPMENT IN MANUFACTURING
Project code / acromin:
CIII-SI-0904-01-1415
Web site:
https://ceepus.info/public/network/network.aspx
Grandholder
Coordinator FTS:
Dr Milenko Sekulić
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Development
Summary:
The modern production requires continuous innovation and improvement in production, process, technology and quality. As the manufacturing industry becomes increasingly competitive, manufacturers need to implement sophisticated technology to improve productivity. Successful production nowadays has to use “high-tech” materials for production of small and big products as well as novel manufacturing processes for short production times. The usage of innovative technologies has to satisfy the need for eternal competitive position. Sustainability has now become the world's number one issue to be pursued for achieving a concrete and long lasting development.
Duration:
2014. – 2015.
Partners:
University of Novi Sad, University of East Sarajevo, University of Sarajevo, University of Ljubljana, University of Banja Luka, University Sts.Cyril and Methodius – Skopje, University of Montenegro, University of Kragujevac, University of Ljubljana
Researchers *from the FTS:*
Dr Milenko Sekulić
Equipment purchased from project funds:

Naziv CEEPUS IV projekta:
INŽENJERSTVO KAO JEZIK KOMUNIKACIJE U EVROPI
Oznaka projekta / akronim:
CIII-PL-0701-02-1314
Web:
http://www.ceepus.info/public/network/network.aspx
Rukovodilac projekta:
Prof. dr Krzysztof Rokosz
Rukovodilac projekta sa FTN:
MSc. Borislav Savković
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Razvojna
Opis projekta:
Produžetak mreže "Inženjerstvo kao jezik komunikacije u Evropi" je nastavak uspešne saradnje između univerziteta na bazi mreže CIII-PL-0701-01-1213, koja je osnovana 2012. Postoji, međutim, mnogo maternjih jezika u Evropi, veoma često inženjeri koriste svoj sleng, što je sasvim razumljivo bez obzira na njihovu nacionalnost. Primećeno je da tehnički tutorijali, brošure ili druga dokumenata koja su napisana na tehničkom engleskom jeziku razumeju ljudi, koji imaju samo osnovno znanje engleskog jezika. Cilj nove CEEPUS mreže "Inženjerstvo kao jezik komunikacije u Evropi" je stvaranje komunikacije i saradnje između inženjera koji se bave različitim granama tehnike, zahvaljujući onome što bi mogli da stvore interdisciplinarni timovi u Inženjerstvu. Jaku pozadinu inženjerske tehnike primenjuju se na širok spektar složenih problema, zajedno sa inženjerima koji razumeju više od jedne discipline i spremni su da rade na raskrsnici dva ili više inženjering tima i naučnim naučnim disciplinama. Danas istraživanja i privredni sektoria imaju visoke zahteve prema inženjerima. Često jedan inženjer nije u stanju da reši složene interdisciplinarne probleme, ali postoji velika mogućnost da će Interdisciplinarni inženjerski timovi mnogo bolje i brže to izvršit. Želja ovog projekta je da se uključe nastavnici iz partnerskih institucija u cilju stvaranja timskih projekata koji bi bili glavni deo programa . Takođe bismo želeli da koristi imaju i studenti iz našeg programa. Zahvaljujući tome , studenti bi bili u mogućnosti da slobodno komuniciraju i rade - u komunikaciji sa svojim supervizorima npr. tokom obuke , letnje škole , ekskurzije, itd U roku od 13-14 dana, učenici će imati mogućnost da steknu znanja iz oblasti inženjeringa na predavanjima, vežbama I u laboratorijama. Moći će da biraju zanimljive teme. Planirane aktivnosti će se odnositi na teme: Komunikacijancuja u nauci, Inženjerstvo površina, hrapavosti i oblika merenja, mehanička i elektrohemijska površinske obrade, obnovljivi izvori energije, Inženjerstvo poljoprivrede i šumarstva, Korozija I inžinjerstvu, građevinarstvo, aspekti Ekonomskog Inženjerstva, neuronske mreže, veštačka inteligencija, metode planiranja Eksperimenta, Statistika u inženjerstvu, biomaterijali i nanomaterijali, Tehnički Engleski za inženjera, pisanje naučnih članaka. "Inženjerstvo kao jezik komunikacije u Evropi" daje priliku da se stvori uspešna saradnju, ne samo između nastavnika, već i učenika sa Univerziteta koji su učesnici u mreži, kao i između korisnika sredstava besplatne mobilnosti nastavnika i mobilnost studenata u okviru ove mreže. Dakle, razmena znanja između partnerskih institucija će dati dobru mogućnost za dalji razvoj na Univerzitetima, kao i za povećanje standarda obrazovanja.
Trajanje projekta:
2012-2014
Institucije učesnici / partneri:
Agricultural University of Tirana, Vorarlberg - University of Applied Sciences, Technical University of Sofia, Czech University of Life Sciences Prague, Jan Evangelista Purkyne University in Ústí nad Labem, University of South Bohemia Ceské Budejovice, VŠB – Technical University of Ostrava, University of Split, Kecskemét College, Óbuda University, Budapest Polytechnic, Bánki Donát Mechanical Engineering Faculty; Szent István University, Technical University of Moldova, University of Montenegro, University Sts.Cyril and Methodius - Skopje, Koszalin University of Technology, "1 DECEMBRIE 1918" UNIVERSITY OF ALBA IULIA, "IULIU HATIEGANU" UNIVERSITY OF MEDICINE AND PHARMACY OF CLUJ NAPOCA, "OVIDIUS" UNIVERSITY OF CONSTANTA, Universitary Centre of baia Mare - Technical University of Cluj, Universitary Centre of baia Mare - Technical University of Cluj, University of Kragujevac, Slovak University of Agriculture in Nitra, Slovak University of Technology in Bratislava, Technical University in Košice.
Učesnici – istraživači sa FTN:
Borislav Savković, Pavel Kovač, Milenko Sekulić, Pucovski Vladimir, Marin Gostimirović, Dragan Rodić
Oprema nabavljena iz projektnih sredstava:

CEEPUS IV PROJECT - Title:

ENGINEERING AS COMMUNICATION LANGUAGE IN EUROPE

Project code / acronym:

CIII-PL-0701-02-1314

Web site:

http://www.ceepus.info/public/network/network.aspx

Grantholder:

Prof. dr Krzysztof Rokosz

Coordinator from the Faculty of Technical Sciences:

MSc. Borislav Savković

Scientific Research Field / Type of research (Fundamental / Applied / Development):

Development

Project Summary:

The prolong of Network "Engineering as Communication Language in Europe" is a continuation of successful cooperation between Universities on the base of Network CIII-PL-0701-01-1213, which was established in 2012.
There many native languages in Europe however, very often engineers use their own slang, which is quite well understandable to them, regardless of their nationality. I have noticed, that technical tutorials, brochures or other documents which are written in technical English can by understood by people, who have only basic knowledge of English.
The goal of the new CEEPUS Network "Engineering as Communication Language in Europe" is to create communication and cooperation between engineers dealing with various engineering branches, thanks to what we would be able to create Interdisciplinary Engineering Teams. A strong background in engineer techniques applicable to a wide variety of complex problems is in demand along with engineers who understand more than one discipline and are prepared to work at the intersection of two or more engineering and science disciplines. Nowadays research and industry sectors have high requirements towards engineers. Often a single engineer is not able to solve complicated interdisciplinary problems, but there is a great possibility that Interdisciplinary Engineering Teams would make it better and faster.
We would like to involve teachers from partner Institutions in order to create team projects that would be main part of the program. We would also like students to take benefit from our Program. Thanks to it, students would be able to freely communicate and work - communicating with their supervisors e.g. during trainings, summer schools, excursions, etc.
Within 13-14 days the students will have the possibility to gain engineering knowledge during the lectures, exercises and labs. It will be able to choose interesting themes. Planned activities will concern following topics: Science Communication, Surface Engineering, Roughness and Shape Measurements, Mechanical and Electrochemical Surface Treatments, Renewable Energy Resources, Agriculture and Forest Engineering, Corrosion Engineering, Civil Engineering, Economical Aspects in Engineering, Neural Networks, Artificial Intelligence, Experiment Planning, Statistic in Engineering, Biomaterials and Nanomaterials, Technical English for Engineers, Article Writing Secrets.
"Engineering as Communication Language in Europe" gives the opportunity to create successful cooperation not only between teachers but also students from the universities which are to participate in the network, as well as between beneficiaries of the freemover mobility. Therefore, the knowledge exchanged between the partner Institutions will give a good possibility for the further development of the Universities as well as for increasing education standards.

Duration of the project:

2012-2014

Partners:

Agricultural University of Tirana, Vorarlberg - University of Applied Sciences, Technical University of Sofia, Czech University of Life Sciences Prague, Jan Evangelista Purkyne University in Ústí nad Labem, University of South Bohemia Ceské Budejovice, VŠB – Technical University of Ostrava, University of Split, Kecskemét College, Óbuda University, Budapest Polytechnic, Bánki Donát Mechanical Engineering Faculty; Szent István University, Technical University of Moldova, University of Montenegro, University Sts.Cyril and Methodius - Skopje, Koszalin University of Technology, "1 DECEMBRIE 1918" UNIVERSITY OF ALBA IULIA, "IULIU HATIEGANU" UNIVERSITY OF MEDICINE AND PHARMACY OF CLUJ NAPOCA, "OVIDIUS" UNIVERSITY OF CONSTANTA, Universitary Centre of baia Mare - Technical University of Cluj, Universitary Centre of baia Mare - Technical University of Cluj, University of Kragujevac, Slovak University of Agriculture in Nitra, Slovak University of Technology in Bratislava, Technical University in Košice.

Researchers from the FTS:

Borislav Savković, Pavel Kovač, Milenko Sekulić, Pucovski Vladimir, Marin Gostimirović, Dragan Rodić

Equipment purchased from the project funds:

Naziv CEEPUS III projekta:
PRIMENJENA EKONOMIJA I MENADŽMENT
Oznaka projekta / akronim:
CIII-SK-0044-08-1314
Web:
Rukovodilac projekta:
Prof. dr Elena Horska
Rukovodilac projekta sa FTN:
Docent dr Slavica Mitrović
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Ekonomija i Menađment
Opis projekta:
Osnovni cilj predložene CEEPUS mreže je da se poveća kvalitet studiranja i istraživanja u oblasti "primenjene ekonomije i menadžmenta" unutar mreže i poboljša naučnoistraživačka saranja sa partnerima u okviru mreže: Zajednički studijske i istraživačke aktivnosti u oblasti interesovanja; Razmena stručnnih znanja, istraživanja i primena iskustava među nastavnicima i studentima iz oblasti primenjene ekonomije i menadžmenta i srodnih nauka; Primena najnovijih metode i inovativnih pristupa u ovoj oblasti; Jačanje akademskog znanja iz ove oblasti u Centralnoj Evropi i širem okruženju; Proširenje mreže sa daljim namerom da se prošire aktivnosti i na drugim univerzitetima - potencijalnim novim partnerima; Dalja implementacija međunarodnih master program "Poslovna ekonomija i menađment" u kojoj se razvijaju novi kvalitativni nivo i dalje unapređenju i razvijaju studijski programi; Pružanje praktičnih iskustava u okviru studentskih kratkih ekskurzije smatramo veoma korisno za sticanje praktičnog iskustva koji su neizbežni deo univerzitetskih studija "kratkotrajne ekskuryija u okviru mreže" .
Trajanje projekta:
2013-2014
Institucije učesnici / partneri:
Slovak University of Agriculture in Nitra , Faculty of Economics and Management, University "Fan S. Noli" KORCA, FACULTY OF AGRICULTURE, BOKU - University of Natural Resources and Applied Life Sciences, Vienna, Institute of Marketing and Innovation, FH JOANNEUM - University of Applied Sciences, Department of International Management, University of National and World Economy, Department of Natural Resources Economics, Mendel University in Brno, Faculty of Business Economics, Czech University of Life Sciences Prague, Faculty of Economics and Management, University of South Bohemia Ceské Budejovice, Faculty of Economics, University of Zagreb, Faculty of Agriculture, University of Szeged, Faculty of Engineering, Szent István University, Faculty of Economics and Social Sciences, Technical University of Moldova, Engineering and Management in Production Systems, Alecu Russo State University of Balti, Faculty of Techniques, Physics, Mathematics and Informatics, Trade-Cooperative University of Moldova, Manegement and Law Department, State University of Tetovo, Faculty of Economics, Cracow University of Economics, Department of Entrepreneurship and Innovation, Faculty of Economics and International Relations, Poznan University of Economics, Faculty of Management, Agriculture University of Cracow, Department of Agribusiness, Warsaw University of Life Sciences, Faculty of Economic Sciences, University of Novi Sad, Faculty of Technical Sciences, Department of Industrial Engineering and Management, University of Ljubljana, Biotechnical Faculty, University of Primorska, Faculty of Management Koper.
Učesnici – istraživači sa FTN:
Docent dr Slavica Mitrović, Profesor dr Leposava Grubić-Nešić, Docent dr Stevan Milisavljević, Docent dr Aco Antić, MSc. Ana Nešić, student doktorskoh studija
Oprema nabavljena iz projektnih sredstava:

CEEPUS III PROJECT - Title:
APPLIED ECONOMICS AND MANAGEMENT
Project code / acronym:
CIII-SK-0044-08-1314
Web site:
Grantholder:
Prof. Dr. Ing. Elena horska
Coordinator from the Faculty of Technical Sciences:
Assistant Profesor dr Slavica Mitrović
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Economy, Management
Project Summary:
The main objective of the proposed CEEPUS Network is to keep and increase the quality of study and research in the field of "Applied Economics and Management" within the network and support the links with our partners by:common study and research activities in the field of interest;exchanging expertise, study and research experience among teachers and students in the field of Applied Economics and Management and related sciences;accordingly implementing latest methods and innovative approaches in this field;strenghtening the academic knowledge from this field in the Central European and wider context;up-dating this network of universities with further intention to expand our activities on other universities - potential new partners;further implementation of the International Master program "Business Economics", by identifying new qualitative level and further discussions about improving and developing it; providing practical experiences as a part of newly introduced „short term excursions.“ Such excursions we consider as very useful for gaining practical experiences which are inevitable part of university studies.
Duration of the project:
2013-2014
Partners:
Slovak University of Agriculture in Nitra , Faculty of Economics and Management , University "Fan S. Noli" KORCA, FACULTY OF AGRICULTURE BOKU - University of Natural Resources and Applied Life Sciences, Vienna, Institute of Marketing and Innovation FH JOANNEUM - University of Applied Sciences, Department of International Management University of National and World Economy, Department of Natural Resources Economics Mendel University in Brno, Faculty of Business Economics Czech University of Life Sciences Prague, Faculty of Economics and Management University of South Bohemia Ceské Budejovice, Faculty of Economics University of Zagreb, Faculty of Agriculture, University of Szeged, Faculty of Engineering Szent István University, Faculty of Economics and Social Sciences Technical University of Moldova, Engineering and Management in Production Systems Alecu Russo State University of Balti, Faculty of Techniques, Physics, Mathematics and Informatics Trade-Cooperative University of Moldova, Manegement and Law Department State University of Tetovo, Faculty of Economics Cracow University of Economics, Department of Entrepreneurship and Innovation, Faculty of Economics and International Relations Poznan University of Economics, Faculty of Management Agriculture University of Cracow, Department of Agribusiness Warsaw University of Life Sciences, Faculty of Economic Sciences University of Novi Sad, Faculty of Technical Sciences, Department of Industrial Engineering and Management University of Ljubljana, Biotechnical Faculty University of Primorska, Faculty of Management Koper
Researchers from the FTS:
Docent dr Slavica Mitrović, Profesor dr Leposava Grubić-Nešić, Docent dr Stevan Milisavljević, Docent dr Aco Antić, MSc. Ana Nešić, PhD student
Equipment purchased from the project funds:

Naziv CEEPUS III projekta:
NOVE METODE U PROIZVODNJI I MERENJU MAŠINSKIH DELOVA
Oznaka projekta / akronim:
CIII-PL-0007-09-1314
Web:
www.ceepus.info
Rukovodilac projekta:
Prof. dr Stanislaw Adamczak, Dr. Krzysztof Stepien, Kielce University of Technology
Rukovodilac projekta sa FTN:
Prof. dr Janko Hodolič
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Razvojna
Opis projekta:
Glavni ciljevi projekta su: realizacija zajedničkog programa pod nazivom "zajednički nadzor doktorskih disertacija"; realizacija zajedničkog programa pod nazivom "doktoranti-semestar u Kielce-u ", uključujući i probleme istražene u okviru projekta a naročito u toku nastavnih planova i programa, praćenje najnovijih trendova u cilju primene rezultata istraživanja u industrijskoj praksi, promovisanje rada istraživača uključenih u realizaciju projekta objavljivanjem nihovih istraživanja u naučnim časopisima; upoznavanje sa istraživačkim radom koji sprovodi svaki od saradnika univerziteta, razmena iskustava u sprovedenim istraživanjima, razvoj zajedničkih istraživačkih programa u narednim godinama sa stanovišta budućih nacionalnih i međunarodnih donacija; upoznavanje sa radom izabranih industrijskih postrojenja gde su od velikog značaja problemi računarskih sistema proizvodnje i merenja mašinskih delova, razmena iskustava u oblasti metodologije koje se odnose na računarske sisteme, napredne tehnologije merenja za računarom integrisane sisteme, priprema starijih studenata za rad na njihovim disertacijama u vezi sa odgovarajućim programom saradnje, pomoć mlađim istraživačima u radu na disertacijama na više univerziteta, razvijanje koncepta organizovanja izložbi koji bi promovisao dostignuća naučnika koji su uključeni u implementaciju projekta uključujući i problem koji se istražuju u okviru projekta i naročito u okviru nastavnih planova, praćenje najnovijih trendova u cilju primene rezultata istraživanja u industrijskoj praksi.
Trajanje projekta:
2013/2014
Institucije učesnici / partneri:
Kielce University of Technology, Chair of Mechanical Technology and Metrology; Vienna University of Technology, Department of Interchangeable Manufacturing and Industrial Metrology; Czech Technical University in Prague, Faculty of Mechanical Engineering; VŠB – Technical University of Ostrava, Department of Machining and Assembly; University of Rijeka, Faculty of Engineering, Department of Production Engineering; University Sts.Cyril and Methodius - Skopje, Faculty of Mechanical Engineering -Skopje, Institute of Production Engineering; Cracow University of Technology, Faculty of Mechanical Engineering; Universitary Centre of baia Mare - Technical University of Cluj, Machine Building Faculty - Design Engineering and Robotics Department; „DUNAREA DE JOS" UNIVERSITY OF GALATI, Faculty of Mechanical Engineering; University of Novi Sad, Faculty of Technical Sciences; University of Maribor, Faculty of Mechanical Engineering; Slovak University of Technology in Bratislava, Faculty of Materials Science and Technology STU; University of Žilina in Žilina, Dpt. of Machining and Automation; Technical University of Košice, Department of Technology and Materials, Fac. of Mechanical Engineering; Technical University in Košice, TU Kosice, Faculty of Manufacturing Technologies in Presov
Učesnici – istraživači sa FTN:
Janko Hodolic, Djordje Vukelic, Igor Budak, Miodrag Hadžistević, Boris Agarski, Ivan Matin, Branko Štrbac, Milana Ilić, Branislava Crnobrnja, Branislav Milanović, Darko Milanković, Vesna Medić
Oprema nabavljena iz projektnih sredstava:
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CEEPUS III PROJECT - Title:
NOVEL METHODS OF MANUFACTURING AND MEASUREMENT OF MACHINE PARTS
Project code / acronym:
CIII-PL-0007-09-1314
Web site:
www.ceepus.info
Grantholder:
Professor Stanislaw Adamczak, DrSc. Krzysztof Stepien, Kielce University of Technology
Coordinator from the Faculty of Technical Sciences:
Professor Janko Hodolic, Dr.Sc.
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Development
Project Summary:
The main objectives of the project are: implementation of the joint program called: "Joint supervisions of PhD dissertations"; implementation of the joint program called "PhD students - a semester in Kielce" including the problems investigated within the project in particular course syllabuses, following the latest trends with the aim of applying the research results to industrial practice, promoting the work of researchers involved in the project implementation by publishing their findings in a special Science Report. familiarisation with the research work carried out by each of the collaborating universities; exchange of experience concerning the conducted research; development of joint research programmes for the forthcoming years from the viewpoint of future national and international grants; familiarisation with the performance of selected industrial plants, where the problems of computer-aided systems for manufacturing and measurement of machine parts are of great importance; exchange of experience in the field of methodology concerning the computer-aided systems; application of advanced measurement technology to integrated computer-aided systems; preparation of senior students for the work on their theses related to the undertaken programme of co-operation; assistance to junior research staff in their work on the dissertations for higher university degrees and senior university grades; developing a concept of organising an exhibition that would promote the achievements of scientists involved in the project implementation, including the problems investigated within the project in particular course syllabuses, following the latest trends with the aim of applying the research results to industrial practice.
Duration of the project:
2013/2014
Partners:
Kielce University of Technology, Chair of Mechanical Technology and Metrology; Vienna University of Technology, Department of Interchangeable Manufacturing and Industrial Metrology; Czech Technical University in Prague, Faculty of Mechanical Engineering; VŠB – Technical University of Ostrava, Department of Machining and Assembly; University of Rijeka, Faculty of Engineering, Department of Production Engineering; University Sts.Cyril and Methodius - Skopje, Faculty of Mechanical Engineering -Skopje, Institute of Production Engineering; Cracow University of Technology, Faculty of Mechanical Engineering; Universitary Centre of baia Mare - Technical University of Cluj, Machine Building Faculty - Design Engineering and Robotics Department; „DUNAREA DE JOS" UNIVERSITY OF GALATI, Faculty of Mechanical Engineering; University of Novi Sad, Faculty of Technical Sciences; University of Maribor, Faculty of Mechanical Engineering; Slovak University of Technology in Bratislava, Faculty of Materials Science and Technology STU; University of Žilina in Žilina, Dpt. of Machining and Automation; Technical University of Košice, Department of Technology and Materials, Fac. of Mechanical Engineering; Technical University in Košice, TU Kosice, Faculty of Manufacturing Technologies in Presov
Researchers from the FTS:
Janko Hodolic, Djordje Vukelic, Igor Budak, Miodrag Hadžistvić, Boris Agarski, Ivan Matin, Branko Štrbac, Milana Ilić, Branislava Crnobrnja, Branislav Milanović, Darko Milanković, Vesna Medić
Equipment purchased from the project funds:
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Naziv CEEPUS IV projekta:

NAPREDNE TEHNOLOGIJE U MAŠINSTVU - INOVACIONI TRENDOVI ZA ZAJEDNIČKO OBRAZOVANJE I ISTRAŽIVANJE - DEO 2

Oznaka projekta / akronim:

CIII-SK-0067-09-1314

Web:

http://www.ceepus.info/public/network/network.aspx

Rukovodilac projekta:

Prof.Ing. CSc. Ildiko Mankova

Rukovodilac projekta sa FTN:

Prof. dr Pavel Kovač

Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):

Razvojna

Opis projekta:

Obrada kao dominantan faktor u proizvodnji zauzima značajnu mesto u industrijskoj praksi i univerzitetskom istraživanju. U današnje vreme obrada metala ne pokriva samo usko specijalizovanu oblast skidanja materijala, već kao deo proizvodnih tehnologija, stimulira razvoj širokog spektra mašinske proizvodnje, kao što je inovacija proizvoda, povećanje performansi obradnih alata, napredak alatnih materijala, novi vidovi organizacije proizvodnje itd. Danas, obrada je karakterisana intenzivnom primenom računara, komunikacija i informativnih tehnologija. Ako je fleksibilna automatizacija obrade smatrana startnom tačkom za računarom podržanu proizvodnju, izazovi u obradi metala se očekuju usled napredka filozofije pojedinačne proizvodnje, oblasti koja zalazi u pet vodećih oblasti proizvodnje; veštačke inteligencije, praćenje procesa, obrade podataka, upravljanje softverom i alatima. Takvi izazovi se naziru u inovativnim tehnologijama kao napr Visokobrzinska obrada i Suva obrada tvrdih materijala. Ključna promena u oblasti obradnih tehnologija uključuje: smanjivanje gabarita delova, povećavanje kvaliteta obrađene površine, uža tolerancijska polja i više tačnosti, smanjenje troškova obrade, redukcija težine komponenti i smanjenje veličine serija.

Pomenute činjenice sugerišu da sistem obrazovanja treba da je potkovan znanjem, stručnim i obučenim ljudskim resursima za nadolazeću zahtevnu praksu. Ovo je glavni zadatak Univerziteta koji može biti realizovan samo uz pomoć prisne saradnje između njih. Kako je poznato svaki univerzitet (tehničkog karaktera) ima svoje jake tačke u oblastima istraživanja i obrazovanja. Stoga tehnički obrazovani i stručno obučeni stručni kadrovi moraju biti spremni kada ove jake tačke budu korišćene za edukaciju studenata i saradnju među nastavnicima.Mobilnost preko programa Ceepus bi bila dobrodošla u pomenute svrhe. Ovo je ujedno i glavni razlog produživanja postojeće mreže u oblasti Proizvodnog mašinstva – Tehnologije obrade materijala i Inženjerske metrologije

Trajanje projekta:

2005-2014

Institucije učesnici / partneri:

Vienna University of Technology, Tomas Bata University in Zlín, Óbuda University, Budapest, University of Miskolc, University Sts.Cyril and Methodius - Skopje, Cracow University of Technology, Faculty of technical science Institute for production engineering / University of Novi Sad, Technical University in Košice

Učesnici – istraživači sa FTN:

Pavel Kovač, Borislav Savković, Marin Gostimirović

Oprema nabavljena iz projektnih sredstava:

CEEPUS IV PROJECT - Title:
ADVANCES IN MACHINING - INNOVATION TRENDS FOR JOINT EDUCATION AND RESEARCH - PART 2
Project code / acronym:
CIII-SK-0067-09-1314
Web site:
http://www.ceepus.info/public/network/network.aspx
Grantholder:
Prof.Ing. CSc. Ildiko Mankova
Coordinator from the Faculty of Technical Sciences:
Prof. dr Pavel Kovač
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Development
Project Summary:
Machining as a dominant factor in the production displays significant position in the industrial practice and university research. Nowadays, metal cutting does not cover a close specialized field of material removal, but as a part of manufacturing technology stimulates development over a wide range of machinery production such as innovative products, performance of machine tools, advanced tool materials, tooling, new ways of manufacturing organization, etc. Today, machining is characterised by intensive use of computers, communication and information technology. If flexible automation of machining has been considered a starting point for computer aided application, challenges onto metal cutting are anticipated nowadays as philosophy of lean/fractal production, the fields that touch five leading principles as artificial intelligence in machining, process monitoring, data processing, software and tool management. Such challenges must be seen in terms of innovative technology as High-speed-machining, Hard machining, Dry machining etc. The key change drivers in the case of machining technology include: diminishing component size, enhanced surface quality, and tighter tolerances and manufacturing accuracies, reduced costs, diminished component weight and reduced batch sizes. Mentioned fact bearing on the issue suggest, that the education system ought to be prepare knowledge based, well skilled and trained people for the future practice. It is a main task of Universities but it could be realized only with narrow cooperation among them. As known each university (technical Institution) has its own strongpoint in the research and education. Therefore, knowledge based and well skilled experts could be prepared well when this strongpoint will be used for students' education and teacher cooperation. The exchange mobility program Ceepus could be enabled in mentioned effort. This is also the main reason for prolongation of existing network in the field of Production Engineering - Material Processing Technology and Engineering Metrology.
Duration of the project:
2005-2014
Partners:
Vienna University of Technology, Tomas Bata University in Zlín, Óbuda University, Budapest, University of Miskolc, University Sts.Cyril and Methodius - Skopje, Cracow University of Technology, Faculty of technical science Institute for production engineering / University of Novi Sad, Technical University in Košice,
Researchers from the FTS:
Pavel Kovač, Borislav Savković, Marin Gostimirović
Equipment purchased from the project funds:

Naziv CEEPUS IV projekta:

ISTRAŽIVANJE, RAZVOJ I OBRAZOVANJE U OBRASTI PRECIZNE OBRADE

Oznaka projekta / akronim:

CIII-RS-0507-03-1314

Web:

http://www.ceepus.info/public/network/network.aspx

Rukovodilac projekta:

Prof. dr Pavel Kovač

Rukovodilac projekta sa FTN:

Prof. dr Pavel Kovač

Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):

Razvojna

Opis projekta:

Ključna promena u pogledu razvoja mašinske tehnologije obuhvata: smanjenje veličina komponenti , poboljšan kvalitet površine, čvršće tolerancije i proizvodne tačnosti , smanjene troškove, smanjenu težinu komponente i smanjene veličine veličina.Kretanje ka većom preciznošću se dešava u gotovo svim oblastima proizvodnje. Veća preciznost je neophodna iz više razloga:

- Da biste dobili visok kvalitet i tačnost, to zahteva izuzetnu preciznost u pogledu alatne mašine, računarskih performansi , itd
- Da garantuje robusnost (optimalnu funkcionalnost pod različitim okolnostima)
- Da bi se garantovala sposobnost uspostavljanja zamene dela (izbegavajte podešavanja), a samim tim se i omogućava masovna proizvodnju po niskoj ceni.

Potreba za visoko preciznim proizvodima dovodi do dva tehnološka dostignuća 1.) pojava istaknute nove inženjerske discipline: Precizna mehanika , sa svojim osnovnim principima dizajna i pravila , i 2.) pojava preciznih proizvodnih procesa, treba da dobiju potrebnu tačnosti površine i dimenzije. Metalna industrija je pod sve većom presijom kao rezultat konkurencije, strožijim ekološkim propisima u lancu snabdevanja i potražnje za unapredjenje životne sredine i padom nivoa znanja u industriji. Usvajanjem održive proizvodne prakse nudi se kompanijama za obradu materiala isplativ put da poboljšaju svoj ekonomski , ekološki i socijalni rad. Alternativa održive proizvodnje je da se stave sva tri nivoa na istom odnosno jednakom nivou. Održivost proizvodnih principa je s obzirom na cenu proizvodnje, potrošnju energije, upravljanje otpadom, uticaj na okolinu, rad i sigurnost ličnog zdravlja. Obrazovni sistem treba da bude zasnovana na znanju, pripremi, dobroj kvalifikaciji i obučenim ljudima za buduću praksu. To je glavni zadatak Univerziteta ali se može ostvariti samo uz usku saradnju među njima. Kao što je poznato svaki Univerzitet (tehnička institucija) ima svoje uporište u istraživanje, razvoj i obrazovanje. Dakle, dobro obučeni stručnjaci mogu biti dobro pripremljeni kad se ovo uporište koristiti za edukaciju učenika i nastavnika kroz zajedničku saradnju. Umrežavanje postojećih centara u centralnoj i istočnoj Evropi i stvaranje virtuelnih centara kroz korišćenje novih interaktivnih komunikacionih alata će doprineti većoj evropskoj koheziji u istraživanjima zasnovanim na najboljim iskustvima kroz transfer znanja na regionalnom tako i na lokalnom nivou, kao i o ulozi regiona u evropskim istraživačkim naporima.

Trajanje projekta:

2011-2014

Institucije učesnici / partneri:

University of Banja Luka, Faculty of Mechanical Engieering; University of Chemical Technology and Metallurgy, Department of Applied Mechanics; Jan Evangelista Purkyne University in Ústí nad Labem, Faculty of Production technology; University Sts.Cyril and Methodius - Skopje, Faculty of Mechanical Engineering -Skopje, Institute of Production Engineering; Koszalin University of Technology, Faculty of Mechanical Engineering; University of Ljubljana, Faculty of Mechanical Engineering; Slovak University of Technology in Bratislava, Faculty of Mechanical Engineering, Institute of manufacturing systems, environmental technology and quality management; Technical University in Zvolen, Department of Manufacturing Technology and Materials, Faculty of Environmental and Manufacturing Technology

Učesnici – istraživači sa FTN:

Pavel Kovač, Borislav Savković, Milenko Sekulić

Oprema nabavljena iz projektnih sredstava:

CEEPUS IV PROJECT - Title:

RESEARCH, DEVELOPMENT AND EDUCATION IN PRECISION MACHINING

Project code / acronym:

CIII-RS-0507-03-1314

Web site:

http://www.ceepus.info/public/network/network.aspx

Grantholder:

Prof. dr Pavel Kovač

Coordinator from the Faculty of Technical Sciences:

Prof. dr Pavel Kovač

Scientific Research Field / Type of research (Fundamental / Applied / Development):

Development

Project Summary:

The key change drivers in the case of machining technology include: diminishing component size, enhanced surface quality, and tighter tolerances and manufacturing accuracies, reduced costs, diminished component weight and reduced batch sizes.
The trends towards higher precision are occurring in virtually all areas of manufacturing. Higher precision is needed for several reasons:

- To obtain the high motion required in high-accuracy machine tools, computer peripherals, etc.
- To guarantee robustness (optimal functionality under varying circumstances
- To guarantee part interchange ability (avoid adjustments), and hence to allow mass production at low price.

The need for high precision products leads to two technological evolutions i) the emergence of prominent new engineering discipline: precision engineering, with own underlying design principles and rules, and ii) the emergence of high-precision manufacturing processes, need to obtain the required dimensional and surface accuracies.
Metal machining industry is under increasing preasure as a result of competition, stricter environmental regulation, supply chain demand for improved environmental performance and falling skill levels within industry. Adopting sustainable manufacturing practices offers mmaterial machining companies a cost effective route to improve their economic, environmentaly and social performance. The alternative sustainable production, have to put all three levels on the same equal level. Sustainability products principles are considering manufacturing costs, energy consmption, wastemanagement, environmental impact, operation safety and personal health.
The education system ought to be preparing knowledge based, well skilled and trained people for the future practice. It is a main task of Universities but it could be realized only with narrow cooperation among them. As known each university (technical Institution) has its own strongpoint in the research, development and education. Therefore, knowledge based and well skilled experts could be prepared well when this strongpoint will be used for students' education and teacher cooperation. The exchange mobility program Ceepus could be enabled in mentioned effort.
Networking of existing centres in Central and East Europe and the creation of virtual centres through the use of new interactive communication tools would contribute to
Greater European cohesion in research based on the best experiences of knowledge transfer at regional and local levels and on the role of the regions in the European research efforts.

Duration of the project:

2011-2014

Partners:

University of Banja Luka, Faculty of Mechanical Engieering; University of Chemical Technology and Metallurgy, Department of Applied Mechanics; Jan Evangelista Purkyne University in Ústí nad Labem, Faculty of Production technology; University Sts.Cyril and Methodius - Skopje, Faculty of Mechanical Engineering -Skopje, Institute of Production Engineering; Koszalin University of Technology, Faculty of Mechanical Engineering;
University of Ljubljana, Faculty of Mechanical Engineering; Slovak University of Technology in Bratislava, Faculty of Mechanical Engineering, Institute of manufacturing systems, environmental technology and quality management;Technical University in Zvolen, Department of Manufacturing Technology and Materials, Faculty of Environmental and Manufacturing Technology

Researchers from the FTS:

Pavel Kovač, Borislav Savković, Milenko Sekulić

Equipment purchased from the project funds:

Naziv CEEPUS IV projekta:

ISTRAŽIVANJE , RAZVOJ I OBRAZOVANJE U NEKONVENCIONALNIM PROCESIMA OBRADE

Oznaka projekta / akronim:

CIII-RS-0813-01-1314

Web:

http://www.ceepus.info/public/network/network.aspx

Rukovodilac projekta:

Prof. dr Marin Gostimirović

Rukovodilac projekta sa FTN:

Prof. dr Marin Gostimirović

Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):

Razvojna

Opis projekta:

Moderna proizvodnja se suočava sa sve većim zahtevima svakodnevno. Fleksibilnost sistema, produktivnost i ekonomičnost proizvodnje, visok nivo kvaliteta i tačnosti obrade, i optimalnog korišćenja izlaznog kapaciteta, su najvitalniji zahtevi kojima se suočavaju tržišno orijentisani industrijskih sistemi. Samo moderno opremljeni privredni sistemi će biti u mogućnosti da prilagode svoj proizvodni proces sa ovim visokim zahtevima tržišta.

Ne može biti nikakve sumnje da će mašinske tehnologije zadržati njihov značaj za vreme koje dolazi, u modernoj proizvodnoj industriji. Posebno su važna procesi za skidanje materijala kao integralni deo tehnološkog procesa proizvodnje i montaže. Ovi proizvodni procesi daju konačan oblik i veličinu sa rigoroznijijom kontrolom dimenzija, spoljašnjih karakteristika itd

Procesi na bazi skidanja materijala ponovo se mogu podeliti u dve grupe, a uglavnom su: Konvencionalni procesi obrade i nekonvencionalni proizvodni procesa. Primeri konvencionalnih procesa obrade su struganje, bušenje, glodanje, brušenje itd. Slično tome, Obrada abrazivnim mlazom (AJM), Ultrazvučna obrada (USM), obrada vodenim mlazom i abrazivni vodenim mlazom VJM i AVJM), Elektroerozivna obrada (EDM), Obrada laserom (LBM), Obrada elektronskim snopom (EBM), Obrada plazmom (PAM), Hemijska obrada (CHM), Elektrohemijska obrada (ECM) su neke od ne-konvencionalnih procesa obrade.

Ne-konvencionalni procesi obrade, koji se nazivaju napredni proizvodni procesi, se koriste u postrojenjima gde tradicionalni obradni procesi nisu opravdani, zadovoljavajući ili ekonomično zbog posebnih razloga koji su navedeni ispod: veoma je teško krhke materijala pričvrstiti za mašine tradicionalne obrade, kada je radni predmet previše fleksibilan ili vitak i kada oblik dela previše složen. Jer, ne-konvencionalni proizvodni procesi se definišu kao skup procesa koji uklanjaju višak materijala različitim tehnikama koje uključuju mehaničku, toplotnu, električnu energiju ili hemijsku ili kombinaciju ovih energija, ali ne koristite oštar alat kao što se koristi pri tradicionalnim konvencionalnim proizvodnim procesima.

Obrazovni sistem treba da bude zasnovana na znanju, pripremi, dobroj kvalifikaciji i obučenim ljudima za buduću praksu. To je glavni zadatak Univerziteta ali se može ostvariti samo uz usku saradnju među njima. Kao što je poznato svaki Univerzitet (tehnička institucija) ima svoje uporište u istraživanje, razvoj i obrazovanje. Dakle, na osnovu znanja dobro obučeni stručnjaci mogu biti dobro pripremljeni kad se ovo uporište koristiti za edukaciju učenika i nastavnika kroz zajedničku saradnju. U razmene kroz program CEEPUS mobilnosti mogu biti uključeni za pomenuta nastojanja. Umrežavanje postojećih centara u centralnoj i istočnoj Evropi i stvaranje virtuelnih centara kroz korišćenje novih interaktivnih komunikacionih alata će doprineti većoj evropskoj koheziji u istraživanjima zasnovanim na najboljim iskustvima kroz transfer znanja na regionalnom tako i na lokalnom nivou, kao i o ulozi regiona u evropskim istraživačkim naporima.

Trajanje projekta:

2013-2014

Institucije učesnici / partneri:

University of East Sarajevo, FACULTY OF MECHANICAL ENGINEERING; University of Split, Faculty of Electrical Engineering, Machine Engineering and Naval Architecture, Department of Modelling and Intelligent Systems; Kecskemét College, Kecskemét College Faculty of Mechanical Engineering and Automation; University of Montenegro, Faculty of Mechanical Engineering; Cracow University of Technology, Faculty of Mechanical Engineering; Technical University in Košice, Technical University of Košice, Department of Technology and Materials, Fac. of Mechanical Engineering

Učesnici – istraživači sa FTN:

Pavel Kovač, Borislav Savković, Marin Gostimirović

Oprema nabavljena iz projektnih sredstava:

CEEPUS IV PROJECT - Title:
RESEARCH, DEVELOPMENT AND EDUCATION IN NONCONVENTIONAL PROCESSES
Project code / acronym:
CIII-RS-0813-01-1314
Web site:
http://www.ceepus.info/public/network/network.aspx
Grantholder:
Prof. dr Marin Gostimirović
Coordinator from the Faculty of Technical Sciences:
Prof. dr Marin Gostimirović
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Development
Project Summary:
Modern manufacturing is facing ever-growing demands on a daily basis. System flexibility, productivity and cost-efficiency of manufacturing, high levels of machining quality and accuracy, and optimal utilisation of output capacity, are the most vital demands facing the market-oriented industrial systems. Only modern equipped industrial systems shall be able to adjust their manufacturing process to these high market demands. There can be little doubt that machining technologies shall retain their importance for time to come, in modern manufacturing industry. Specially important are material removal processes as the integral part of the technological process of product manufacturing and assembly. These manufacturing processes provide the final shape and size with tighter control on dimension, surface characteristics etc. Material removal processes once again can be divided into mainly two groups and they are: Conventional Machining Processes and Non Traditional Manufacturing Processes. Examples of conventional machining processes are turning, boring, milling, grinding etc. Similarly, Abrasive Jet Machining (AJM), Ultrasonic Machining (USM), Water Jet and Abrasive Water Jet Machining (WJM and AWJM), Electrical Discharge Machining (EDM), Laser Beam Machining (LBM), Electron Beam Machining (EBM), Plasma Arc Machining (PAM), Chemical Machining (CHM), Electrochemical Machining (ECM) are some of the non traditional machining processes. Non traditional machining processes, also called advanced manufacturing processes, are employed where traditional machining processes are not feasible, satisfactory or economical due to special reasons as outlined below: very hard fragile materials difficult to clamp for traditional machining, when the workpiece is too flexible or slender and when the shape of the part is too complex. Because, non-traditional manufacturing processes is defined as a group of processes that remove excess material by various techniques involving mechanical, thermal, electrical or chemical energy or combinations of these energies but do not use a sharp cutting tools as it needs to be used for traditional manufacturing processes. The education system ought to be preparing knowledge based, well skilled and trained people for the future practice. It is a main task of Universities but it could be realized only with narrow cooperation among them. As known each university (technical Institution) has its own strongpoint in the research, development and education. Therefore, knowledge based and well skilled experts could be prepared well when this strongpoint will be used for students' education and teacher cooperation. The exchange mobility program Ceepus could be enabled in mentioned effort. Networking of existing centres in Central and East Europe and the creation of virtual centres through the use of new interactive communication tools would contribute to Greater European cohesion in research based on the best experiences of knowledge transfer at regional and local levels and on the role of the regions in the European research efforts.
Duration of the project:
2013-2014
Partners:
University of East Sarajevo, FACULTY OF MECHANICAL ENGINEERING; University of Split, Faculty of Electrical Engineering, Machine Engineering and Naval Architecture, Department of Modelling and Intelligent Systems; Kecskemét College, Kecskemét College Faculty of Mechanical Engineering and Automation; University of Montenegro, Faculty of Mechanical Engineering; Cracow University of Technology, Faculty of Mechanical Engineering; Technical University in Košice, Technical University of Košice, Department of Technology and Materials, Fac. of Mechanical Engineering
Researchers from the FTS:
Pavel Kovač, Borislav Savković, Marin Gostimirović
Equipment purchased from the project funds:

Naziv CEEPUS IV projekta::
ISTRAŽIVANJE I OBRAZOVANJE U PODRUČJU GRAFIČKOG INŽENJERSTVA I DIZAJNA
Oznaka projekta / akronim:
CEEPUS III,: CIII-RS-0704-02-1314
Web:
http://www.ceepus.info/public/network/network.aspx
Rukovodilac projekta:
dr Živko Pavlović
Rukovodilac projekta sa FTN:
dr Živko Pavlović
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Grafičko inženjerstvo i dizajn / Razvojna
Opis projekta:
Ovaj projekat ima za cilj da formira odgovarajuću mrežu kroz koju će napredak znanja biti omogućen i znatno poboljšan. Ključna istraživanja će obuhvatiti važne oblasti grafičkog inženjerstva i dizajna. Osnovna istraživanja će obuhvatiti oblasti dizajna, pripreme za štampu, štampe, dorade i pakovanja. Istraživanja u oblasti dizajna će uključiti grafički proizvod i industrijski dizajn u korelaciji sa pripremom za štampu, štampom i doradom. Fotografija, tipografija i realizacija multimedijalnih sadržaja će takođe biti ciljevi ovog istraživanja. Važan fokus će se staviti na tipu dizajna različitih slova (na primer, latinica, ćirilica) i razne vrste oznaka. Uticaj različitih materijala koji se koriste za unapređenje štampanih slika, kao što su specijalni i UV pigmenati, će se ispitati. Posebna pažnja će biti posvećena tržišnim kretanjima u pogledu tekućih zahteva koji se tiču vizuelnog identiteta i proizvodne sposobnosti. Aktivnosti pripreme za štampu će se sastojati od definisanja odgovarajućeg softvera za obradu slike, vektorske slike na osnovu obrade i konačnog rasporeda. Takođe, istraživanje će biti upućeno u uobičajene probleme iz grafičke industrije štamparskih ploča za različite tehnike štampanja i eventualna poboljšanja u svakodnevnom korišćenju. Posebna pažnja će se posvetiti različitim tehnikama reprodukcije, osnovne tehnike merenja CIE boja, upravljanje bojama i izgledom boja modela.
Trajanje projekta:
2012, 2013, 2014
Institucije učesnici / partneri:
1. University of Novi Sad, Faculty of Technical Sciences, Novi Sad, SERBIA 2. University of Banja Luka, Faculty of Technology, Banja Luka, BOSNIA & HERZEGOVINA 3. University of Zagreb, Faculty of Graphic arts, Zagreb, CROATIA 4. Univerisity of Ljubljana, Faculty of Natural Sciences and Engineering, Ljubljana, SLOVENIA 5. University of Pardubice, Faculty of Chemical Technology, Pardubice, CZECH REPUBLIC 6. University of Sofia, Faculty of Chemical Technology and Metallurgy, Sofia, BULGARIA 7. Obuda University, Budapes, Rejto Sandro Faculty of Light industry, Budapes, HUNGARY 8. Technical University of Lodz, Faculty of textile Engineering and Marketing, Lodz, POLAND
Učesnici – istraživači sa FTN:
Živko Pavlović, Igor Karlović, Sandra Dedijer, Dragoljub Novaković, Magdolna Pal, Nemanja Kašiković, Gojko Vladić, Neda Milić, Ivana Tomić, Ivana Jurič
Oprema nabavljena iz projektnih sredstava:

CEEPUS IV PROJECT - Title:
RESEARCH AND EDUCATION IN THE FIELD OF GRAPHIC ENGINEERING AND DESIGN, JOINT PHD STUDIES
Project code / acronym:
CEEPUS III,: CIII-RS-0704-02-1314
Web site:
http://www.ceepus.info/public/network/network.aspx
Grantholder:
PhD Živko Pavlović
Coordinator from the Faculty of Technical Sciences:
PhD Živko Pavlović
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Graphic Engineering and Design / Development
Project Summary:
This project mainly aims to form proper network through which the advance of the knowledge will be enabled and significantly improved. The improvements will have a basis inconstant research and knowledge along with modern programming tools and systems. Key research will include the important areas of graphic engineering and design. The basic research will include the field of design, prepress, press, postpress and packaging. Research in the field of design will include graphic product and industrial design in a correlation with prepress,press and postpress demands. Photography, typography and realization of multimedia contents will be also the objectives of the research.Important focus is going to be put on the type design of different lettering(e.g., Latin, Cyrillic) and a various number of a critical marks. Impact of different materials used for enhancement of printed images, like special and UV pigments, will be investigated. Special attention will be paid to the market trends in terms of current requests concerning visual identity and production ability. Prepress activities will consist of defining the proper software for image processing, vector based pictures processing and final layout. Also, the research will be addressed to usual problems from the graphic industry with printing plates for different printing techniques and possible improvements in every day usage. Special attention will be paid to different reproduction techniques, basic CIE colour measurement techniques, colour management and colour appearance models.
Duration of the project:
2012, 2013, 2014
Partners:
1. University of Novi Sad, Faculty of Technical Sciences, Novi Sad, SERBIA 2. University of Banja Luka, Faculty of Technology, Banja Luka, BOSNIA & HERZEGOVINA 3. University of Zagreb, Faculty of Graphic arts, Zagreb, CROATIA 4. Univerisity of Ljubljana, Faculty of Natural Sciences and Engineering, Ljubljana, SLOVENIA 5. University of Pardubice, Faculty of Chemical Technology, Pardubice, CZECH REPUBLIC 6. University of Sofia, Faculty of Chemical Technology and Metallurgy, Sofia, BULGARIA 7. Obuda University, Budapes, Rejto Sandro Faculty of Light industry, Budapes, HUNGARY 8. Technical University of Lodz, Faculty of textile Engineering and Marketing, Lodz, POLAND
Researchers from the FTS:
Živko Pavlović, Igor Karlović, Sandra Dedijer, Dragoljub Novaković, Magdolna Pal, Nemanja Kašiković, Gojko Vladić, Neda Milić, Ivana Tomić, Ivana Jurič
Equipment purchased from the project funds:

Međunarodni projekti

EUREKA

International projects

EUREKA

EUREKA! Projekat - naziv:
E!8054- METAFER - METAMATERIAL BASED MICROWAVE FERRITE COMPONENTS
Oznaka projekta / akronim:
MetaFer
Web:
http://www.biosense.uns.ac.rs/
Rukovodilac projekta:
dr Anna Sztaniszlav
Rukovodilac projekta sa FTN:
Vesna Crnojević-Bengin
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Osnovna primenjena i razvojna istraživanja
Opis projekta:
Projekat ima za cilj razvoj novih materijala i proizvodnih tehnologija za feritne mikrotalasne komponente: cirkulatori i izolatori, i pomerača faze koji će omogućiti smanjenje veličine uređaja, težine i cene, pa će samim tim olakšati njihovu integraciju i pakovanje u avio telekomunikacione opreme najnovije generacije , koristeći novi pristup - metamaterijala (MTM). "Ks" bend radio se efikasno koriste u aplikacijama kao što su radarske, na Ks band civilnog, vojnog i državnog vazduhoplovstva, upravljanje vazdušnim saobraćajem, pomorsku kontrolu saobraćaja, odbrane i praćenje vozila, detekcija brzine.... Međutim, velika je potražnja na tržištu za je univerzalnim kompaktnim i jeftinim cirkulatorima dostupnim u Ks bendu. Trenutni feritne mikrotalasne komponente su glomazne i teške, teško se integrišu sa ostalim komponentama. Njihova minijaturizacija ima teorijske granice u trenutno koriste feritne sisteme. Prirodni materijali imaju samo pozitivne vrednosti permitivnosti i permeabilnosti koje ograničavaju protok i usklađivanje feritnog cirkulatora i izolatora. MTM strukture omogućavaju da se prevaziđu ograničenja prirodnih materijala i omogućiti bolja svojstva prenosa i ugrađuje u širem opsegu. Zato mikrotalasni predjani/prijemni moduli koji mogu da se koriste u radarima, telekomunikacionim i avio aplikacijama uglavnom imaju tendenciju da se izbegne prirodne materijale ih zamene sa drugim rešenjima: diode , MEMS, itd.. Da biste rešili problemi, nauka i tehnologija se okreću posebnim oblastima - primena MTM. MTM je veštački materijal projektovan da imaju svojstva koja se ne mogu naći u prirodi, kao što su negativna efikasna električne permitivnosti i/ili negativne efektivne magnetna permeabilnost. To nije novi materijal, već nova konstrukcija sastavljena od konvencionalnih materijala, koji međutim, izlažava nove svojstva materijala.
Trajanje projekta:
15.06.2013-15.12.2015.
Institucije učesnici / partneri:
Budapest University of Technology and Economy, Budapest, Hungary TKI-FERRIT KFT., Budapest, Hungary TAFCO METAWIRELESS S.L. , Navarra, Spain
Učesnici – istraživači sa FTN:
dr Vesna Crnojević Bengin dr Vasa Radonić dr Vladimir Crnojević i drugi saradnici u nizim zvanjima
Oprema nabavljena iz projektnih sredstava:
Nema

EUREKA! project – Title:
E!8054- METAFER - METAMATERIAL BASED MICROWAVE FERRITE COMPONENTS
Project code / acronym:
MetaFer
Web site:
http://www.biosense.uns.ac.rs/
Grantholder:
dr Anna Sztaniszlav
Coordinator from the Faculty of Technical Sciences:
Vesna Crnojević-Bengin
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Fundamental, Applied, Development
Project Summary:
This project aims at developing new materials and manufacturing technologies for microwave ferrite components: circulators and isolators, and phase shifters that will enable reduction of the device size, weight and cost, and will therefore facilitate their integration and packaging in aerospace telecommunication equipment of the new generation, using a novel approach - metamaterials (MTM). "X" band radios are effectively utilized in radar applications such as in X band civil, military, and governmental weather monitoring, air traffic control, maritime vessel traffic control, defense tracking, and vehicle speed detection for law enforcement. However, no universal compact and cheap circulators are available in the X band, thus a compact surface mount technology compatible circulators, isolators and phase shifters covering this band are a market demand. Current microwave ferrite components, even today called as miniature ones, are bulky and heavy, they are difficult to integrate with other components. Their miniaturization has theoretical limits in the presently used ferrite systems. The natural materials have only positive permittivity and permeability values which limit the bandwidth and matching of ferrite circulator and isolators. The MTM structures make possible to overcome the limitations of natural materials and enable better transmission properties and matching in a wider band. Therefore microwave Transmit/Receive modules used in radars, telecom and mainly aerospace applications tend to avoid natural materials by replacing them with other solutions: diodes, MEMS etc. but this way is not optimal. To solve the problem, the science and technology had to turn special fields - application of MTM. This project aims to develop MTM based microwave components for X-band application, to investigate the advantage of MTM application, to compare the transmission parameters of a ferrite/garnet based and a MTM based components (advantage - disadvantage) and to prepare a X-band demonstrator for aerospace application. This requires the efficient modeling and optimization of ferrite based MTMs, and development of X-band miniature components. The purpose of the present project is to set up a high-efficiency European supply chain of microwave ferrite components, isolators and circulators, and phase shifters, by integrating in a same collaborative consortium the different elements of the chain, from the new type of material to the components (product). This chain will be characterized by its reactivity because the different actors will work under a common coordination towards a common aim: to ensure European competitiveness of microwave component industry. The use of new materials and technologies will enable creation of new Intellectual Property Rights. A close collaboration between industrial, information technology partners and universities will ensure that the best solutions will be selected at every step.
Duration of the project:
15.06.2013-15.12.2015.
Partners:
Budapest University of Technology and Economy, Budapest, Hungary; TKI-FERRIT KFT., Budapest, Hungary TAFCO METAWIRELESS S.L. , Navarra, Spain
Researchers from the FTS:
dr Vesna Crnojević Bengin, dr Vasa Radonić, dr Vladimir Crnojević
Equipment purchased from the project funds:
No

Međunarodni projekti

Multilateralni projekti

International projects

Multilateral projects

SEE Transnational Cooperation programme:
TRANSNACIONALNA MREŽA ZA UNAPREĐENJE DRUMSKOG I VODENOG MULTIMODALNOG TRANSPORTA
Oznaka projekta / akronim:
WATERMODE
Web:
www.watermode.eu
Rukovodilac projekta:
Paolo Costa, Autorita Portuale di Venezia, Santa Marta, Italia
Rukovodilac projekta sa FTN:
Prof. dr Milosav Georgijević
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Tehnika, logistika /primenjena istraživanja
Opis projekta:
WATERMODE je projekat koji ima za cilj da promoviše bolju koordinaciju između nadležnih organa zainteresovanih strana sa namerom da se poveća konkurentnost svim vidovima saobraćaja koji se smatraju alternativnim drumskom saobraćaju, naročito vodno / kopnenoj multimodalnoj logističkoj kooperaciji. Da b se to postiglo, definisane su projektne aktivnosti kako bi se obezbedili instrumenti za unapređenje koordinacije i iskorišćenje potencijala vodno / kopnenog multimodalnog transporta. Opšti cilj WATERMODE projekta je promovisanje koordinacije između privatnih i javnih aktera koji se bave logistikom i prostornim planiranjem, kako bi se postiglo bolje upravljanje multimodalnim transportnim sistemima.
Trajanje projekta:
2009. – 2014.
Institucije učesnici / partneri:
Luka Venecija, Veneto Region, Luka Ankona, Luke Levante, Austrijski istraživački centar za mobilnost, Asocijacija panonskih privrednih mreža, Luka koper, Evropski poslovni i inovacioni centar Atike, Luka Aleksandropoli, Izvršna agencija pomorske administracije Bugarske, Luka Konstanca, Luka Drač, Regionalna agencija za razvoj malijh I srednjih preduzeća Alma Mons d.o.o., Luka Bar, Fakultet tehničkih nauka univerziteta u Novom Sadu
Učesnici –istraživači sa FTN:
Milosav Georgijevic,Sanja Bojić Vladimir Bojanić Goran Bojanic
Oprema nabavljena iz projektnih sredstava:
-

SEE Transnational Cooperation programme – Title:
TRANSNATIONAL NETWORK FOR THE PROMOTION OF THE WATER-GROUND MULTIMODAL TRANSPORT
Project code / acronym:
WATERMODE
Web site:
www.watermode.eu
Grantholder:
Paolo Costa, Autorita Portuale di Venezia, Santa Marta, Italia
Coordinator FTS:
Prof. Dr. Milosav Georgijević
Scientific Research Fields / Type of research (Fundamental / Applied / Development):
Technology, logistics / applied research
Summary:
The programme area is crossed by relevant freight traffic flows, originated and directed in- and outside it. This traffic is mainly supported by road infrastructures, that were not planned for these flows. This involves a negative impact on the territorial competitiveness and environment, due to air pollution, noise and reduced mobility. The project objective is to promote the coordination between actors dealing with logistics for a better management of the transport policies and an efficient implementation of the multimodal logistics cooperation, especially exploiting the ground/water connections. This will be achieved through a monitoring on the existing multimodal platforms, the coordination of strategies for the promotion of the water/ground multimodality, the definition of common quality standards in transport and logistics services, the implementation of pilot studies for multimodality based on sea and inland waterways as factor of competitiveness and environmental sustainability. The project will therefore highlight the potentials of the waterways crossing the area, contributing to the full integration of the maritime and river transport in the logistics chain.
Duration:
2009-2014
Partners:
Autorita' Portuale Di Venezia, Veneto Region, Ancona Port Authority, Levante Port Authority, Austrian Mobility Research, Pannon Business Network Association, Luka Koper, port and logistic system, public limited company, Business and Innovation Center of Attika, Port Authority of Alexandroupolis, Executive Agency Maritime Administration Bulgaria, National Company Maritime Ports Administration SA Constantza, Durres Port Authority, Alma Mons regional Agency for small and medium enterprises, Port of Bar, University of Novi Sad, Faculty of Technical Sciences
Researchers from the FTS:
Milosav Georgijevic Sanja Bojić, Vladimir Bojanić, Goran Bojanic,
Equipment purchased from project funds:
-

Projekat multilateralne saradnje – naziv:
PRODUCT LIFECYCLE MANAGEMENT INTERNATIONAL NETWORK
Oznaka projekta / akronim:
PLM - InNET
Web:
http://www.master-plm.net/
Rukovodilac projekta:
Rukovodilac projekta sa FTN:
Prof. dr Zoran Anišić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Indutrijsko inženjerstvo/Primenjena istraživanja
Opis projekta:
Multilateralna saradnja ima za cilj istraživanje, promociju i saradnju u području upravljanja svim podacima o proizvodu u toku životnog ciklusa (Product Lifecycle Management). Institucije partneri sprovode navedene aktivnosti kroz organizaciju seminara, konferencija i saradnje sa privredom u regionu.
Trajanje projekta:
2011. – 2015.
Institucije učesnici / partneri:
Faculty of Technical Sciences, Novi Sad, Serbia Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129 Torino, ITALY University of Maribor, Faculty of Mechanical Engineering, Maribor, SLOVENIA University Ss.Cyril and Methodius, Faculty of Mechanical Engineering, Skopje, MACEDONIA University of Zagreb, Faculty of Mechanical Engineering and Naval Architecture, Zagreb, CROATIA University of Split, Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, Split, CROATIA
Učesnici –istraživači sa FTN:
Zoran Anišić, Ilija Ćosić, Nikola Suzić, Nemanja Sremčev
Oprema nabavljena iz projektnih sredstava:

Multilateral Cooperation Project – Title:

PRODUCT LIFECYCLE MANAGEMENT INTERNATIONAL NETWORK

Project code / acronym:

PLM - InNET

Web site:

http://www.master-plm.net/

Grantholder:

-

Coordinator FTS:

Prof. Dr. Zoran Anišić

Scientific Research Fields / Type of research (Fundamental / Applied / Development):

Industrial Engineering/Applied Reseach

Summary:

The mission of the PLM InNET is to gather and join institutions in the field of Product lifecycle Management (PLM) which represents an all-encompassing vision for managing all data relating to the design, production, sustainable manufacturing, support and ultimate disposal of manufactured products, with the aim to become leading association in education, research and promotion of PLM strategy, processes and tools.

Duration:

2011 - 2015

Partners:

Faculty of Technical Sciences, Novi Sad, Serbia
Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129 Torino, ITALY
University of Maribor, Faculty of Mechanical Engineering, Maribor, SLOVENIA
University Ss.Cyril and Methodius, Faculty of Mechanical Engineering, Skopje, MACEDONIA
University of Zagreb, Faculty of Mechanical Engineering and Naval Architecture, Zagreb, CROATIA
University of Split, Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, Split, CROATIA

Researchers from the FTS:

Zoran Anišić, Ilija Ćosić, Nikola Suzić, Nemanja Sremčev,

Equipment purchased from project funds:

-

Multilateral Cooperation Project – Title:
THE PLATFORM FOR BUILDING THE NETWORK OF LCA CENTERS AND R&D INSTITUTES FROM CENTRAL AND SOUTHEASTERN EUROPE
Project code / acronym:
114-451-3774/2011-01
Web site:
http://caselca.org/
Grantholder:
Prof. Dr. Janko Hodolič
Coordinator FTS:
Prof. Dr. Janko Hodolič
Scientific Research Fields / Type of research (Fundamental / Applied / Development):
Development
Summary:
Establishing and promoting a platform for building a network that will support the multilateral cooperation and communication between R&D institutes and LCA centers in the countries of Central and Southeastern Europe, as well as establishing multilateral collaboration in research, development, teaching and studies area. Educational LCA activities - sharing knowledge, experience and expertise through scientific conferences and other meetings organized within the network and hosted by network members; creating new or changing existing study programs within the higher education; (summer school organization), creating one common, comprehensive database that is educational, scientific and innovative (industrial) oriented; intensifying the integration and application of the LCA method in research, scientific, educational, government and industrial sector and also improving their mutual cooperation and communication. Scientific LCA activities - within the established network can be defined various research directions that will contribute to the overall development and integration of the LCA methodology. Innovative LCA activities - transfer of knowledge and results gained through research and educational sector in the industry sector.
Duration:
2 years
Partners:
University of Novi Sad, Faculty of Technical Sciences; Poznan University of Technology, Faculty of Machines and Transportation; University of Miskolc, Faculty of Economics; The University of J. E. Purkyně in Ústí nad Labem, Faculty of the Environment; University of Ljubljana (Faculty of Natural Sciences and Engineering); Josip Juraj Strossmayer University of Osijek, Mechanical Engineering Faculty; University of Central Europe in Skalica
Researchers from the FTS:
Janko Hodolič, Igor Budak, Miodrag Hadžistević, Đorđe Vukelić, Branislav Milanović, Darko Milanković, Boris Agarski, Milana Ilić, Branislava Crnobrnja.
Equipment purchased from project funds:
-

Projekat multilateralne saradnje – naziv:
PLATFORMA ZA PRAVLJENJE MREŽE LCA CENTARA I ISTRAŽIVAČKIH INSTITUCIJA IZ CENTRALNE I JUGOISTOČNE EVROPE
Oznaka projekta / akronim:
114-451-3774/2011-01
Web:
http://caselca.org/
Rukovodilac projekta:
Prof. dr Janko Hodolič
Rukovodilac projekta sa FTN:
Prof. dr Janko Hodolič
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Razvojna
Opis projekta:
Uspostavljanje i promovisanje platforme za izgradnju mreže koja će podržati multilateralnu saradnju i komunikaciju između istraživačkih institucija i centara LCA u zemljama Centralne i Jugoistočne Evrope, kao i uspostavljanje multilateralne saradnje u istraživanje, razvoj, učenje i studije iz te oblasti. Edukativne LCA aktivnosti - razmena znanja, iskustva i stručnosti kroz naučne konferencije i druge skupove organizovane u okviru mreže, stvaranje novih ili menjanje postojećih studijskih programa u okviru visokog obrazovanja; (organizacija letnje škole), stvaranje jedne zajedničke, sveobuhvatne baze podataka koja je obrazovna, naučna i inovativna; intenziviranje integracije i primene LCA metode u istraživanju, naučnom, obrazovnom, vladinom i industrijskom sektoru i takođe poboljšanje njihove međusobne saradnje i komunikacije. Naučne LCA aktivnosti - u okviru uspostavljene mreže mogu se definisati različiti istraživački pravci koji će doprineti ukupnom razvoju i integraciji LCA metodologije. Inovativne aktivnosti LCA - transfer znanja i rezultati dobijeni kroz istraživački i obrazovni sektor i u privrednom sektoru.
Trajanje projekta:
2 godine
Institucije učesnici / partneri:
University of Novi Sad, Faculty of Technical Sciences; Poznan University of Technology, Faculty of Machines and Transportation; University of Miskolc, Faculty of Economics; The University of J. E. Purkyně in Ústí nad Labem, Faculty of the Environment; University of Ljubljana (Faculty of Natural Sciences and Engineering); Josip Juraj Strossmayer University of Osijek, Mechanical Engineering Faculty; University of Central Europe in Skalica
Učesnici –istraživači sa FTN:
Janko Hodolič, Igor Budak, Miodrag Hadžistević, Đorđe Vukelić, Branislav Milanović, Darko Milanković, Boris Agarski, Milana Ilić, Branislava Crnobrnja.
Oprema nabavljena iz projektnih sredstava:
-

Projekat multilateralne saradnje – naziv:
KONCENTRACIONI NIVOI POPS U AMBIJENTALNOM VAZDUHU CENTRALNE I ISTOČNE EVROPE: PRIMENA TEHNIKE PASIVNOG UZORKOVANJA ZA ODREĐIVANJE TRENDA KONCENTRACIONIH NIVOA POPS I EVALUACIJE INTERNACIONALNIH KONVENCIJA
Oznaka projekta / akronim:
MONET CEECs
Web:
http://monet-ceec.eu/
Rukovodilac projekta:
Prof. dr Ivan Holoubek, RECETOX MU, Czech Republic
Rukovodilac projekta sa FTN:
Prof. emeritus dr Mirjana Vojinović Miloradov
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Inženjerstvo zaštite životne sredine/primenjena i razvojna
Opis projekta:
Cilj Projekta je određivanje koncentracionih nivoa POPs u životnom okruženju geo prostora CEE, ekonomski prihvatljivom metodologijom pasivnog uzorkovanaj. Mreža globalnog monitoringa u okviru projekta MONET_CEECs struktuirana je u skladu sa Stokholmskom konvencijom, sa ciljem utvrđivanja bazičnih linijskih trendova na globalnim tačkama od interesa regiona Centralne i Istočne Evrope. U okviru Projekta finalizovana je analiza stepena efektivnosti primene PAS, baziranih na PUF filterima, za merenja propisana internacionalnim konvencijama u oblasti monitoringa perzistentnih organskih polutanata (POPs under the Stockholm Convention i POPs Protocol of CRLTAP) na području CEE zemalja. Definisani su reprezentativni setovi lokaliteta, rangirani od industrijskih do 'background' tačaka, i izvedene su dvanaestomesečne kampanje uzorkovanja, segmentisana u vremenskom periodu od 2009. godine – danas. U okviru Projekta sprovedena je evaluacija vremenskih i prostornih trendova koncentracionih nivoa POPs u ambijentalnom vazduhu na teritoriji regiona Centralne i Istočne Evrope, formiran dugoročni PAS monitoring program u regionu kao i disiminirana su nova znanja iz oblasti savremenih i visoko-efikasnih tehnika uzorkovanja, analize, toksikoloških 'screening' metodologija, analize uticaja i monitoringa POPs.
Trajanje projekta:
2009-
Institucije učesnici / partneri:
RECETOX MU, Czech Republic/University of Belgrade/Estonian Environmental Institute/ Latvian Environment, Geology and Meteorology Agency/Institute of Physics, Lithuania/University of Iasi, Romania/National Institute of Research-Development for Environmental Protection, Romania/Slovak Hydrometeorogical Institute/Slovak Medical University-Institute of Preventive and Clinical Medicine
Učesnici –istraživači sa FTN:
Mirjana Vojinović Miloradov, Maja Turk Sekulić, Jelena Radonić, Maja Đogo
Oprema nabavljena iz projektnih sredstava:
Pasivni uzorkivači

Multilateral Cooperation Project – Title:
MONET CEECS - POPS CONCENTRATIONS IN AMBIENT AIR OF THE CENTRAL AND EASTERN EUROPE (CEE): APPLICATION OF THE PASSIVE AIR SAMPLING TECHNIQUE AS A TOOL FOR TREND DETERMINATION, AND EFFECTIVENESS EVALUATION OF INTERNATIONAL CONVENTIONS
Project code / acronym:
MONET CEECs
Web site:
http://monet-ceec.eu/
Grantholder:
Prof. Dr. Ivan Holoubek, RECETOX MU, Czech Republic
Coordinator FTS:
Professor emeritus Dr. Mirjana Vojinović Miloradov
Scientific Research Fields / Type of research (Fundamental / Applied / Development):
Environmental engineering/Applied and Development
Summary:
The main objectives of the project were evaluation of temporal and spatial trends in the POP concentrations in ambient air in the countries of the Central and Eastern European region, establishment of the long-term PAS monitoring program in the region and transfer of know-how, dissemination of information about new techniques for sampling, chemical analysis, toxicological screening, and risk assessment.
Duration:
2009-
Partners:
RECETOX MU, Czech Republic/University of Belgrade/Estonian Environmental Institute/ Latvian Environment, Geology and Meteorology Agency/Institute of Physics, Lithuania/University of Iasi, Romania/National Institute of Research-Development for Environmental Protection, Romania/Slovak Hydrometeorogical Institute/Slovak Medical University-Institute of Preventive and Clinical Medicine
Researchers from the FTS:
Mirjana Vojinović Miloradov, Maja Turk Sekulić, Jelena Radonić, Maja Đogo
Equipment purchased from project funds:
Passive air samplers

Projekat multilateralne saradnje – naziv:
KOMPJUTERSKA LINEARNA ALGEBRA
Oznaka projekta / akronim:
CLA
Web:
Rukovodilac projekta:
Prof. dr Rade Doroslovački
Rukovodilac projekta sa FTN:
Asistent master Ksenija Doroslovački
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
primenjena
Opis projekta:
Multilateralna saradnja, zasnovana na ugovoru o saradnji koji podrazumeva: a) medjusobna pozivna predavanja istraživača, u cilju edukacije ili učešća u naučno istraživačkom radu; b) zajednička naučna istraživanja u oblastima od zajedničkog interesa, u skladu sa prethodno sačinjenim zajedničkim programom; c) učešće na seminarima, konferencijama i naučnim kolokvijumima na poziv jedne ili druge strane.
Trajanje projekta:
1.10.2012. – 1.10.2015.
Institucije učesnici / partneri:
Institute of Computional Mathematics, School of Mathematics and Statistic, Lanzhou University, P.R. China, Computer Center, Southern Federal University, Rostov-on-Don, Russia**.**
Učesnici –istraživači sa FTN:
Ksenija Doroslovački
Oprema nabavljena iz projektnih sredstava:
-

Multilateral Cooperation Project – Title:
COMPUTATIONAL LINEAR ALGEBRA
Project code / acronym:
CLA
Web site:
Grantholder:
Prof. Dr. Rade Doroslovački– Faculty of Technical Scences
Coordinator FTS:
Ksenija Doroslovački
Scientific Research Fields / Type of research (Fundamental / Applied / Development):
Applied
Summary:
Multilateral cooperation, based on the research agreement, which implies: a) mutual invitation of lectures and research workers for giving lectures, teaching or participation in research work; b) fulfilment of joint scientific investigations in fields of mutual interest according to previously drawn up joint programmes; c) participation in seminars, conferences and scientific colloquia at the invitation of the one or the other party.
Duration:
October 1, 2012 – October 1, 2015
Partners:
Institute of Computional Mathematics, School of Mathematics and Statistic, Lanzhou University, P.R. China, Computer Center, Southern Federal University, Rostov-on-Don, Russia.
Researchers from the FTS:
Ksenija Doroslovački
Equipment purchased from project funds:
-

Međunarodni projekti

TEMPUS

International projects

TEMPUS

TEMPUS IV Projekat – naziv:

MREŽA ZA EDUKACIJU I TRENING U JAVNIM LABORATORIJAMA U OBLASTI ŽIVOTNE SREDINE

Oznaka projekta / akronim:

/530554-TEMPUS-1-2012-1-SK-JPHES / NETREL

Web:

Rukovodilac projekta:

Prof. dr Ivan Španik, Slovački tehnološki univerzitet u Bratislavi

Rukovodilac projekta sa FTN:

Prof. emeritus dr Mirjana Vojinović Miloradov

Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):

Primenjena

Opis projekta:

Specifični ciljevi Projekta su:

- Ravoj kapaciteta za organizovanje savremene obuke za istraživače sa Univerziteta u Novom Sadu, Univerziteta u Beogradu, Univerziteta u Sarajevu i Univerziteta u Banja Luci u oblasti modernih metoda monitoringa prioritetnih supstanci, emergentnih supstanci, perzistentnih organskih polutanata i drugih polutanata u životnoj sredini.
- Transfer znanja zaposlenima u javnim laboratorijama u oblasti analitike životne sredine na lokalnom, regionalnom i nacionalnom nivou, od strane obučenih istraživača sa univerziteta u Srbiji i Bosni i Hercegovini, kao partnerskih zemalja.
- Razvoj i implementacija održive regionalne NETREL mreže u cilju organizovanja trening kurseva za zaposlene u javnim laboratorijama u oblasti zaštite životne sredine na teritoriji Regiona Zapadnog Balkana.

Trajanje projekta:

15.11.2012. - 14.11.2015.

Institucije učesnici / partneri:

Slovački tehnološki univerzitet u Bratislavi, Masaryk University, University of Portsmouth, Univerzitet u Novom Sadu, Univerzitet u Beogradu, Univerzitet u Sarajevu, Univerzitet u Banja Luci, Institut za javno zdravlje Republike Srpske, Javno preduzeće Vodovod AD Prnjavor, Federalni agromediteranski instutut u Mostaru, Institut za javno zdravlje kantona Sarajevo, Agencija za zaštitu životne sredine Srbije, Institut za javno zdravlje Vojvodine, JP Vodovod i kanalizacija Novi Sad

Učesnici –istraživači sa FTN:

Mirjana Vojinović Miloradov, Jelena Radonić, Maja Turk Sekulić, Miljana Prica, Dušan Milovanović, Maja Đogo, Ivana Mihajlović

Oprema nabavljena iz projektnih sredstava:

-

TEMPUS IV project – Title:

NETWORK FOR EDUCATION AND TRAINING FOR PUBLIC ENVIRONMENTAL LABORATORIES

Project code / acronym:

/530554-TEMPUS-1-2012-1-SK-JPHES / NETREL

Web site:

Grantholder:

Prof. Dr. Ivan Spanik, Slovak University of Technology in Bratislava

Coordinator FTS:

Professor emeritus Dr. Mirjana Vojinović Miloradov

Scientific Research Fields / Type of research (Fundamental / Applied / Development):

Applied

Summary:

Specific objectives of the Project:

- To develop capacity to provide up-to-date training for the staff of University of Novi Sad, University of Belgrade, University of Sarajevo, University of Banja Luka related to monitoring of priority substances, emerging substances, persistant organic pollutants and other environmental pollutants.
- To transfer the knowledge from trained PC University staff to public environmental laboratories at local, regional and national level.
- To develop and implement sustainable regional NETREL network aimed at offering training courses in Partner Countries for public environmental laboratories in the Western Balkan Region.

Duration:

November 15, 2012 - November 14,2015

Partners:

Slovak University of Technology in Bratislava, Masaryk University, University of Portsmouth, University in Novi Sad, University in Belgrade, University in Sarajevo, University of Banja Luka, Public Health Institute of Republic of Srpska, Utility company Vodovod AD Prnjavor, Federal Agromediterranean Institute of Mostar, Institute for Public Health of Canton Sarajevo, Serbian Environmental Protection Agency, Public Health Institute of Vojvodina, Public utility Company Waterwork and Sewerage Novi Sad

Researchers from the FTS:

Mirjana Vojinović Miloradov, Jelena Radonić, Maja Turk Sekulić, Miljana Prica, Dušan Milovanović, Maja Đogo, Ivana Mihajlović

Equipment purchased from project funds:

TEMPUS IV Projekat – naziv:
MODERNIZATION OF WBC UNIVERSITIES THROUGH STRENGTHENING OF STRUCTURES AND SERVICES FOR KNOWLEDGE TRANSFER, RESEARCH AND INNOVATION
Oznaka projekta / akronim:
WBCInno
Web:
http://www.wbc-inno.kg.ac.rs
Rukovodilac projekta:
Prof. dr Vesna Mandić, Univerzitet u Kragujevcu, Srbija
Rukovodilac projekta sa FTN:
Prof. dr Goran Stojanović
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
TEMPUS Visoko obrazovanje i društvo
Opis projekta:
Osnovne uloge projekta WBCInno su: • Uspostavljanje regionalnih univerzitetskih inovacionih platformi (UIP), na pet univerziteta sa područja Zapadnog Balkana za integraciju i fokusiranje na inovacije i podsticanje na transfer tehnologija i komercijalizaciju • Ojačavanje postojeće i uspostavljanje nove strukture Univerziteta i usluga u oblasti transfera znanja, istraživanja i inovacija, u skladu sa UIP • Podrška razvoju univerziteta zasnovanih na poslovnih inkubatora i nauku tehnoloških parkova u regionu Zapadnog Balkana, kroz mobilisanje resursa univerziteta i partnerstva sa poslovnim svetom • Razvoj metodologije za upravljanje inovacijama i umrežavanje različitih aktera kros-funkcionalnih od univerziteta i biznisa, na osnovu zajedničke softverske platforme / alata za M18 • Olakšano stvaralaštvo mladih i uključivanje javnih i privatnih subjekata zainteresovanih u svim procesima modernizacije na osnovu Triple Helik modela saradnje
Trajanje projekta:
3 godine (od 01.12.2012. do 30.11.2015.)
Institucije učesnici / partneri:
Koordinator projekta: Univerzitet u Kragujevcu, Kragujevac, Srbija Učesnici projekta iz zemalja EU: University of Brighton, Brighton, Engleska, Graz University of Technology, Graz, Austrija, Centre for Social Innovation, Beč, Austrija, University of Alicante, Alicante, Španija, Hamburg University of Technology, Hamburg, Nemačka Učesnici projekta iz zemalja Zapadnog Balkana: Universitet u Novom Sadu, Novi Sad, Srbija, Universitet u Zenici, Zenica, Bosna i Hercegovina, Universitet u Banjoj Luci, Banja Luka, Bosna i Hercegovina, Universitet u Crnoj Gori, Podgorica, Crna Gora, Poslovno tehnološki incubator tehničkih fakulteta, Beograd Srbija, Inovacioni poslovni centar LLC, Kragujevac, Srbija, Poslovni Inkubator, Novi Sad, Srbija, Poslovni servis centar vlade Zeničko-Dobojskog kantona, Bosna i Hercegovina, Intranea Solutions, Srbija, Inovacioni centar Banja Luka, Bosna i Hercegovina, Poslovni inkubator "Inventivnost", Podgorica, Crna Gora
Učesnici –istraživači sa FTN:
Goran Stojanović, Vojin Šenk, Vesna Rašković, Jelena Borocki, Nataša Samardžić, Sanja Kojić, Milan Radovanović, Mladen Radišić
Oprema nabavljena iz projektnih sredstava:
-

TEMPUS IV project – Title:

MODERNIZATION OF WBC UNIVERSITIES THROUGH STRENGTHENING OF STRUCTURES AND SERVICES FOR KNOWLEDGE TRANSFER, RESEARCH AND INNOVATION

Project code / acronym:

WBCInno

Web site:

http://www.wbc-inno.kg.ac.rs

Grantholder:

Prof. Dr. Vesna Mandić, University of Kragujevac, Serbia

Coordinator FTS:

Prof. Dr. Goran Stojanović

Scientific Research Fields / Type of research (Fundamental / Applied / Development):

TEMPUS Higher Education and Society

Summary:

The main roles of the project WBCInno are:

- To establish Regional University Innovation Platform (UIP) at five WBC universities for integration and focusing on innovation potential and for fostering technology transfer and commercialization, by M12
- To reinforce existing and to establish new university structures and services in the areas of knowledge transfer, research and innovation, in line with UIP, by M18
- To support the development of university-based Business Incubators (BI) and Science Technology Parks (STP) in the WBC region, through mobilizing of university resources and partnerships with business world
- To develop a methodology for innovation management and networking of different cross-functional stakeholders from university and business, based on collaborative software platform/tool by M18
- To facilitate the creativity of young people and involvement of public and private stakeholders in all modernization processes based on the Triple Helix model of cooperation

Duration:

December 1, 2012 – November 30, 2015

Partners:

Lead partner:

University of Kragujevac, Kragujevac, Serbia

EU Members:

University of Brighton, Brighton, United Kingdom, Graz University of Technology, Graz, Austria, Centre for Social Innovation, Wien, Austria, University of Alicante, Alicante, Spain, Hamburg University of Technology, Hamburg, Germany

PC Members:

University of Novi Sad, Novi Sad, Serbia, University of Zenica, Zenica, Bosnia and Herzegovina, University of Banja Luka, Banja Luka, Bosnia and Herzegovina, University of Montenegro, Podgorica, Montenegro, Business Technology Incubator of Technical Faculties Belgrade, Serbia, Business innovation centre LLC Kragujevac, Serbia, Business Incubator Novi Sad, Serbia, Business Service Center of Government of Zenica-Doboj Canton, Bosnia and Herzegovina, Intranea Solutions, Serbia, Innovation centre Banja Luka, Bosnia and Herzegovina, Busines Incubator "Inventivnost", Podgorica, Montenegro

Researchers from the FTS:

Goran Stojanović, Vojin Šenk, Vesna Rašković, Jelena Borocki, Nataša Samardžić, Sanja Kojić, Milan Radovanović, Mladen Radišić

Equipment purchased from project funds:

-

TEMPUS projekat– naziv:
IMPROVEMENT OF PRODUCT DEVELOPMENT STUDIES IN SERBIA AND BOSNIA AND HERZEGOVINA
Oznaka projekta / akronim:
530577-2012 IPROD
Web:
http://iprod.masfak.ni.ac.rs/
Rukovodilac projekta:
Prof. dr Vojislav Miltenović
Rukovodilac projekta sa FTN:
Prof. dr Siniša Kuzmanović
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Razvojna
Opis projekta:
- Osnivanje novih nastavnih planova i programa u oblasti upravljanja razvojem proizvoda i inovacionog menadžmenta, razvojem eko-proizvoda i modernizacije postojećih nastavnih programa u okviru industrijskog razvoja proizvoda na master i doktorskim studijama. - Uspostavljanje kontinualnog obrazovanja u vidu kurseva u oblasti industrijskog razvoja proizvoda. - Harmonizacija i modernizacija obrazovanja u oblasti industrijskog razvoja proizvoda kroz obuku nastavnika iz visokih škola.
Trajanje projekta:
15.10.2012. - 14.10.2015.
Institucije učesnici / partneri:
Visoka mašinska škola, Trstenik; Visoka tehnička škola strukovnih studija, Požarevac; Visoka tekstilna škola, Leskovac; GOŠA Fabrika opreme i mašina, a.d., Smederevska Palanka; Tehnološki institut u Karlsrue, Karlsrue, Nemačka; Zavod za zapošljavanje, Kragujevac; "Orao" a.d. proizvodnja i remont, ORAO, Bijeljina, BiH; Regionalana privredna i industrujska komora, Niš; Regionalana privredna komora, Kragujevac; Slovački tehnološki univerzitet, Bratislava, Slovačka; Visoka tehnička škola, Subotica; Tehnički univerzitet u Sofiji, Sofija, Bugarska; Visoka železnička škola strukovnih studija, Beograd; Visoka tehnička škola, Niš; Univerzitet u Banjaluci, Banjaluka, BiH; Univerzitet u Beogradu, Beograd; Univerzitet u Istočnom Sarajevu, Istočno Sarajevo, BiH; Univerzitet u Kragujevcu, Kragujevac; Univerzitet u Mostaru, Mostar, BiH; Univerzitet u Novom Sadu, Novi Sad; Zastava automobili, Kragujevac
Učesnici – istraživači sa FTN:
Prof. dr Siniša Kuzmanović, Prof. dr Zoran Anišić, Prof. dr Slobodan Navalušić, V.prof. dr Zoran Milojević, Doc. dr Milan Rackov, Doc. dr Maja Čavić, Doc. dr Milan Kostić, S.saradnik Ivan Knežević
Oprema nabavljena iz projektnih sredstava:
Pametna tabla - 1 kom. 3D printer - 1 kom. A4 network printer - 2 kom. Laptop kompjuter - 3 kom. Video projektor - 2 kom. RS kompjuter - 6 kom.

Tempus project – Title:
IMPROVEMENT OF PRODUCT DEVELOPMENT STUDIES IN SERBIA AND BOSNIA AND HERZEGOVINA
Project code / acronym:
IPROD
Web site:
http://iprod.masfak.ni.ac.rs/
Grantholder:
Prof. PhD. Vojislav Miltenović
Coordinator from the Faculty of Technical Sciences:
Prof. PhD. Siniša Kuzmanović
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Development
Project Summary:
– Establishment of new curriculums in the field of Management in Product Development and Innovation Management, Development of Eco-products and modernisation of existing curriculums in industrial product development at master/specialist and doctoral level – Establishment of continuous education courses in the field of Industrial Product development – Harmonization and modernization of education in the field of Industrial Product Development through training of teachers at colleges of applied sciences
Duration of the project:
15.10.2012. - 14.10.2015.
Partners:
College of Applied Mechanical Engineering, Trstenik, Serbia; Visoka tehnička škola strukovnih studija Požarevac, Srbija; College of Textile, Leskovac, Serbia; GOŠA Machine and Equipment Factory, Joint Stock Company, Smederevska Palanka, Serbia; Karlsruhe Institute of Technology, Karlsruhe, Germany; National Employment Service, Kragujevac, Serbia; "Orao" a.d. for Production and Overhaul, ORAO, Bijeljina, Bosnia and Herzegovina; Regional Chamber of Commerce and Industry, Niš, Serbia; Regional Chamber of Commerce; Slovak University of Technology; Subotica Tech - College of Applied Sciences; Technical University of Sofia; The Railway College of Vocational Studies; The School of Higher Technical Professional Educatiuon; University of Banja Luka; University of Belgrade; University of East Sarajevo, East Sarajevo, Bosnia and Herzegovina; University of Kragujevac; University of Mostar, Mostar, Bosnia and Herzegovina; University of Novi Sad; Zastava Vehicles Group under Restructuring
Researchers from the FTS:
Prof. PhD. Siniša Kuzmanović, Prof. PhD. Zoran Anišić, Prof. PhD. Slobodan Navalušić, Assoc.Prof. PhD. Zoran Milojević, Assist.Prof. PhD. Milan Rackov, Assist.Prof. PhD. Maja Čavić, Assist.Prof. PhD. Milan Kostić, Associate Ivan Knežević
Equipment purchased from the project funds:
Smart board - 1 pcs., 3D printer - 1 pcs., A4 network printer - 2 pcs., Laptop computer - 3 pcs., Video projector - 2 pcs., PC computer - 6 pcs.

TEMPUS projekat– naziv:
ASSISTING HUMANS WITH SPECIAL NEEDS: CURRICULUM FOR HUMAN-TOOL INTERACTION NETWORK - HUTON
Oznaka projekta / akronim:
Tempus Project No. 530510-TEMPUS-1-2012- 1-RS-TEMPUS
Web:
www.huton.org
Rukovodilac projekta:
prof. dr Aleksandar Sedmak, Univerzitet u Beogradu, Mašinski fakultet
Rukovodilac projekta sa FTN:
prof. dr Nikola Jorgovanović
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Biomedicinsko inženjerstvo, Robotika, Mehatronika, Rehabilitaciono inženjerstvo / razvojna
Opis projekta:
Uspostavljanje interdisciplinarne trening mreže i razvoj kurikuluma za interdisciplinarne master studije koje će obezbediti napredak u oblasti primene modernih mehatroničkih sistema u cilju poboljšanja kvaliteta života ljudi sa posebnim potrebama.
Trajanje projekta:
15.10.2012. – 14.10.2015.
Institucije učesnici / partneri:
1. Univerzitet u Beogradu – koordinator 2. Univerzitet u Novom Sadu 3. Državni Univerzitet u Novom Pazaru 4. Klinika za rehabilitaciju dr Miroslav Zotović, Beograd 5. Institut za zaštitu zdravlja dece i omladine Vojvodine, Novi Sad 6. Specijalna bolnica za lečenje neuromišićnih bolesti NP, Novi Pazar 7. University of Patras, Rio-Patras, Greece 8. Univerza v Ljubljani, Ljubljana, Slovenia 9. Università degli Studi di Genoa, Genoa, Italy
Učesnici – istraživači sa FTN:
1. dr Nikola Jorgovanović, vanredni profesor 2. dr Branislav Borovac, redovni profesor 3. dr Stevan Stankovski, redovni profesor 4. dr Dubravka Bojanić, docent 5. dr Gordana Ostojić, docent 6. dr Vojin Ilić 7. Nikola Popov
Oprema nabavljena iz projektnih sredstava:
Računarska oprema: 7 laptop i 5 desktop računara

Tempus project – Title:
ASSISTING HUMANS WITH SPECIAL NEEDS: CURRICULUM FOR HUMAN-TOOL INTERACTION NETWORK - HUTON
Project code / acronym:
Tempus Project No. 530510-TEMPUS-1-2012- 1-RS-TEMPUS
Web site:
www.huton.org
Grantholder:
Aleksandar Sedmak PhD, prof., *University of Belgrade, Faculty of Mechanical Engineering*
Coordinator from the Faculty of Technical Sciences:
Nikola Jorgovanović PhD, prof.
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Biomedical Engineering, Robotics, Mechatronics, Rehabilitation Engineering/ Development
Project Summary:
This project seeks to establish a national interdisciplinary training network and build the new curriculum on aspects of effective use of tools and their interaction with humans with special needs.
Duration of the project:
15.10.2012. – 14.10.2015.
Partners:
1. University of Belgrade– coordinator 2. University of Novi Sad 3. State University of Novi Pazar 4. Clinic for rehabilitation "Dr Miroslav Zotović", Beograd 5. Child and Youth Health Care Institute of Vojvodina, Novi Sad 6. Special Hospital for treatment of Neuromuscular Diseases NP, Novi Pazar 7. University of Patras, Rio-Patras, Greece 8. University of Ljubljana, Ljubljana, Slovenia 9. University of Genoa, Genoa, Italy
Researchers from the FTS:
1. Nikola Jorgovanović, associate profesor 2. Branislav Borovac, full profesor 3. Stevan Stankovski, full profesor 4. Dubravka Bojanić, assistant professor 5. Gordana Ostojić, assistant professor 6. Vojin Ilić 7. Nikola Popov
Equipment purchased from the project funds:
Computer equipment: 7 laptop and 5 desktop computers

TEMPUS projekat– naziv:
MASTERING INNOVATION IN SERBIA THROUGH DEVELOPMENT AND IMPLEMENTATION OF INTERDISCIPLINARY POST-GRADUATE CURRICULA IN INNOVATION MANAGEMENT
Oznaka projekta / akronim:
544278-TEMPUS-1-2013-1-RS-TEMPUS-JPCR
Web:
www.main.uns.ac.rs
Rukovodilac projekta:
Doc. Dr Željko Tekić , Univerzitet u Novom Sadu
Rukovodilac projekta sa FTN:
Doc. Dr Željko Tekić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Razvoj i modernizacija kurikuluma
Opis projekta:
Opšti cilj projekta je da se podsticanje inovativnog kapaciteta i održiv izvor kvalitetnih ljudskih resursa modernizacijom visoko obrazovnog sistema u Srbiji. Cilj projekta će biti postignut kroz razvoj i realizaciju interdisciplinarnih postdiplomskih nastavnih planova u oblasti menadžmenta inovacija na osnovu najbolje prakse iz postojećih studijskih programa EU, a u skladu sa zahtevima Bolonjske deklaracije. Specifični ciljevi su: 1. Da se razvije i primeni interdisciplinarni doktorski program iz menadžmenta inovacija, kao zajednički program na četiri srpska univerziteta 2. Da se ravije i sprovede interdisciplinarni master program u upravljanju inovacijama, kao zajednički zajednički program na četiri srpska univerziteta 3. Da se razvije i sprovede niz kurseva i obuka u menadžmentu inovacija za industriju kako bi se omogućio razvoj karijere i povećanje zapošljivosti.
Trajanje projekta:
3 godine 12.2013 – 12.2016.
Institucije učesnici / partneri:
University of Novi Sad, University of Nis, University of Kragujevac, Singidunum University, Technical College of Applied Sciences in Zrenjanin, Business incubator Novi Sad, Business innovation centre LLC Kragujevac, Innovation Fund, Creative Educational Center, The Intellectual Property Office of the Republic of Serbia, Freie Universität Berlin, Aristotle University of Thessaloniki (URENIO Research Unit), University of Maribor, South East European Research Centre, World University Service - Austrian Committee
Učesnici – istraživači sa FTN:
Doc. Dr Željko Tekić, Prof. Dr Anišić Zoran, Doc. Bojan Lalić, Doc. Jelena Borocki, Prof. Dr Dragan Kukolj, Prof. Dr Ilija Kovačević, Anja Orčik
Oprema nabavljena iz projektnih sredstava:
30 pcs of LEGO Mindstorm educational kits; Idea management and mind mapping software - brainstorming, creative problem solving; Patent data mining software Innovation, Industrial Property, Patents Monitoring, R&D Phaser 6600/WorkCentre 6605, High Capacity Cyan, Magenta, Yellow and Black Toner Cartridge ; Color multifunction printer - Xerox work centre 6605;Tablet 10 " Samsung Galaxy Tab 2 (1pc.); Smart board with projector SMART580 + NEC VT460K (SVGA) (2 pcs); PC HP Pro AIO 3520 B5G05EA; Laptop - Intel Core i5-3210M 2.5GHz; Server Dell PowerEdge R520 XeonE5-2407; Idea management and mind mapping software - brainstorming, creative problem solving

Tempus project – Title:
MASTERING INNOVATION IN SERBIA THROUGH DEVELOPMENT AND IMPLEMENTATION OF INTERDISCIPLINARY POST-GRADUATE CURRICULA IN INNOVATION MANAGEMENT
Project code / acronym:
544278-TEMPUS-1-2013-1-RS-TEMPUS-JPCR
Web site:
www.main.uns.ac.rs
Grantholder:
Doc.dr Zeljko Tekic, University of Novi Sad
Coordinator from the Faculty of Technical Sciences:
Doc.dr Zeljko Tekic
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Development and modernisation of curriculum
Project Summary:
The general objective of the project is to foster Serbian innovative capacity by modernizing Serbian HE system and providing sustainable source of high-quality human resources. The project will achieve this by developing and realizing interdisciplinary postgraduate curricula in the field of innovation management based on best practice from existing EU study programs and according to the Bologna requirements at Serbian HE. The specific objectives are: 1. To develop and implement interdisciplinary PhD program in innovation management as a joint degree of 4 Serbian universities, 2. To develop and implement interdisciplinary master program in innovation management as a joint degree of 4 Serbian universities, 3. To develop and implement certified innovation management courses for industry professionals to enable career development and increase employability. These objectives should be achieved through synergetic partnership of 3 Serbian public and 1 private university, 1 college of applied sciences, 6 organizations representing key Serbian stakeholders, 4 well known EU universities and 2 non-academic EU partners with extensive experience in dealing with innovation and curriculum development.
Duration of the project:
3 years 12.2013 – 12.2016.
Partners:
University of Novi Sad, University of Nis, University of Kragujevac, Singidunum University, Technical College of Applied Sciences in Zrenjanin, Business incubator Novi Sad, Business innovation centre LLC Kragujevac, Innovation Fund, Creative Educational Center, The Intellectual Property Office of the Republic of Serbia, Freie Universität Berlin, Aristotle University of Thessaloniki (URENIO Research Unit), University of Maribor, South East European Research Centre, World University Service - Austrian Committee
Researchers from the FTS:
Doc. Dr Željko Tekić, Prof. Dr Anišić Zoran, Doc. Bojan Lalić, Doc. Jelena Borocki, Prof. Dr Dragan Kukolj, Prof. Dr Ilija Kovačević, Anja Orčik
Equipment purchased from the project funds:
30 pcs of LEGO Mindstorm educational kits; Idea management and mind mapping software - brainstorming, creative problem solving; Patent data mining software Innovation, Industrial Property, Patents Monitoring, R&D Phaser 6600/WorkCentre 6605, High Capacity Cyan, Magenta, Yellow and Black Toner Cartridge ; Color multifunction printer - Xerox work centre 6605;Tablet 10 " Samsung Galaxy Tab 2 (1pc.); Smart board with projector SMART580 + NEC VT460K (SVGA) (2 pcs); PC HP Pro AIO 3520 B5G05EA; Laptop - Intel Core i5-3210M 2.5GHz; Server Dell PowerEdge R520 XeonE5-2407; Idea management and mind mapping software - brainstorming, creative problem solving

TEMPUS projekat– naziv:
IDEA LAB **FOSTERING STUDENTS' ENTREPRENEURSHIP AND OPEN INNOVATION IN UNIVERSITY – INDUSTRY COLLABORATION**
Oznaka projekta / akronim:
544373-TEMPUS-1-2013-1-RS-TEMPUS-JPHES
Web:
www.idealab.uns.ac.rs
Rukovodilac projekta:
Vladimir Todorović, Univerzitet u Novom Sadu
Rukovodilac projekta sa FTN:
Vladimir Todorović
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Razvoj partnerstva sa kompanijama i jačanje trougla znanja/Obrazovanje-istraživanje-inovacije
Opis projekta:
iDEA lab će predstavljati kreativni prostor opremljen neophodnim resursima (hardverom i softverom) i nudiće studentima i mladim istraživačima programe obuke za preduzetništvo, mogućnost umrežavanja i povezivanja sa kolegama komplemantarnih znanja i interesovanja, mentorsko vođenje od strane iskusnih preduzetnika i predstavljanje ideja potencijalnim investitorima. iDEA lab je zamišljena kao inkubator u kome će se generisati, pod mentorstvom razvijati i pripremati za komercijalizaciju ideja mladih ljudi (studenata, diplomiranih i onih koji se još uvek školuju) u srcu Univerziteta. Studenti će imati mogućnost da svoj kreativni potencijal iskažu pokretanjem potpuno novog biznisa (start-up) ili da u saradnji sa kompanijama zainteresovanim za njihove ideje rade na inoviranju postojećih proizvoda i usluga (otvorene inovacije). iDEA lab će pružati mogućnost promocije svih podsticajnih programa (EU, Republika, APV, Grad) za pokretanje sopstvernog poslovanja i samozapošljavanje.
Trajanje projekta:
3 godine 12.2013 – 12.2016.
Institucije učesnici / partneri:
University of Novi Sad, University of Stuttgart, University of Sheffield, College Nikola ZRINSKI Zagreb, SFC, Consulting, Eleven OOD, WUS,University of Zenica, Business Center Bar, University of Donja Gorica, University of Banja Luka, UPC University Entrepreneurship center Banja Luka, EESTEC Banja Luka, EESTEC Novi Sad, Vojvodina ICT cluster Novi Sad, Creative Educational Center Novi Sad, VTSSZR Zrenjanin, VTSSSU Subotica, SEEICT, Business Incubator Novi Sad
Učesnici – istraživači sa FTN:
Vladimir Todorović, Željko Tekić, Petar vrgović, Anja Orčik, Ilija Ćosić
Oprema nabavljena iz projektnih sredstava:
Camera - Sony NEXVG30EH Full HD; Video editing software - Vegas Pro 12; 3D printer - 3DTouch™ Education Pack; Smart board with projector SMART580 + NEC VT460K (SVGA) (2 pcs); PC HP Pro AIO 3520 B5G05EA, Intel Core i3-3220 with Intel HD Graphics 2500 (3.30 GHz, 3 MB cache, 2 cores) Windows 8 64 4 GB 1600 MHz DDR3 SDRAM 500 GB 7200 rpm SATA Slim SATA SuperMulti DVD writer 50,8 cm (20") diagonal TN widescreen WLED backlit LCD (24pcs.); WiFi - CISCO AIRONET 3501I - RADIO ACCESS POINT; Laptop - Intel Core i5-3210M 2.5GHz (3M Cache, up to 3.10 GHz) 4GB DDR3 (1600MHz), 640GB, AMD Radeon HD 7650M 1GB (2pcs.); Server Dell PowerEdge R520 XeonE5-2407 8GB 2x2TB PERC H710/512MB DVDRW 1100W 2U 3y, Processor: Intel Xeon E5-2407 (2.20GHz, 10MB cache, 6.4gt/s QPI, 4 core); Idea management and mind mapping software - brainstorming, creative problem solving; HDD Recorder JVC SR-HD1500US Blu-ray Disc & HDD Recorder

Tempus project – Title:
IDEA LAB **FOSTERING STUDENTS' ENTREPRENEURSHIP AND OPEN INNOVATION IN UNIVERSITY – INDUSTRY COLLABORATION**
Project code / acronym:
544373-TEMPUS-1-2013-1-RS-TEMPUS-JPHES
Web site:
www.idealab.uns.ac.rs
Grantholder:
Vladimir Todorović, University of Novi Sad
Coordinator from the Faculty of Technical Sciences:
Vladimir Todorović
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Development of partnerships with enterprises and Knowledge triangle education-research-innovation
Project Summary:
The general objective of the project is to advance employment and self-employment potential of graduates from WBC and enhance innovativeness of companies by fostering students' entrepreneurship, creation of business start-ups and open innovation approach in collaboration between universities and enterprises. The project will achieve this by developing a co-creative and supportive environment - **iDEA Lab** network which will encourage and foster students' entrepreneurial intent and at the same time support open innovation approach. Specific objectives are: • To set up, equip and network co-creative centres (iDEA labs) to support students to generate, develop and commercialize their own innovative ideas through entrepreneurship and/or open innovation • To foster student entrepreneurship and start-up creation at university settings by improving infrastructure, entrepreneurial culture and skills • To introduce and implement open innovation as a new form of partnership among key stakeholders in knowledge triangle in WBC • To revise and adapt curricula to include entrepreneurial skills and problem-based learning
Duration of the project:
3 years 12.2013 – 12.2016.
Partners:
University of Novi Sad, University of Stuttgart, University of Sheffield, College Nikola ZRINSKI Zagreb, SFC, Consulting, Eleven OOD, WUS,University of Zenica, Business Center Bar, University of Donja Gorica, University of Banja Luka, UPC University Entrepreneurship center Banja Luka, EESTEC Banja Luka, EESTEC Novi Sad, Vojvodina ICT cluster Novi Sad, Creative Educational Center Novi Sad, VTSSZR Zrenjanin, VTSSSU Subotica, SEEICT, Business Incubator Novi Sad
Researchers from the FTS:
Vladimir Todorović, Željko Tekić, Petar vrgović, Anja Orčik, Ilija Ćosić
Equipment purchased from the project funds:
Camera - Sony NEXVG30EH Full HD; Video editing software - Vegas Pro 12; 3D printer - 3DTouch™ Education Pack; Smart board with projector SMART580 + NEC VT460K (SVGA) (2 pcs); PC HP Pro AIO 3520 B5G05EA, Intel Core i3-3220 with Intel HD Graphics 2500 (3.30 GHz, 3 MB cache, 2 cores) Windows 8 64 4 GB 1600 MHz DDR3 SDRAM 500 GB 7200 rpm SATA Slim SATA SuperMulti DVD writer 50,8 cm (20") diagonal TN widescreen WLED backlit LCD (24pcs.); WiFi - CISCO AIRONET 3501I - RADIO ACCESS POINT; Laptop - Intel Core i5-3210M 2.5GHz (3M Cache, up to 3.10 GHz) 4GB DDR3 (1600MHz), 640GB, AMD Radeon HD 7650M 1GB (2pcs.); Server Dell PowerEdge R520 XeonE5-2407 8GB 2x2TB PERC H710/512MB DVDRW 1100W 2U 3y, Processor: Intel Xeon E5-2407 (2.20GHz, 10MB cache, 6.4gt/s QPI, 4 core); Idea management and mind mapping software - brainstorming, creative problem solving; HDD Recorder JVC SR-HD1500US Blu-ray Disc & HDD Recorder

TEMPUS projekat– naziv:

IZGRADNJA MREŽE UDALJENIH LABORATORIJA ZA JAČANJE SARADNJE UNIVERZITETA I SREDNJIH STRUČNIH ŠKOLA

Oznaka projekta / akronim:

NeReLa

Web:

http://www.nerela.kg.ac.rs/

Rukovodilac projekta:

Prof. dr Radojka Krneta, Univerzitet u Kragujevcu

Rukovodilac projekta sa FTN:

Prof. dr Dragan Šešlija

Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):

primenjena / razvojna

Opis projekta:

Ovaj projekat ima za cilj da unapredi inženjerske studije u Srbiji uvođenjem inovacija u nastavu inženjerstva primenom daljinskih eksperimenata i da ojača saradnju univerziteta i srednjih stručnih škola kroz obuke nastavnika srednjih stručnih škola za primenu daljinskih eksperimenata u nastavi i time podigne atraktivnost i interesovanje za upis na inženjerske studije kod učenika srednjih stručnih škola u Srbiji. Daljinski eksperimenti iz oblasti elektrotehnike, računarstva i mehatronike, kao najprominentnijih inženjerskih disciplina, biće razvijeni u okviru projekta i postavljeni u fakultetskim laboratorijama za korišćenje od strane udaljenih korisnika – studenata i njihovih nastavnika, nastavnika srednjih stručnih škola i njihovih učenika.

Zacrtani cilj podizanja atraktivnosti studija inženjerstva u Srbiji ostvarivaće se, kako je to projektom predviđeno, kroz realizaciju tri specifična cilja:

- uspostavljanje međuuniverzitetske mreže udaljenih inženjerskih laboratorija u cilju unapređenja inženjerskog obrazovanja na visokoškolskim institucijama u Srbiji;
- jačanje saradnje univerziteta i srednjih stručnih škola kroz obuke nastavnika srednjih stručnih škola za primenu u nastavi eksperimenata koji se izvode na daljinu;
- korišćenje eksperimenata koji se izvode na daljinu u učionicama srednjih stručnih škola u cilju promovisanja atraktivnosti inženjerskog obrazovanja među budućim potencijalnim studentima tehnike.

Mreža udaljenih laboratorija pod nazivom NeReLa povezivaće inženjerske laboratorije sa četiri najveća univerziteta u Srbiji - sa Univerziteta u Beogradu, Univerziteta u Kragujevcu, Univerziteta u Nišu i Univerziteta u Novom Sadu. U laboratorijama tih univerziteta studentima i nastavnicima, ali i nastavnicima srednjih stručnih škola i njihovim učenicima, biće na raspolaganju čitav niz laboratorijskih eksperimenata iz oblasti elektrotehnike, računarske tehnike i mehatronike, kojima će moći da pristupaju preko interneta.

Trajanje projekta:

Decembar 2013. - Novembar 2016.

Institucije učesnici / partneri:

Univerzitet u Kragujevcu, Univerzitet u Beogradu, Univerzitet u Nišu, Univerzitet u Novom Sadu, University of Deusto, European University Cyprus, University of Maribor, University of Porto, Network of Regional centers for vocational schools teacher professional development, Assosiation of Serbian Secondary Schools of Electrical Engineering, Association of Mechanical Vocational Secondary Schools, Best Cybernetics, and Balkan Distance Education Network

Učesnici – istraživači sa FTN:

Dragan Šeslija, Milutin Nikolić, Ivana Milenković, Jovan Šulc, Bojan Lalić, Predrag Vidicki, Mirko Raković, Slobodan Dudić, Stevan Stankovski, Branislav Borovac, Laslo Nađ

Oprema nabavljena iz projektnih sredstava:

Manometar, Kontroler za kružni manipulator sa 24dig, Analogna merna letva, Prigušivač zvuka, PC INTERFACE [616 - 1] - ABB Robot, Daljinski upravljan regulator pritiska, IP kamera, Desktop računar All in one

Tempus project – Title:
BUILDING NETWORK OF REMOTE LABS FOR STRENGTHENING UNIVERSITY SECONDARY VOCATIONAL SCHOOLS COLLABORATION
Project code / acronym:
NeReLa
Web site:
http://www.nerela.kg.ac.rs/
Grantholder:
Prof. Dr Radojka Krneta, University of Kragujevac
Coordinator from the Faculty of Technical Sciences:
Prof. Dr Dragan Šešlija
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Applied / Development
Project Summary:
The wider objective of this project is to increase attractiveness of engineering education through innovative teaching methods as well as through the strengthening of university- secondary vocational schools collaboration. The strengthening of the collaboration between universities and secondary vocational schools will be achieved through the training of the teachers of electrotechnical secondary vocational schools and mechanical secondary vocational schools. The training will regard using remote experiments in teaching electrical and computer engineering as well as mechatronics. Specific objectives, within the aforementioned wider one, include: - To build cross-universities network of remote engineering laboratories in order to enhance engineering education at Serbian HE institutions - To strengthen university-secondary vocational schools collaboration through secondary vocational schools teacher training in using resources of The Library of Remote Experiments - To bring remote engineering experiments into secondary vocational school classrooms in order to promote engineering education attractiveness to prospective engineering students The expected outputs and outcomes include: - Conducted analysis of the state-of-the-art remote labs networks at EU universities - Conducted analysis of remote experiments at partner universities - Created Guidelines for techno-pedagogical requirements for the remote labs - Builded infrastructure for remote experimentation at partner universities - Signed agreement on networking of remote engineering laboratories from partner universities - Designed The LiReX library of remote experiments - Developed a set of new remote engineering experiments at partner universities - Approx. 180 secondary vocational schools teachers trained in using of remote experiments - Approx. 25 new learning modules with remote experiments integrated into the curricula of networked partner universities and of selected secondary vocational schools - Number of agreements on the right of use of LiReX resources and ownership signed by teachers from HE and secondary vocational schools during and after project lifecycle - Annual Conference on Remote Experimentation established - The NeReLa included into EU networks
Duration of the project:
December 2013. – November 2016.
Partners:
University of Kragujevac, University of Belgrade, University of Nis, University of Novi Sad, University of Deusto, European University Cyprus, University of Maribor, University of Porto, Network of Regional centers for vocational schools teacher professional development, Assosiation of Serbian Secondary Schools of Electrical Engineering, Association of Mechanical Vocational Secondary Schools, Best Cybernetics, and Balkan Distance Education Network
Researchers from the FTS:
Dragan Šeslija, Milutin Nikolić, Ivana Milenković, Jovan Šulc, Bojan Lalić, Predrag Vidicki, Mirko Raković, Slobodan Dudić, Stevan Stankovski, Branislav Borovac, Laslo Nađ
Equipment purchased from the project funds:
Manometer, Modular electrical terminal CPX, Displacement encoders, Silencers, PC INTERFACE [616 - 1] - ABB Robot, Pressure regulators, IP kamera, Computer All in one

Međunarodni projekti

IPA prekogranična saradnja

International projects

IPA cross border cooperation

IPA – Projekat:
MERENJE, PRAĆENJE, UPRAVLJANJE I PROCENA RIZIKA UNUTRAŠNJEG VIŠKA VODE U JUGOISTOČNOJ MAĐARSKOJ I SEVERNE SRBIJE (KORISTI DALJINSKI MERENE PODATAKE I INFRASTRUKTURE PROSTORNIH PODATAKA)
Oznaka projekta / akronim:
HUSRB/1002/121/088, MERIEXWA
Web:
Rukovodilac projekta:
Doc. dr József Szatmári, Departman Fizičke Geografije i Geoinformatike, Segedin
Rukovodilac projekta sa FTN:
Prof. dr Miloš Živanov
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Integralna interdisciplinarna istraživanja
Opis projekta:
Višak unutrašnjih voda je ozbiljan rizik i predstavlja savremeni problem u Srbiji i u Mađarskoj, posebno u Kongrad okrugu u Mađarskoj a u Srbiji u severnom delu na području Vojvodine. Projekat ima za cilj da pronađe odgovore na četiri međusobno povezana pitanja sa fundamentalnim i primenjenim istraživanjima u oblastima Marosszog-u i Banatu u periodu od 24 meseca. Prvi postavljeni cilj je da se ispitaju zone zemljišta različitih tipova unutrašnjih viškova voda. Merenje nivoa podzemnih voda je realizovano koristeći elektronski sistem sa akustičnim senzorima. Želimo da se pronađu i testiraju nove metodologije za mapiranje plavljenih polja, što uključuje kontrolu daljinski registrovanih podataka merenja iz mernih bunara u cilju njihove upotrebe radi zaštite od viškova podzemnih voda. Planiran je razvoj sistema zasnovan na praćenju podzemnih voda daljinskim prenosom pdataka kojim bi se omogućilo upravljanje unutrašnjim viškovima vode.
Trajanje projekta:
2012. – 2014.
Institucije učesnici / partneri:
Univerzitet u Segedinu / SZTE, Departman Fizičkel Geografije i Geoinformatike, Segedin, Univerzitet u Novom Sadu, Prirodno matemeatički fakultet, Center for Spatial Information of Vojvodina Province-CSIVP, Fakultet tehničkih nauka u Novom Sadu, Katedra za elektroniku, FTN.
Učesnici –istraživači sa FTN:
Miloš Živanov, Miloš Slankamenac, Đorđe Obradović, Viktor Dogan, Miodrag Brkić
Oprema nabavljena iz projektnih sredstava:
Osciloskop i GSM alati - neophodni za testiranje na terenu, evidentiranje i praćenje podataka i podešavanje opreme. Specifikacije: TDS2022 Digitalni osciloskop, HMF2550 Funkciski generator

IPA Project – Title:

MEASUREMENT, MONITORING, MANAGEMENT AND RISK ASSESSMENT OF INLAND EXCESS WATER IN SOUTH-EAST HUNGARY AND NORTH SERBIA (USING REMOTELY SENSED DATA AND SPATIAL DATA INFRASTRUCTURE)

Project code / acronym:

HUSRB/1002/121/088, MERIEXWA

Web site:

Grantholder:

Assistant professor Dr. József Szatmári, assistant professorDepartment of Physical Geography and Geoinformatics, University of Szeged

Coordinator FTS:

Prof. Dr. Miloš Živanov

Scientific Research Fields / Type of research (Fundamental / Applied / Development):

Integral Interdisciplinary Research

Summary:

Inland excess water is a serious hazard and represents a contemporary problem in Hungary, particularly in Csongrád County and in Serbia, especially in its northern part, the Autonomous Province of Vojvodina. The project aims to find answers to four interrelated questions with the means of both fundamental and applied research in the Marosszög and Banat areas during the 24 month time period. First, we are intended to examine the formation of the different types of inland excess waters. We are going to monitor the conditions of groundwater seepage using a monitoring well system with acoustic sensors. We would like to find and test a novel methodology for the field mapping of inundations, which includes the verification by remotely sensed data of the test sites, in order to evaluate their use in excess water protection works. We plan to develop an internet based monitoring system, which can support the management of inland excess water.

Duration:

2012-2014

Partners:

Szegedi Tudományegyetem, University of Szeged, SZTE, University of Novi Sad, Faculty of Science, Center for Spatial Information of Vojvodina Province-CSIVP, Faculty of Technical Sciences in Novi Sad, FTS, Chair of Electronics

Researchers from the FTS:

Miloš Živanov, Miloš Slankamenac, Đorđe Obradović, Viktor Dogan, Miodrag Brkić

Equipment purchased from project funds:

Oscilloscope and GSM tools - Necessary for on field testing, logging and monitoring of data and setup of equipment. Specifications: TDS2022 Digital oscilloscope, HMF2550 Function Generator

IPA Projekat – naziv:
ORTOFLEX – FLEKSIBILNI SUSTAV ZA IZRADU INDIVIDUALNIH ORTOZA KRALJEŽNICE
Oznaka projekta / akronim:
OrtoFLEX
Web:
http://ortoflex.sfsb.hr/
Rukovodilac projekta:
Prof. dr Pero Raos, Strojarski fakultet u Slavonskom Brodu, Hrvatska
Rukovodilac projekta sa FTN:
Doc. dr Igor Budak
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Primenjena i razvojna
Opis projekta:
Projektom je obuhvaćeno istraživanje parametara optimizacije individualnih ortopedskih proteza, definisanje postupka izrade pred-oblika ortopedskih proteza, razvoj i testiranje specijalozovanjih softvera za digitalizaciju područja kičmenog stuba, razvoj i testiranje ekspertskog softvera za modeliranje individualnih ortopedskih proteza, razvoj i testiranje softvera za numeričko upravljanje mašinama alatkama za izradu ortopedskih proteza, razvoj i testiranje prototipa mašine alatke za direktnu izradu individualnih ortopedskih proteza kičmenog stuba.
Trajanje projekta:
2013 - 2015
Institucije učesnici / partneri:
Strojarski fakultet, Slavonski Brod, Hrvatska; Medicinski fakultet, Osijek, Hrvatska; Fakultet strojarstva i brodogradnje, Zagreb, Hrvatska; Industrijski park, Nova Gradiška, Hrvatska; Griz Grozd Plasttehnika, Slovenija; Fakultet tehničkih nauka, Novi Sad, Srbija; Tehnološki fakultet, Zlin, Češka; Fakultet proizvodnih tehnologija, Prešov, Slovačka.
Učesnici – istraživači sa FTN:
Igor Budak, Đorđe Vukelić
Oprema nabavljena iz projektnih sredstava:
-

IPA project – Title:
ORTOFLEX - FLEXIBLE MANUFACTURING OF CUSTOMIZED SPINAL ORTHOSES
Project code / acronym:
OrtoFLEX
Web site:
http://ortoflex.sfsb.hr/
Grantholder:
Prof. Dr. Sc. Pero Raos, Mechanical Engineering Faculty in Slavonski Brod
Coordinator from the Faculty of Technical Sciences:
Assist. Prof. Dr. Sc. Igor Budak
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Applied and development
Project Summary:
Project comprises designing and testing of specialized software solution for 3D digitization of spinal region, designing and testing of the expert software for custom orthosis modeling, designing and testing of software for numerical control of the machine tool, designing and testing of machine tool prototype for direct manufacturing of customized spinal orthoses, development and testing of machine tool's prototype for direct manufacturing of customized spinal orthoses.
Duration of the project:
2013-2015
Partners:
Mechanical Engineering Faculty, Slavonski Brod, Croatia; Faculty of Medicine, Osijek, Croatia; Faculty of Mechanical Engineering and Naval Architecture, Zagreb, Croatia; Industrial Park, Nova Gradiska, Croatia; Griz Grozd Plasttehnika, Slovenia; Faculty of Technical Sciences, Novi Sad, Serbia; Faculty of Technology, Zlin, Czech; Faculty of Manufacturing Technologies, Presov, Slovakia.
Researchers from the FTS:
Igor Budak, Djordje Vukelic
Equipment purchased from the project funds:
-

IPA Projekat – naziv:
CENTER OF EXCELLENCE FOR ADVANCED AND INTELLIGENT CONTROL (IPA)
Oznaka projekta / akronim:
CEFAIC
Web:
http://www.ipacefaic.com/index.php?lang=sr
Rukovodilac projekta:
Prof.dr Zoran Jeličić
Rukovodilac projekta sa FTN:
Prof.dr Zoran Jeličić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Automatika i upravljanje/razvojna
Opis projekta:
Cilj projekta je da se treniraju i obrazuju student i inžinjeri u industriji kako da implementiraju moderne upravljačke strategije da bi poboljšali energetsku efikasnost u raznim sferma života, od industrije pa sve do svojih domova. U periodu od 21 meseca Centar izvrsnosti za napredno i inteligentno upravljanje će biti ustanovljen. Njegova osnovna svrha je obezbeđivanje kako adekvatne opreme za treninge I edukaciju, tako I adekvatnog nastavnog osoblja kroz zajedničku saradnju 2 partnera I razmenu znanja. Ovaj centar će činiti dve fizički odvojene laboratorije koje će sinhronizovano sarađivati. Jedna laboratorija je u Novom Sadu, a druga u Segedinu. Zajednički razvoj i implementacija upravljačkih strategija, zajedničko finansiranje za nabavku opreme i troškove osoblja, kao I razmene studenata će biti obezbeđene. Takođe, programi MSc, BSc I PhD kurseva će biti zajednički razvijeni. Bilingvizam će biti podržan kroz izradu nastavnih materijala na oba jezika projektnih partnera. Ceo projekat će biti ispraćen kroz razne medijska dešavanja, kao I putem internet portal.
Trajanje projekta:
21 mesec (15.01.2013. – 14.10.2014.)
Institucije učesnici / partneri:
Fakultet tehničkih nauka, Novi Sad Univerzitet u Segedinu, Segedin, Madjarska
Učesnici – istraživači sa FTN:
prof. Zoran Jeličić, prof. Filip Kulić, Boris Jakovljević, Imre Lendak, Phd, prof. Milan Rapaić, Željko Kanović, Miloš Jovanović, Mirna Kapetina
Oprema nabavljena iz projektnih sredstava:
13 PLC-a (12 S7-1200, 1 S7-1500), 2 programibilna automatska kontrolera sa odgovarajućim modulima (NI cRIO9024), 1 set za kućnu automatiku (kontroleri, senzori...), 4 Lego Mindstorm robota, 3D kran, Modularni servo, 1 simulacijski set za simulaciju 10-ak tehnoloških procesa, 1 kvadkopter, kancelarjiski namestaj (4 stolice, 3 ormana, 1 fiokar)

IPA project – Title:
CENTER OF EXCELLENCE FOR ADVANCED AND INTELLIGENT CONTROL (IPA)
Project code / acronym:
CEFAIC
Web site:
http://www.ipacefaic.com/index.php?lang=sr
Grantholder:
Prof. Dr Zoran Jeličić
Coordinator from the Faculty of Technical Sciences:
Prof. Dr Zoran Jeličić
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Automation and systems control/development
Project Summary:
The purpose of this project is to train and educate both students and engineers in industry how to use and implement modern control strategies in order to improve energy efficiency in different aspects of life, from industry to their own homes. Therefore, during 21 months, the Center of Excellence for Advanced and Intelligent Control would be established as an official premise for such training and education. Its purpose is to provide appropriate equipment for trainings and education, as well as to provide adequate teaching staff throughout mutual cooperation between 2 partners and knowledge interchange. This center would consist of two physically separated laboratories which would cooperate synchronously. One laboratory would be situated in Novi Sad and the other one in Szeged. Joint development and implementation of control strategies as well as joint financing will be provided for both equipment and staff purposes. Funding for staff exchange (joint staffing) for implementing the control algorithms, as well as student exchange for the purpose of transferring technical knowhow from one partner to the other is also provided. Joint MSc, BSc and PhD courses are developed together with one specialist studies program accredited. Bilingualism is supported throughout the entire project through development of teaching material in both languages of the project partners. The entire project will be covered by different media forms as well as throughout web sites of the project.
Duration of the project:
21 months(15.01.2013. – 14.10.2014.)
Partners:
Faculty of Technical Sciences, Novi Sad University of Szeged, Szeged, Hungary
Researchers from the FTS:
prof. Zoran Jeličić, prof. Filip Kulić, Boris Jakovljević, Imre Lendak, Phd, prof. Milan Rapaić, Željko Kanović, Miloš Jovanović, Mirna Kapetina
Equipment purchased from the project funds:
13 PLC-a (12 S7-1200, 1 S7-1500), 2 programmable automation controllers with adequate modules (NI cRIO9024), 1 home automation set (controllers, senzors...), 4 Lego Mindstorm robots, 3D crane, Modular servo, 1 simulation set for simulating around 5 technological processes, 1 quadcopter, office furniture (4 chairs, 3 regular cabinets, 1 drawer cabinet)

IPA Projekat – naziv:
“NEOSTATAK VODE I ADAPTIVNE STRATEGIJE UPRAVLJANJA VODAMA U POGRANIČNOM REGIONU MAĐARSKA – SRBIJA”
Oznaka projekta / akronim:
WAHASTRAT
Web:
http://wahastrat.vizugy.hu/
Rukovodilac projekta:
Univerzitet u Segedinu - Departman za fizičku geografiju i geoinformatiku
Rukovodilac projekta sa FTN:
Prof. dr Vladimir Crnojević
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Primenjena istraživanja
Opis projekta:
Stručnjaci Univerziteta u Segedinu, Univerziteta u Novom Sadu i Direkcije za vodu regije Donja Tisa sproveli su složeno istraživanje sa ciljem analiziranja mogućnosti za ublažavanje problema suše i razvoja održivog upravljanja vodotokova unutar mađarsko - srpske međugranične regije. Kao rezultat ovog projekta razvijen je sistem za praćenje životne sredine, procenjeni su ekološki i socijalni uticaji nedostatka vode, i konačno, predloženi su planovi i preporuke koji bi podržali održivi razvoj u regionu.
Trajanje projekta:
01.02.2013. – 31.07.2014.
Institucije učesnici / partneri:
Univerzitet u Segedinu - Departman za fizičku geografiju i geoinformatiku Univerzitet u Novom Sadu - Prirodno matematički fakultet Univerzitet u Novom Sadu - Fakultet tehničkih nauka Direkcija za vodu regije Donja Tisa (ATI-VIZIG)
Učesnici – istraživači sa FTN:
Prof. dr Vladimir Crnojević, doc. dr Đorđe Ćosić, M.Sc. Ljiljana Popović, prof. dr Vesna Crnojević Bengin, doc. dr Srđan Popov, mr Ana Frank, M.Sc. Đorđe Obradović, doc. dr Vasa Radonjić, doc. dr Dejan Vukobratović.
Oprema nabavljena iz projektnih sredstava:
Mreža stanica za daljinsko praćenje suše (8 meteo stanica) i server za skladištenje i procesuiranje pristiglih podataka

IPA project – Title:
"WATER SHORTAGE HAZARD AND ADAPTIVE WATER MANAGEMENT STRATEGIES IN THE HUNGARIAN-SERBIAN CROSS-BORDER REGION"
Project code / acronym:
WAHASTRAT
Web site:
http://wahastrat.vizugy.hu/
Grantholder:
University of Szeged – Department of Physical Geography and Geoinformatics
Coordinator from the Faculty of Technical Sciences:
Prof. PhD Vladimir Crnojević
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Applied
Project Summary:
The experts of University of Szeged, University of Novi Sad and Lower Tisza District Water Directorate achieve a complex research to analyze possibilities in mitigation of drought problem and development of sustainable and adaptive water management in the Hungarian-Serbian cross-border region. As a result of this project environmental monitoring systems were developed, environmental and social impacts were assessed and finally plans and recommendations were outlined to support the realization of the sustainable development in the region.
Duration of the project:
01.02.2013. – 31.07.2014.
Partners:
University of Szeged – Department of Physical Geography and Geoinformatics University of Novi Sad – Faculty of Sciences University of Novi Sad – Faculty of Technical Sciences Lower Tisza District Water Directorate (ATI-VIZIG)
Researchers from the FTS:
Prof. PhD Vladimir Crnojević, doc. PhD Đorđe Ćosić, M.Sc. Ljiljana Popović, prof. PhD Vesna Crnojević Bengin, doc. PhD Srđan Popov, M.Sc. Ana Frank, M.Sc. Đorđe Obradović, doc. PhD Vasa Radonjić, doc. PhD Dejan Vukobratović.
Equipment purchased from the project funds:
Wireles sensor network for remote drought monitoring (8 measurement stations) and server for data warehousing and processing.

IPA projekat - naziv:
JOINT DEVELOPMENT OF CURRICULA AND TEACHING MATERIALS OF MECHANICAL ENGINEER ON MSC. LEVEL
Oznaka projekta / akronim:
DEVMECUR
Web:
www.devmecur.com
Rukovodilac projekta:
Prof. Dr Vojin Grković, Fakultet tehničkih nauka, Srbija
Rukovodilac projekta sa FTN:
Prof. Dr Vojin Grković
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Razvojna
Opis projekta:
Zajednički razvijeni studijski programi koji imaju potencijal da značajno doprinesu ukupnom razvoju ljudskog kapitala u regionu. Da bi se brzo odgovorilo na proment u tehnološkom razvoju, visokoškolske institucije u inženjerskoj struci moraju da usklade svoje obrazovne programe i istraživački rad sa najnovijim kretanjima i inovacijama u oblasti interesa. Moderno, a ipak odgovarajuće obrazovanje je od ključnog značaja za budući razvoj zemalja. Industrijski razvoj regiona sa obe strane granice je uslovljen izgradnjom ljudskog kapitala, i rezultat je rada visokoškolskih institucija. Dve partnerske organizacije su blisko sarađivale u razvoju, akreditaciji i reakreditaciji, kao i realizaciji njihovih specifičnih studijskih programa mašinske struke. Osim toga , partneri su radili na povećanju institucionalnih kapaciteta za sprovođenje visoko kvalitetnih inženjerskih studija, podizanja izvrsnosti obrazovanja i praktične obuke, kao i promovisanje najboljih praksi za razvoj nastavnih planova i institucionalnom umrežavanju .
Trajanje projekta:
Januar 2013. – Jun 2014.
Institucije učesnici / partneri:
Univerzitet u Segedinu, Mašinski fakultet
Učesnici – istraživači sa FTN:
Prof. Dr Vojin Grković Prof. Dr Dušan Gvozdenac Prof. Dr Ilija Kovačević Prof. Dr Maša Bukurov Prof. Dr Gordan Dragutinović Doc. Dr Branka Gvozdenac Urošević Doc. Dr Momčilo Spasojević Doc. Dr Damir Đaković Doc dr. Marija Vićević Doc. Biljana Miljković Doc. Dr Dunja Sokolović Vladimir Todorović
Oprema nabavljena iz projektnih sredstava:
Kalorimetar

IPA project - title:
JOINT DEVELOPMENT OF CURRICULA AND TEACHING MATERIALS OF MECHANICAL ENGINEER ON MSC. LEVEL
Project code / acronym:
DEVMECUR
Web site:
www.devmecur.com
Grantholder:
Prof. Dr Vojin Grković, Faculty of Technical Sciences, Serbia
Coordinator from the Faculty of Technical Sciences:
Prof. Dr Vojin Grković
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Development
Project Summary:
Jointly developed study programmes that have a potential to significantly contribute to the overall human capital development of the region. In order to quickly respond to rapid technological developments, HE Institutions in the engineering profession have to harmonise both their education programmes and research work with the newest developments and innovations in the field. Modern, yet appropriate education is crucial for countries' future development. The industrial development of the region on both sides of the border is preconditioned by the human capital building, and thus by the result of their higher education institutions work. Two partner organisations closely cooperated in development, accreditation and reaccreditation, as well as implementation of their specific mechanical engineering programmes. Furthermore, partners worked towards increasing their institutional capacity for the conduction of a high quality engineering study, raising the excellence of educational and training practices, and promoting best practices for curriculum development and institutional networking.
Duration of the project:
January 2013. – June 2014.
Partners:
University of Szeged, Faculty of Mechanical Engineering
Researchers from the FTS:
Prof. Dr Vojin Grković Prof. Dr Dušan Gvozdenac Prof. Dr Ilija Kovačević Prof. Dr Maša Bukurov Prof. Dr Gordan Dragutinović Doc. Dr Branka Gvozdenac Urošević Doc. Dr Momčilo Spasojević Doc. Dr Damir Đaković Doc dr. Marija Vićević Doc. Biljana Miljković Doc. Dr Dunja Sokolović Vladimir Todorović
Equipment purchased from the project funds:
Calorimeter

Međunarodni projekti

NATO SPS

International projects

NATO SPS

US EPA Projekat– naziv:
PILOT PROJEKAT ISKORIŠĆENJA METANA
Oznaka projekta / akronim:
XA - 83541501
Web:
http://www.izzs.uns.ac.rs/gmi
Rukovodilac projekta:
Doc. dr Goran Vujić
Rukovodilac projekta sa FTN:
Doc. dr Goran Vujić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvoja)
primenjena
Opis projekta:
U sitacijama malog protoka deponijskog gasa, isti se može iskoristiti za dobijanje toplotne energije putem infracrvenih grejača u zgradama u neposrednoj blizini deponije, za grejanje i struju za staklene baste i za dobijanje električne energije u malim staklarama, keramičkim radionicama i radionicama elemenata od metala. Cilj istraživačke grupe FTN-a u saradnji sa ekspertima iz inženjersko kompanije iz SAD je da demonstrira tehničku mogućnost iskorišćenja deponijskog gasa na određenoj komunalnoj deponiji u Srbiji i time otvori mogućnost za kompleksnije i efikasnije projekte transformacije deponijskog gasa u različite oblike energije u Srbiji i regionu.
Trajanje projekta:
2012-2014
Institucije učesnici / partneri:
Fakultet tehničkih nauka Novi Sad US EPA
Učesnici –istraživači sa FTN
Goran Vujić, Dejan Ubavin, Dušan Milovanović, Nikola Maoduš
Oprema nabavljena iz projektnih sredstava
-

US EPA Project – Title:
PILOT METHANE UTILIZATION PROJECT
Project code / acromin:
XA - 83541501
Web site:
http://www.izzs.uns.ac.rs/gmi
Grandholder
Professor Goran Vujić, PhD
Coordinator FTS:
Professor Goran Vujić, PhD
Scientific Research Fields / Type of research (Fundamental / Applied / Development)
Applied
Summary:
In situations with low gas extraction rates, LFG can be used to power infrared heaters in buildings close to the landfill, provide heat and power to local greenhouses, and power the energy intensive activities of a studio engaged in pottery, metalworking or glass-blowing. The aim of the research group at the Faculty of Technical Sciences in cooperation with the experts from US engineering company is to demonstrate the technical viability of landfill gas utilization at a selected municipal landfill in Serbia, and therefore open the opportunity for more complex and efficient LFGE projects in Serbia and the region.
Duration:
2012-2014
Partners:
Faculty of Technical Sciences, Novi Sad US EPA
Researchers *from the FTS:*
Goran Vujić, Dejan Ubavin, Dušan Milovanović, Nikola Maoduš
Equipment purchased from project funds:
-

Međunarodni projekti

Bilateralna saradnja

International projects

Bilateral cooperation

Projekat bilateralne saradnje – naziv:

STATISTIČKE OSOBINE NEURALNOG PONAŠANJA U MOŽDANOJ KORI ŽIVOTINJA PRI REŠAVANJU PROBLEMSKIH ZADATAKA

Oznaka projekta / akronim:

Web:

Rukovodilac projekta:

Prof. dr Dragana Bajić, Prof. dr László Négyessy

Rukovodilac projekta sa FTN:

Prof. dr Dragana Bajić

Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):

Osnovna

Opis projekta:

Cilj projekta je određovanje karakteristkika i regulišućih mehenizama neuralnih okidača budnih, slobodnih, makaki majmuna.

Percepcija aktivnosti kore velikog mozga zahteva merenja in situ. Da bi se iz merenja izvukli ispravni saključci, neophodno je primeniti odgovarajuću obradu signala i statističku karakterizaciju. Međutim, statističke osobine neurona nikada do kraja nisu potpuno i pažljivo ispitan. Umesto toga, koristi se jedan pretpostavljeni model – Poasonov model – i taj pretostavljeni model predstavlja osnovu praktično svih istraživačkih rezultata.

U ovom predlogu projekta postavlja se pitanje statističke i stohastičke regulative neuralnih okidača i njihov odnos prema mrežnoj strukturi.

Trajanje projekta:

2 godine + 1 godina produžetka sa mađarske strane

Institucije učesnici / partneri:

Fakultet tehničkih nauka, Univerzitet u Novom Sadu
Visoka tehnička škola, Subotica
Research Institute for Particle and Nuclear Physics of the Hungarian Academy of Sciences, Budapest
Peter Pazmany Catholic University - Semmelweis University, Budapest

Učesnici –istraživači sa FTN:

Dragana Bajić, Tatjana Lončar-Turukalo, Gorana Mijatović, Tamara Ćeranić, Đorđe Starčević, Nebojša Božanić

Oprema nabavljena iz projektnih sredstava:

Project Bilateral Cooperation – Title:

STATISTICAL CHARACTERIZATION OF NEURAL BEHAVIOR IN THE CEREBRAL CORTEX OF BEHAVING ANIMALS

Project code / acronym:

Web site:

Grantholder:

Prof. Dr. Dragana Bajić, Prof. Dr. László Négyessy

Coordinator FTS:

Prof. Dr. Dragana Bajić

Scientific Research Fields / Type of research (Fundamental / Applied / Development):

Fundamental

Summary:

The goal of project is to determine neural firing characteristics and regularities in awake, behaving macaque monkeys.

Perception of the cortical activity needs the measurement in situ. To establish the correct conclusions from the measurements, appropriate data processing and statistical characterization of neural firing is required. Nevertheless, the stochastic property of real neurons has never been completely and thoughtfully investigated. Instead, a single statistical model Poisson model is assumed, being a foundation of most of the existing research results.

This proposal addresses the question of statistical and stochastic regularities in neural firing and their relation to the network structure.

Duration:

2 years and 1year extension from Hungarian part

Partners:

Faculty of Technical Sciences, University of Novi Sad
Polytechnic Engineering College Subotica, Research Institute for Particle and Nuclear Physics of the Hungarian Academy of Sciences, Budapest, Peter Pazmany Catholic University - Semmelweis University, Budapest

Researchers from the FTS:

Dragana Bajić, Tatjana Lončar-Turukalo, Gorana Mijatović, Tamara Ćeranić, Đorđe Starčević, Nebojša Božanić

Equipment purchased from project funds:

Projekat bilateralne saradnje – naziv:

UŠTEDA ENERGIJE OBRADOM PRENOSA U BAN MREŽAMA

Oznaka projekta / akronim:

Web:

Rukovodilac projekta:

Dragana Bajic

Rukovodilac projekta sa FTN:

Dragana Bajic

Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):

Razvojna

Opis projekta:

Projekat je posvećen poboljšanju i razvoju mreža na živim organizmima (BAN).
Osnovni cilj je istražiti mogućnost poboljšanja energetske efikasnosti korišćenjem "praznine" između izvora signala sa tela i ulaska u opremu za prenos tog signala. Metode koje bi trebalo istražiti uključuju:

a) Rešenja orijentisana ka specifičnom korisniku (optimizacija prenosa u okruženju koje zahteva drugačija rešenja nego što su rešenja u uređajima opšte namene);
b) Prenos određenih parametara signala, umesto prenosa celog signala – što predstavlja takođe specifičnu aplikaciju;
c) Eliminaciju artefakata: već pre ulaza u komunikacioni kanal signal je već zagađen sa 3-5% grešaka (artefakata); njihov prenos je nepotreban i predstavlja traćenje energetskih resursa;
d) Kompresiju, za koji čak ni elementarni standardi ne postoje (učestanost odmeravanja - odabiranja);
e) Razvoj specifičnih antena, da se nose na samom telu ili na odeći;
f) Razvoj modela kanala na telu i van tela.

Ključno pitanje je da li obrada signala na samom njegovom izvoru troši manje od prenosa neobrađenog signala, budući da se oprema na telu napaja baterijom pa je stoga neophodna štednja. Postavljeni ciljevi takođe bi mogli do bolje spoznaje kompleksnih fenomena prenosa signala sa tela.
Takođe se očekuje i doprenos standardima, kao što je standard za učestanost odmeravanja.

Trajanje projekta:

Dve godine

Institucije učesnici / partneri:

Univerzitet u Novom Sadu, Fakultet tehničkih nauka, Katedra za telekomunikacije i obradu signala, Srbija
Institut Mihajlo Pupin, Beograd, Srbija
Instituto Superior Técnico, Technical University of Lisbon, Portugal

Učesnici – istraživači sa FTN:

Dragana Bajić
Tatjana Lončar-Turukalo
Nikola Đurić,
Tamara Ćeranić
Gorana Mijatović
Đorđe Starčević

Oprema nabavljena iz projektnih sredstava:

Bilateral Cooperation Project – Title:

PRE-TRANSMISSION ENERGY SAVINGS IN BODY AREA NETWORKS

Project code / acronym:

Web site:

Grantholder:

Dragana Bajić

Coordinator from the Faculty of Technical Sciences:

Dragana Bajić

Scientific Research Field / Type of research (Fundamental / Applied / Development):

Development

Project Summary:

The goal of this proposal is devoted to the field of Body Area Networks, in particular to their development improvement.

The basic aim is to explore the possibility of energy efficiency enhancement in BANs, by exploiting the gap between the body signal source and the input to the transmission equipment. Methods to be explored include

a) customized solutions (optimization of transmission in a particular, application-oriented environment that requires different solutions then in all-purpose devices);
b) selective features transmission instead of the recorded signal – a different aspect of customized solutions;
c) artefacts expurgation: prior to the communication channel, signal already contains 3-5% errors (artefacts); their unnecessary transmission causes energy waste;
d) compression, for which even elementary standards does not exist (sampling frequency);
e) development of specific antennas, to be worn on the body and in clothes;
f) development of channel models for on- and off-body communications.

The crucial question is whether the source processing consumes less than the transmission of the unprocessed data, since body circuitry is battery-operated and therefore subject to energy savings. These aims might also lead to the better insight of complex phenomena of body signal transmission. A contribution to the standards, such as a standard for sampling frequency is also expected.

Duration of the project:

Two years

Partners:

University Novi Sad, Department of communications and signal processing, Serbia
Mihajlo Pupin Institute, Belgrade, Serbia
Instituto Superior Técnico, Technical University of Lisbon, Portugal

Researchers from the FTS:

Dragana Bajić
Tatjana Lončar-Turukalo
Nikola Đurić,
Tamara Ćeranić
Gorana Mijatović
Đorđe Starčević

Equipment purchased from the project funds:

Projekat bilateralne saradnje – naziv:
RAZVOJ NANOKOMPOZITNIH I NANOSTRUKTURNIH PREVLAKA
Oznaka projekta / akronim:
-
Web:
-
Rukovodilac projekta:
Prof. dr Branko Škorić
Rukovodilac projekta sa FTN:
Prof. dr Branko Škorić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Inženjerstvo površina/razvojna
Opis projekta:
Osnovni cilj projekta je razvoj različitih tipova supertvrdih nanokompozitnih i nanostukturnih prevlaka primenom depozicije podržane jonskim snopom i plazma pojačanim visokopulsirajućim magnetronskim raspršivanjem. Da bi se formirala nanokompozitna prevlaka potrebno je koristiti visoke temperature u toku depozicije. Većina alatnih čelika gubi i menja svoje osobine pri zagrevanju na tako visoke temperature. Stoga, predlažemo primpremu nanokompozitnih prevlaka na sobnoj temperaturi primenom dodatnog jonskog bombardovanja koje obezbeđuje neophodnu energiju za segregaciju nanofaza u prevlaci. Variraće se hemijski sastav kako bi se postigao optimalni odnos osobina kao što su tvrdoća, žilavost, otpornost na habanje, postojanost na visokim temperaturama i druge osobine koje zahteva moderna industrija.
Trajanje projekta:
2013/2014.god.
Institucije učesnici / partneri:
Univerzitet Koimbra, Republika Portugal
Učesnici – istraživači sa FTN:
Prof. dr Branko Škorić Prof. dr Damir Kakaš Ist. saradnik Aleksandar Miletić
Oprema nabavljena iz projektnih sredstava:
-

Bilateral Cooperation Project – Title:
DEVELOPMENT OF NANOCOMPOSITE AND NANOSTRUCTURED COATINGS
Project code / acronym:
-
Web site:
-
Grantholder:
Prof. dr Branko Škorić
Coordinator from the Faculty of Technical Sciences:
Prof. dr Branko Škorić
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Surface engineering/development
Project Summary:
The main objective of the project is the development of different types of nanocomposite and nanostructured coatings by using ion beam deposition technique and by plasma sputtering technology.. We propose to prepare nanocomposite coatings at room temperature by using additional ion bombardment which provides necessary energy for phase segregation. Chemical composition of coatings will be varied in order to tailor their properties such as hardness, toughness, wear resistance, high temperature resistance and other properties needed in current harsh machining and manufacturing environment.
Duration of the project:
2013/2014.
Partners:
Universidade de Coimbra, Republic of Portugal
Researchers from the FTS:
Prof. dr Branko Škorić Prof. dr Damir Kakaš Ist. saradnik Aleksandar Miletić
Equipment purchased from the project funds:
-

Bilateral Cooperation Project – Title:
DYNAMICALLY AND AUTONOMOUSLY RECONFIGURABLE TYPES
Project code / acronym:
DART
Web site:
Grantholder:
Luca Padovani (Italy) i Jovanka Pantović (Serbia)
Coordinator from the Faculty of Technical Sciences:
Jovanka Pantović
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Fundamental and applied
Project Summary:
Modern society is increasingly dependent on complex software systems involving large numbers of heterogeneous, autonomous components interconnected by networks with dynamic topologies. As these systems provide access to fundamental services, their correctness and reliability is becoming a prominent aspect of everyday life. And yet, their design and deployment pose unprecedented challenges, mostly because they must account for unforeseen changes and evolutions of the environment in which they execute. Because of their complex and dynamic nature, classical formal methods for software development, analysis and verification are not yet able to provide sufficiently strong guarantees on the correctness and reliability of such systems. This calls for a new generation of formal methods to assist software developers. Types are a flexible and expressive way of specifying and analyzing software properties and the ongoing research on type systems shows that their full potential is yet to be fully uncovered. The goal of the "Dynamically and Autonomously Reconfigurable Types" (DART) project is to propose a new comprehensive view of types to face the new challenges of programming autonomic and distributed systems, providing at the same time: 1) formal theories defining new type systems, 2) effective analysis techniques based on these type systems and 3) tools for program specification and verification.
Duration of the project:
1.7.2013-31.12.2013.
Partners:
Faculty of Technical Sciences, University of Novi Sad Dipartimento di Informatica, Università di Torino
Researchers from the FTS:
Jelena Čolić Silvia Gilezan Jelena Ivetić Svetlana Jakšić Jovana Obradović Jovanka Pantović Jovana Radenović
Equipment purchased from the project funds:
-

Projekat bilateralne saradnje – naziv:
PRIMENA RFID (INTERNET OF THING) TEHNOLOGIJE ZA POVEĆANJE KVALITETA IDENTIFIKACIJE I PRAĆENJA ŽIVOTINJA
Oznaka projekta / akronim:
680-00-00557/2013-09/04
Web:
Rukovodilac projekta:
prof. dr Stevan Stankovski
Rukovodilac projekta sa FTN:
prof. dr Stevan Stankovski
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Primenjena istraživanja
Opis projekta:
Najveći svetski proizvođači krupne stoke (misli se pre svega na goveda), kao što su SAD, Kanada, Brazil i Australija, su poslednjih par godina intenzivno da uvode njihovu digitalnu identifikaciju (zasnovanu na RFID tagu), i nametnuli je kao obavezu za proizvođače. Ova činjenica je omogućila da se pokrene niz različitih istraživanja. Ona su pre svega usmerena na praćenje njihovog kretanja, kako između farmi, tako i između farmi i klanica. Ova istraživanja su pokrenuta na nacionalnom nivou, kako bi se prikupljali podaci o vremenu i mestu gde je životinja stigla. Na taj način, komisije na nacionalnim nivoima za praćenje zdravstvenog stanja, mogu veoma brzo da reaguju na pojavu bolesti, njeno praćenje i ujedno sprečavanje daljeg širenja. U toku su intenzivna istraživanja koja će omogućiti da se navedeni identifikacioni tagovi iskoriste ujedno i za bolji menadžment na farmama. To bi omogućilo efikasniju ishranu, bolje praćenja zdravstvenog stanja, reproduktivnih i proizvodnih osobina, kao i niz ušteda kako u hrani, energiji, tako i u radnoj snazi. Takođe, intenzivna su istraživanja i na zaštiti privatnosti, što je problem koji je prisutan kod svih bežičnih tehnologija. Istraživanja koja integralno posmatraju zasebno postavljenu RFID tehnologiju i sa druge strane bežične senzorske mreže, su praktično na samom početku. Osnovni razlog je što do sada nije postojala dobro razvijena infrastruktura za RFID tehnologiju. Imajući u vidu da će se intenzivirati primena bežičnih tehnologija u okviru lanaca snabdevanja, sigurno će se nametnuti i pronalaženje adekvatnih rešenja u dobijanju podataka, kada se zbog delimičnog ili potpunog otkaza jedne od tehnologija, redundantnost koja je prisutna u celokupnom sistemu, mora iskoristiti u cilju očuvanja kvaliteta posmatranog sistema.
Trajanje projekta:
09.2013 – 09.2015.
Institucije učesnici / partneri:
Univerzitet u Novom Sadu, Fakultet tehničkih nauka China Agricultural University, 17号 Qinghua East Road, Haidian, Beijing, China
Učesnici – istraživači sa FTN:
Prof dr Stevan Stankovski, Prof. dr Gordana Ostojić, Ivana Šenk, Laslo Tarjan
Oprema nabavljena iz projektnih sredstava:

Bilateral Cooperation Project – Title:
RFID (INTERNET OF THING) BASED ANIMAL INDIVIDUAL IDENTIFICATION TECHNOLOGY AND ITS APPLICATION ON QUALITY TRACEABILITY SYSTEM
Project code / acronym:
680-00-00557/2013-09/04
Web site:
Grantholder:
prof. dr Stevan Stankovski
Coordinator from the Faculty of Technical Sciences:
prof. dr Stevan Stankovski
Scientific Research Field / Type of research (Fundamental / Applied / Development):
Applied
Project Summary:
The world's largest producers of livestock (primarily refers to cattle), such as the USA, Canada, Brazil and Australia, the last few years began intensively to introduce their digital identification (based on the RFID tag), and imposed as an obligation for manufacturers. This fact made it possible to launch a number of different studies. They are primarily focused on tracking their movements, both between farms and between farms and slaughterhouses. These studies were initiated at the national level, in order to collect data on the time and place where the animals arrived. Thus, the Commission at the national level for monitoring health status can rapidly react to the disease, its monitoring and also to prevent further spread. During the intensive research that will allow the specified identification tags at the same time take advantage of better management on farms. This would allow a more efficient consumption, better monitoring of health, reproduction and production traits, as well as many savings as food, energy, and in the workforce. Also, extensive research and the protection of privacy, which is a problem that is present in all wireless technologies. Research that integrated viewed separately mounted RFID technology and on the other side of the wireless sensor networks are practically at the outset. The main reason is that so far there was no well-developed infrastructure for RFID technology. Bearing in mind that the intensified use of wireless technology within a supply chain, it will surely be imposed and finding adequate solutions in obtaining the data, when the partial or complete failure of one of the technology, the redundancy that is present in the entire system, must be used in order to preserving the quality of the observed system.
Duration of the project:
09.2013 – 09.2015.
Partners:
University of Novi Sad, Faculty of Technical Sciences China Agricultural University, 17号 Qinghua East Road, Haidian, Beijing, China
Researchers from the FTS:
Prof dr Stevan Stankovski, Prof. dr Gordana Ostojić, Ivana Šenk, Laslo Tarjan
Equipment purchased from the project funds:

Međunarodni projekti

DAAD

International projects

DAAD

Projekat DAAD:

JOINT GERMAN-SOUTH-EAST EUROPEAN NETWORK PROJECT
ELISE (ELectrical Engineering and Information Technology in South East Europe)
Part of **University Network for Academic Training**
in Electrical Engineering & Information Technology (EE&IT)
in South Eastern Europe (SEE)

Oznaka projekta / akronim:

ELISE

Web:

http://www.tu-ilmenau.de/it-tet/kooperationen/daad-projekt-suedosteuropa/

Rukovodilac projekta:

Prof. dr Hannes Toepfer, Ilmenau University of Technology, Germany

Rukovodilac projekta sa FTN:

Prof. dr Neda Pekarić Nađ

Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):

Primenjena elektromagnetika

Opis projekta:

Ciljevi projekta ELISE

- Poboljsanje kvaliteta doktorskih i postdiplomskih studija u oblasti elektrotehnike i informacione tehnike.
- Podrska skolovanju studenata doktorskih studija i podrska mladim naucnicima.
- Razvijanje mreze univerziteta za akademsko obrazovanje i kooperaciju mladin naucnika
- Dodela posebnih skolarina studentima i mladim naucnicima
- Pokretanje zajednickih istrazivackih projekata relevantnih za SEE parnere, sa ciljem zajenickog ucesca u projektima Evropske zajednice.

Svake godine se odrzava skup ucesnika ELISE projekata. Ove godine to je bio
6th International PhD Seminar on Computational electromagnetics and bioeffects of electromagnetic fields – CEMBEF 2012, Jun 28-30, 2012, Novi Sad, Serbia

Trajanje projekta:

Godina dana, sa mogucnoscu produzetka svake naredne godine

Institucije učesnici / partneri:

Ilmenau University of Technology (IUT), University of Niš (UNIS), Ss. Cyril and Methodius University of Skopje (UKIM), University of Banja Luka (BLU), Technical University of Sofia (TUS), University of Split (USP), University of Novi Sad (UNS), Politehnica University of Timisoara (UPT), Transilvania University of Brasov (TUB)

Učesnici –istraživači sa FTN:

Miroslav Prsa, Vera Bajovic, Anamarija Juhas, Nikola Djuric, Karolina Kasas-Lazetic, Dejana Herceg, Miodrag Milutinov

Oprema nabavljena iz projektnih sredstava:

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DAAD project – Title:

JOINT GERMAN-SOUTH-EAST EUROPEAN NETWORK PROJECT
ELISE (ELectrical Engineering and Information Technology in South East Europe)
Part of **University Network for Academic Training**
in Electrical Engineering & Information Technology (EE&IT)
in South Eastern Europe (SEE)

Project code / acronym:

ELISE

Web site:

http://www.tu-ilmenau.de/it-tet/kooperationen/daad-projekt-suedosteuropa/

Grantholder:

Prof. Dr. Hannes Toepfer, Ilmenau University of Technology, Germany

Coordinator FTS:

Prof. Dr. Neda Pekarić Nađ

Scientific Research Fields / Type of research (Fundamental / Applied / Development):

Applied Electromagnetics

Summary:

General goals of ELISE

- Improvement of the postgraduate studies in Electrical Engineering and Information Technology (EE&IT) by means of joint activities for Master and doctorate studies in EE&IT, respectively.
- Support of the academic qualification of PhD. students and junior scientists
- Further development of the university network ELISE for academic training and research collaboration of young scientists in EE&IT including the approach to other networks in the European Research Area (ERA).
- Sur-place scholarships will be used to involve students into the ELISE network.
- Initiating joint research projects dealing with actual scientific problems which are in particular relevant for the SEE partners; the final goal is the participation in research programmes of the European Commission.

Every year there is a meeting of the ELISE project participants. This year it was
6th International PhD Seminar on Computational electromagnetics and bioeffects of electromagnetic fields – CEMBEF 2012, Jun 28-30, 2012, Novi Sad, Serbia

Duration:

The duration of the project is 1 year and it can be extended every year again.

Partners:

Ilmenau University of Technology (IUT), University of Niš (UNIS), Ss. Cyril and Methodius University of Skopje (UKIM), University of Banja Luka (BLU), Technical University of Sofia (TUS), University of Split (USP), University of Novi Sad (UNS), Politehnica University of Timisoara (UPT), Transilvania University of Brasov (TUB)

Researchers from the FTS:

Miroslav Prsa, Vera Bajovic, Anamarija Juhas, Nikola Djuric, Karolina Kasas-Lazetic, Dejana Herceg, Miodrag Milutinov

Equipment purchased from project funds:

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Međunarodni projekti

SCOPES

International Projects

SCOPES

SCOPES projekat– naziv:
NAUČNA OSNOVA ZA MEHANIČKO MODELOVANJE, OPTIMIZACIJU I PROCENU RIZIKA UREĐAJA ZA ELEKTRO-MUSKULATURNO ONESPOSOBLJAVANJE
Oznaka projekta / akronim:
EMDSAFE
Web:
Rukovodilac projekta:
prof. Niels Kuster
Rukovodilac projekta sa FTN:
Doc. dr Nikola Đurić
Naučna oblast istraživanja / vrsta istraživanja (osnovna / primenjena / razvojna):
Bio-elektromagnetika
Opis projekta:
Opšti cilj ovog projekta između IT'IS Fondacije (Švajcarska) i Fakultet tehničkih nauka, Univerzitet u Novom Sadu (Srbija) jeste da naučnu zajednicu obogati sa boljim razumevanjem elektromagnetskih (EM) polja koja stvaraju uređaji za elektro-muskulatorno onesposobljavanje (EMDs), u globalu, kao i Taser uređaji posebno, i kako u interakciji sa ljudskim telom ovi uređaji izazivaju nervno-misicno onesposobljavanje i neželjene srčane stimulacije. Projekat dopunjuje EM-neuro istraživačku saradnju između IT'IS Fondacije, Masačusetskog instituta za tehnologiju (MIT, USA) i Američke agencije za hranu i lekove (US FDA) kao bi se poboljšalo mehaničko razumevanje dejstva EMD uređaja i pružila dodatna validacija.
Trajanje projekta:
36 meseci
Institucije učesnici / partneri:
1. Foundation for Research on Information Technologies in Society (IT'IS) 2. Fakultet tehničkih nauka, Univerzitet u Novom Sadu
Učesnici – istraživači sa FTN:
1. Doc. dr Nikola Đurić, 2. Doc. dr Tatjana Lončar-Turukalo, 3. M.Sc. Dragan Kljajić, 4. M.Sc. Gorana Mijatović, 5. M.Sc. Tamara Ćeranić.
Oprema nabavljena iz projektnih sredstava: