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FOREWORD

The Faculty of Chemical and Food Technology (FCHPT) is one of seven faculties of the Slovak University of Technology. The history of the Faculty dates back to 1939, when Law No. 188 of 25 July 1939 allowed the establishment of a Chemical Engineering branch at the Slovak University of Technology. The specialization profile of the Faculty has developed steadily in accordance with the needs of the community.

The Slovak higher education has its rich history. Our Faculty follows in the footsteps of its famous predecessor in the education of technical chemistry, i.e., the famous Mining Academy in Banská Štiavnica constituted by the empress Maria Theresa in 1762. The establishment of the Dr. M. R. Štefánik College of Technology in 1937 and subsequently, that of the Slovak College of Technology in 1939 succeeded in keeping the high standard of technical education in Slovakia.

Within the time of its existence, the Faculty has educated several generations of graduates in both chemical and food engineering and graduates in postgraduate doctorate courses in chemical and technical sciences. Thus, the Faculty has helped considerably to increase scientific knowledge in industry, education system, scientific and research institutes, and administrative services.

The Faculty occupies a very specific position within the Slovak Republic and relates to the whole spectrum of chemical, food, pharmaceutical and consumer industries, and ecology. At present, some 1700 students of all the three study ranks study at the Faculty and they are trained by qualified pedagogical and research staff.

The Faculty currently offers study in BSc courses, MSc courses, and PhD. The first rank BSc course for all students lasts three years, and is run in two branches: Chemical Technology and Food Technology. The second rank MSc courses run with several possible specializations over two years. The graduate obtains the title Master of Science (MSc). The highest form of university education is currently the doctorate study, which in the past was run as a form of preparation for scientific work. The Faculty has conferred the title PhD in 16 branches of the doctoral study.

The Faculty has a widely oriented scientific program, leading to the development of basic scientific fields in chemistry, chemical technology and food processing. This wide scientific orientation of Institutes at the Faculty allows goal-oriented training of undergraduates and thereby their quicker transition to industry. There are several scientific schools at the Faculty which are successful at winning grants from domestic and international sources and at organizing scientific meetings. The Faculty generally maintains an important international position. In addition to basic research, the Faculty participates in widely applied research for practice. The cooperation with many factories and companies allows for a swift application of research results in practice. The Faculty participates in issuing the specialized scientific journals: Acta Chimica Slovaca, Chemical Papers and Fibres and Textile.

The scope and quality of scientific activities keep the Faculty at a level, which is comparable with other top research and university centers in the world. This can be proved by the above mentioned number of grants, staff invitations to participate in conferences abroad, wide cooperation with foreign universities and institutions, and memberships in international organizations.

March 2011

prof. Ján Šajbidor, DSc.
dean

INSTITUTE OF ANALYTICAL CHEMISTRY

Head of Institute

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Foreword

The Department of Analytical Chemistry was created in 1941. The Institute of Analytical Chemistry was established in January 2006 by joining the Department of Analytical Chemistry and the Department of NMR Spectroscopy and Mass Spectrometry. The Institute is directed to the perspective branches of development of the new analytical procedures and theoretical approaches aimed to the solution of problems of various subjects predominantly of chemical, food and pharmaceutical industry and environment. The institute has achieved the top-position in the Slovak Republic; it has also developed fruitful cooperation with domestic as well as foreign institutions.

Teaching activities

Analytical Chemistry is one of the basic subjects, which are for all Bachelor study programs fully provided by the Institute of Analytical Chemistry. The Institute guarantees also the subjects Analytical methods in clinical praxis and Testing and quality control. Students participate in research in the frame of a wide variety of Bc. projects. In the graduate study, our Institute directs and provides almost full teaching for the study program Technical Chemistry, module Analytical Chemistry. Further it provides teaching of 7 subjects for other study programs. In PhD study the Institute guarantees the study program Analytical Chemistry and educates 23 PhD students. The pedagogical process is performed by 5 professors, 9 associated professors, 5 assistant professors, 6 scientific-researchers and 9 PhD students.

Research profile

The research is concentrated in the following areas:

- trace and ultratrace electrochemical and spectroscopic determination of elements with the stress to the presence of heavy metals in complex matrices,
- trace and ultratrace analysis of volatile and semivolatile analytes in complex organic systems utilising isolation and preconcentration techniques in combination with fast GC and MS,
- separation and determination of enantiomers,
- development and utilisation of biosensors, particularly based on nucleic acids,
- study of the structure and interactions of natural and synthetic compounds.

Department of Analytical Chemistry

Head of Department **Prof. Ján Labuda, DSc.**



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Projects

National project

Project Code: SAV-FM-EHP-2008-02-05
 Title (sl.): Analytické metódy pre kvalitné a bezpečné tradičné potravinové výrobky.
 Title (eng.): Analytical methods for quality and safe traditional food products.
 Project duration: 01.07.2008 - 31.10.2010
 Responsible person: **Doc. Ing. Ivan Špánik, PhD.**

APVV

Project Code: APVV-0319-07
 Title (sl.): Vývoj nových profilovacích analytických metód pre kvalitné a bezpečné potraviny.
 Title (eng.): Development of novel profiling analytical methods for food quality and safety.
 Project duration: 01.09.2008 – 30.06.2011
 Responsible person: **Doc. Ing. Ivan Špánik, PhD.**

APVV

Project Code: VMSP-P-0064-09
 Title (sl.): Vývoj analytických metód pre problematické zlúčeniny zahrnuté v rámcovej smernici o vode č. 2000/60/ES.
 Title (eng.): The development of analytical methods for problematic WFD pollutants.
 Project duration: 01.09.2009 - 30.09.2011
 Responsible person: **Ing. Peter Oswald, PhD. , doc. Ing. Ivan Špánik, PhD.**

VEGA

Project Code: 1/0710/10
 Title (sl.): Moderné kombinované analytické metódy pri určovaní pôvodu potravín
 Title (eng.): Modern hyphenated analytical methods in determination of food origin

Project duration: 01.01.2010 – 31.12.2011
Responsible person: **Doc. Ing. Ivan Špánik, PhD.**

VEGA

Project Code: 1/0827/08
Title (sl.): Nové elektroanalytické techniky na stanovenie stopových koncentrácií a chemických foriem arzénu, antimónu a selénu vo vodách pre použitie v laboratóriach i v teréne.
Title (eng.): New electroanalytical techniques for routine determination of trace concentrations and speciation analysis of arsenic, antimony and selenium in water for laboratory and field applications.
Project duration: 01.01.2008 - 31.12.2010
Responsible person: **Doc. Ing. Ernest Beinrohr, DrSc.**

VEGA

Project Code: 1/0852/08
Title (sl.): Využitie nanotechnológie pri tvorbe DNA a LDL biosenzorov.
Title (eng.): Using of nanotechnology in preparation of DNA and LDL biosensors.
Project duration: 01.01.2008 - 31.12.2010
Responsible person: **Ing. Adriana Ferancová, PhD. (v 2008), prof. Ing. Ján Labuda, DrSc. (od 2009)**

VEGA

Project Code: 1/0827/08
Title (sl.): Vývoj rýchlych a účinných metód analýzy organických zlúčenín, dôležitých z hľadiska kvality životného prostredia, v selektívnych jedno- a viackolónových zostavách plynovej chromatografie v spojení s hmotnostnou spektrometriou v režimoch EI/CI/NCI.
Title (eng.): Development of fast and efficient methods of analysis in selective gas chromatographic single- and multicolumn setups hyphenated to mass spectrometry with EI/CI/NCI spectra measurements for organic compounds of environmental concern.
Project duration: 01.01.2008 - 31.12.2010
Responsible person: **prof. Ing. Ján Krupčík, DrSc.**

VEGA

Project Code: 1/0058/08
Title (sl.): Analytické a termodynamické štúdium separácie opticky aktívnych látok metódou HPLC v on-line spojení s DAD, NMR a polarimetrickou detekciou. Príprava nových selektívnych sorbentov použiteľných pri príprave vzorky.
Title (eng.): Analytical and thermodynamic study of the separation of the optically active compounds by HPLC method with on-line DAD, NMR and polarimetric detection. The preparation of new selective sorbents used for the preparation of the samples.
Project duration: 01.01.2008 - 31.12.2010
Responsible person: **prof. Ing. Jozef Lehota, DrSc.**

VEGA

Project Code: 1/0318/08
Title (sl.): Kombinácia fluorescenčnej spektroskopie a chemometrie pre analýzu mnohozložkových zmesí.
Title (eng.): Fluorescence Spectroscopy Combined with Chemometrics for Analysis of Multi-component Mixtures.

Project duration: 01.01.2008 - 31.12.2010
 Responsible person: **doc. Ing. Jana Sádecká, PhD.**

VEGA

Project Code: 1/0066/09
 Title (sl.): Nové metodologické a chemometrické prístupy pri riešení problémov environmentálnych a klinických analýz.
 Title (eng.): New methodological and chemometrical approaches for solving problems in environmental and clinical analysis.
 Project duration: 01.01.2009 - 31.12.2011
 Responsible person: **Doc. Ing. Peter Tomčík, PhD.**

VEGA

Project Code: 1/0390/09
 Title (sl.): Rýchla plynová chromatografia na analýzu endokrinných disruptorov v matriciach životného prostredia.
 Title (eng.): Fast Gas Chromatography for Analysis of Endocrine Disruptors in Environmental Matrices.
 Project duration: 01.01.2009 - 31.12.2011
 Responsible person: **Prof. Ing. Eva Matisová, DrSc.**

List of bachelor (BT), diploma (DT) and dissertation (DisT) theses

| Type | Final Thesis | Supervisor |
|------|---|-------------------------------|
| BT | Bc. Marek Benc Criterions for Application Approximate Relations for Calculating Simple Protolytic Equilibriums in Water Solutions of Buffer Solutions | doc. Ing. Peter Tomčík, PhD. |
| BT | Bc. Gábor Benkovics Behaviour study of diazepam derivates in chiral columns in the presents of alcohol using HPLC-NMR | Ing. Dr. Jaroslav Škubák |
| BT | Bc. Zuzana Berčáková Endocrine Disruptors and its Determination by Fast Gas Chromatography | Ing. Svetlana Hrouzková, PhD. |
| BT | Bc. Monika Borbélyová Determination of Caramel Using Fluorescence Spectroscopy | doc. Ing. Jana Sádecká, PhD. |
| BT | Bc. Jana Džúrová The Utilisation of Multidimensional Gas Chromatography in Determination of Honey's Origin | doc. Ing. Ivan Špánik, PhD. |
| BT | Bc. Katarína Gemerová Possibilities of determination of selected pesticides in water sample in combination with sorption techniques. | Ing. Andrea Hercegová, PhD. |
| BT | Bc. Veronika Grigerová Gas Chromatographic-mass Spectrometric Analysis of Characteristic Volatile Compounds | doc. Ing. Eva Benická, CSc. |
| BT | Bc. Michal Karabín Study of the association complexes of diazepam by high performance liquid chromatography in conjunction with nuclear magnetic resonance | Ing. Dr. Jaroslav Škubák |
| BT | Bc. Mária Kasanová Analysis of pesticides by gas chromatography with mass spectrometry in negative chemical ionization mode | Ing. Svetlana Hrouzková, PhD. |

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| BT | Bc. Andrea Krajčíková The Identification of Volatile Organic Compounds in Fruit Distillates | doc. Ing. Ivan Špánik, PhD. |
| BT | Bc. Martin Kroliak Adsorption Stripping Chronopotentiometry for the Determination of Some Electrochemically Inactive Species | doc. Ing. Ernest Beinrohr, DrSc. |
| BT | Bc. Katarína Makyšová Analytical methods for fruit distillates authentication | doc. Ing. Ivan Špánik, PhD. |
| BT | Bc. Miriam Markovičová Study of effect propanol, iso-propanol and terc-butanol on the formation of association complexes of Diazepam the method HPLC with NMR | Ing. Dr. Jaroslav Škubák |
| BT | Bc. Szabolcs Nagy Determination of flavonoids in beer using HPLC | Ing. Dr. Jaroslav Škubák |
| BT | Bc. Miloš Olexa Determination Nitrites in Water by Flow Coulometric Titration | doc. Ing. Ernest Beinrohr, DrSc. |
| BT | Bc. Agneša Páleníková Analyzes of Atrazine by Gas Chromatography | Ing. Svetlana Hrouzková, PhD. |
| BT | Bc. Lucia Pastirčíková Use of Multicolumn Setups in Gas Chromatography of Selected Volatile Constituents of Food | doc. Ing. Eva Benická, CSc. |
| BT | Bc. Roman Poláček Multivariate Calibration | Ing. Pavel Májek, CSc. |
| BT | Bc. Jozef Sochr Connection of electrochemical and petrochemical methods in the analysis of environmental samples | doc. Ing. Ernest Beinrohr, DrSc. |
| BT | Bc. Ľubica Spišská Examination of the Chemical Composition of Propolis by High Performance Liquid Chromatography | doc. Ing. Katarína Hroboňová, PhD. |
| BT | Bc. Magdaléna Srnková New Stationary Phases for Analysis of Polar Organic Compounds by Gas Chromatography | doc. Ing. Eva Benická, CSc. |
| BT | Bc. Jana Svítková Connection Electrochemical and Spectroscopic Methods in the Analysis Environmental Samples | Ing. Alena Manová, CSc. |
| BT | Bc. Martin Tibenský The Use of Preconcentration Techniques for the Determination of some Antioxidants in beer | Ing. Dr. Jaroslav Škubák |
| BT | Bc. Michaela Tomková Determination of Ellagic Acid Using Fluorescence Spectroscopy | doc. Ing. Jana Sádecká, PhD. |
| BT | Bc. Veronika Uríčková Analysis of Juniper by Fluorescence Spectrometry | doc. Ing. Jana Sádecká, PhD. |
| BT | Bc. Zuzana Vaňová Determination of residues of disinfectants in drinking water by flow-coulometry | doc. Ing. Ernest Beinrohr, DrSc. |
| BT | Bc. Dominika Vnuková Electrochemical preconcentration trace concentrations of mercury for atomic absorption spectrometry | Ing. Alena Manová, CSc. |
| BT | Bc. Roman Zrubák Electrochemical DNA Biosensor on the Base of Nanomaterials | prof. Ing. Ján Labuda, DrSc. |
| DT | Ing. Zuzana Hyrová Methodology for Analysis of Bioactiv Polar Organic Compounds in Diverse Water Diluted Samples with Use of Combined Separation Methods (LC, HPLC and GC) | doc. Ing. Eva Benická, CSc. |
| DT | Ing. Kristína Jamborová Application of Fast GC-MS in Analysis of Pesticide Residues | Ing. Andrea Hercegová, PhD. |

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| DT | Ing. Lukáš Lauko Determination Nitrates and Nitrates in Drinking Water by In-electrode Coulometric Titration | doc. Ing. Ernest Beinrohr, DrSc. |
| DT | Ing. Diana Markechová Application of Fluorescence Spectroscopy and Multivariate Statistical Methods in Juniper-flavoured Spirit Drinks Analysis | doc. Ing. Jana Sádecká, PhD. |
| DT | Ing. Alexandra Pažitná The determination of VOC composition in juniperus flavoured spirits by gas chromatography | doc. Ing. Ivan Špánik, PhD. |
| DT | Ing. Jana Riecka Analysis with DNA biosensor in electrochemical and impedimetric flow-trough arrangement | prof. Ing. Ján Labuda, DrSc. |
| DisT | Ing. Zuzana Királyová, PhD. Detailed multi-dimensional analysis of environmental data | prof. Ing. Ján Mocák, DrSc. |
| DisT | RNDr. Viera Mrázová, PhD. Chemometrical evaluation of the clinical data | prof. Ing. Ján Mocák, DrSc. |
| DisT | Ing. Ľudmila Sirotová, PhD. New sensors and methods for evaluation of selected phytochemicals | prof. Ing. Ján Labuda, DrSc. |

Selected publications

Journals

Current Contents Publications

- ADC1 Čižmáriková, Ružena [20%] - Bruchatá, Katarína [20%] - Pastírová, Zuzana [20%] - **Lehotay, Jozef** [20%] - **Hroboňová, Katarína** [20%]: HPLC and TLC enantioseparation of the nitro-positioned aryloxy-substituted aminopropanols. - , 2010.
In: Pharmazie. - ISSN 0031-7144. - Vol. 65, Iss. 5 (2010), s. 386-387
- ADC2 **Ferancová, Adriana** [60%] - Rassaei, Liza [10%] - Marken, Frank [10%] - **Labuda, Ján** [10%] - Sillanpää, Mika [10%]: dsDNA modified carbon nanofiber - solidified paste electrodes: probing Ni(II) - DNA interactions. - , 2010.
In: Microchimica Acta. - ISSN 0026-3672. - Vol. 170, Iss. 1-2 (2010), 155?164
- ADC3 **Hercegová, Andrea** [80%] - **Húšková, Renáta** [10%] - **Matisová, Eva** [10%]: Evaluation of different calibration approaches in pesticide residues analysis in non-fatty food using fast GC-MS.
In: International Journal of Environmental Analytical Chemistry. - ISSN 0306-7319. - Vol. 90, Iss. 3-6 : Sp.Iss (2010), s. 188-204
- ADC4 **Húšková, Renáta** [30%] - **Matisová, Eva** [40%] - Ondreková, Silvia [15%] - Ďurčanská, Jarmila [15%]: Fast GC-MS of endocrine disrupting chemicals. - , 2010.
In: International Journal of Environmental Analytical Chemistry. - ISSN 0306-7319. - Vol. 90, Iss. 3-6 : Sp.Iss (2010), s. 173-187
- ADC5 **Húšková, Renáta** [40%] - **Matisová, Eva** [20%] - **Hrouzková, Svetlana** [40%]: Mass spectrometry with negative chemical ionization and their utilization in GC-MS analysis of organic pollutants.
In: Chemické listy. - ISSN 0009-2770. - Vol. 104, Iss. 10 (2010), s. 913-920
- ADC6 Koóš, Peter [40%] - **Špánik, Ivan** [30%] - Gracza, Tibor [30%]: Asymmetric intramolecular Pd(II)-catalysed amidocarbonylation of unsaturated amino alcohols.
In: Tetrahedron: Asymmetry. - ISSN 0957-4166. - Vol. 20, Iss. 23 (2010), s. 2720-2723
- ADC7 **Krupčík, Ján** [50%] - **Mydlová-Memersheimerová, Janka** [20%] - **Májek, Pavel** [20%] - Zapadlo, Michal [5%] - Sandra, Pat [5%]: The non-modulated transfer of total effluent for serially coupled columns in gas chromatography.
In: Journal of Chromatography. - ISSN 0021-9673. - A 1217, Iss. 11 (2010), s. 1821-1829

- ADC8 **Labuda, Ján** [30%] - Brett, Ana Maria Oliveira [5%] - Evtugyn, Genady [10%] - Fojta, Miroslav [30%] - Mascini, Marco [5%] - Ozsoz, Mehmet [5%] - Palchetti, Ilaria [5%] - Paleček, Emil [5%] - Wang, Joseph [5%]: Electrochemical nucleic acid-based biosensors: concepts, terms and methodology, IUPAC Technical Report. - , 2010.
In: Pure and Applied Chemistry. - ISSN 0033-4545. - Vol. 82, No. 5 (2010), s. 1161-1187
- ADC9 **Lachová, Miroslava** [30%] - **Lehotay, Jozef** [30%] - **Skačání, Ivan** [20%] - Čižmárik, Jozef [20%]: Study of selectivity of molecularly imprinted polymers prepared under different conditions. - , 2010.
In: Journal of chromatographic science. - ISSN 0021-9665. - Vol. 48, Iss. 5 (2010), s. 395-398
- ADC10 **Májek, Pavel** [60%] - **Krupčík, Ján** [30%] - Kočer, A. [5%] - Gökdere, M. [5%]: Determination of Vinyl Chloride in Poly(vinyl chloride) by Static Headspace Gas Chromatography Using Flame Ionization Detector.
In: Chemické listy. - ISSN 0009-2770. - Vol. 104, Iss. 10 (2010), s. 934-939
- ADC11 **Sádecká, Jana** [50%] - **Tóthová, Jana** [50%]: Determination of caramel in non-aged mixed wine spirits by synchronous fluorescence spectroscopy. - , 2010.
In: European Food Research and Technology. - ISSN 1438-2377. - Vol. 230, Iss. 5. - , 2010, s. 797-802
- ADC12 Šafář, Peter [30%] - Žúžiová, Jozefína [20%] - Tóthová, Eva [5%] - Marchalín, Štefan [10%] - Prónayová, Nadežda [10%] - **Švorc, Ľubomír** [10%] - **Vrábel, Viktor** [5%] - Comesse, Sébastien [5%] - Daich, A. [5%]: Regioselective ring opening of the chiral non-racemic furoindolizidinols. New entry to alkylindolizidine derivatives.
In: Tetrahedron: Asymmetry. - ISSN 0957-4166. - Vol. 21, Iss. 5 (2010), s. 623-630
- ADC13 **Švorc, Ľubomír** [30%] - **Vrábel, Viktor** [20%] - Žúžiová, Jozefína [15%] - Marchalín, Štefan [15%] - Kožíšek, Jozef [20%]: (6 S,7 S,8 R,8a S)-6-Ethylperhydroindolizine-7,8-diol. - , 2010.
In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E66 (2010), o1666
- ADC14 **Tóthová, Jana** [50%] - **Sádecká, Jana** [50%]: Principles and applications of synchronous fluorescence in multicomponent analysis.
In: Chemické listy. - ISSN 0009-2770. - Vol. 104, Iss. 8 (2010), s. 778-783
- ADC15 **Tóthová, Jana** [40%] - **Sádecká, Jana** [30%] - **Májek, Pavel** [30%]: Total Luminescence Spectroscopy for Differentiating Between Brandies and Wine Distillates. - , 2009.
In: Czech Journal of Food Sciences. - Praha : Ústav zemědělských a potravinářských informací. - ISSN 1212-1800. - Vol. 27, No. 6. - , 2009, s. 425-431
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Head of Department

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Projects

VEGA

| | |
|---------------------|---|
| Project Code: | 2/0093/08 |
| Title (sl.): | Následky akútnej ischémie mozgu v závislosti od veku zvierat a ich ovplyvnenie pyridoindolmi a inými oxidantami. |
| Title (eng.): | Consequences of acute brain ischemia in relation to the age of animals and the effect of pyrrolidones and other antioxidants. |
| Project duration: | 01.01.2008 – 31.12.2010 |
| Responsible person: | Doc. Ing. Tibor Liptaj, CSc. |

VEGA

| | |
|---------------------|---|
| Project Code: | 2/0083/09 |
| Title (sl.): | Energetický metabolizmus mozgu sledovaný pomocou magnetickej rezonancie ako podklad pre štúdium mechanizmov hypoxickej-ischémického poškodenia mozgu novorodenca. |
| Title (eng.): | Energetic metabolism of brain monitored by magnetic resonance as the basis for the study of mechanism of hypoxic-ischemic damage of the brain of newborn. |
| Project duration: | 01.01.2009 – 31.12.2011 |
| Responsible person: | RNDr. Ivo Juránek, PhD., RNDr. Svatava Kašparová, PhD. |

VEGA

| | |
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| Project Code: | 1/0272/10 |
| Title (sl.): | Neurodegeneratívne ochorenia, skúmané spolu s terapeutickým vplyvom na zvieracích modeloch in vivo zobrazovaním a spektroskopiou magnetickej rezonancie (metabolický profil a bioenergetika mozgu) |
| Title (eng.): | Neurodegenerative diseases in animal models including therapeutic effect monitored by means in vivo magnetic resonance imaging and spectroscopy (metabolic profile and brain bioenergetics) |
| Project duration: | 1.1.2010 – 31.12.2011 |
| Responsible person: | RNDr. Svatava Kašparová, PhD. |

SP

| | |
|---------------------|---|
| Project Code: | 2003SP200280203 |
| Title (sl.): | Dobudovanie špičkového laboratória so zameraním na nukleárnu magnetickú rezonanciu. |
| Title (eng.): | Establishment of the top-class nuclear magnetic resonance laboratory. |
| Project duration: | 01.06.2003 – 31.12.2010 |
| Responsible person: | Doc. Ing. Tibor Liptaj, CSc. |

List of bachelor (BT), diploma (DT) and dissertation (DisT) theses

| Type | Final Thesis | Supervisor |
|------|--------------|------------|
|------|--------------|------------|

Selected publications**Journals****Current Contents Publications**

- ADC1 Gróf, Martin [30%] - Gatial, Anton [30%] - Milata, Viktor [10%] - **Prónayová, Nadežda** [10%] - Kožíšek, Jozef [5%] - Breza, Martin [5%] - Matějka, Pavel [10%]: Conformational and isomerizational studies of 3-N,N-dimethylhydrazino-2-acetyl propenenitrile using X-ray analysis, NMR and vibrational spectra, and ab initio calculations.
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In: Chemical Papers. - ISSN 0366-6352 (<http://nic.savba.sk/sav/inst/chem/chempap.html>). - Vol.

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- ADC6 Štolcová, Magdaléna [20%] - Kaszonyi, Alexander [20%] - Hronec, Milan [20%] - **Liptaj, Tibor** [20%] - Kyselá, Gabriela [20%]: Direct sulfenylation of acetone with benzothiazolesulfenamides to benzothiazolylthio-substituted alkylaminopropene: synthesis and application.
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In: Food Chemistry. - ISSN 0308-8146. - Vol. 123, Iss. 1 (2010), s. 45-50

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In: Magnetic Moments in Central Europe, February 11-15, 2009 : Program and Book of Abstracts. - : Slovenian NMR Centre, Ljubljana, Slovenia, 2009. - ISBN 978-961-6104-13-5. - S. 80
- AFG6 Špánik, Ivan [40%] - Janáčová, Antónia [40%] - **Jakubík, Tibor** [10%] - **Liptaj, Tibor** [10%]: Comparison of volatile organic compound composition of juniper flavoured beverages originated from various EU countries using comprehensive gas chromatography.
In: IUFoST, 15th World Congress of Food Science and Technology, Cape Town, South Africa, 22-26 August, 2010. - : South African Association for Food Science and Technology, 2010. - ISBN . - P0887
- AFG7 Špánik, Ivan [30%] - Janáčová, Antónia [40%] - Vasarábová, Hana [20%] - **Jakubík, Tibor** [10%]: SBSE Extraction of Organic Compounds from Plum Flavoured Alcoholic Beverage. - , 2010.
In: 34th International Symposium on Capillary Chromatography and 7th GCxGC Symposium, May 30-June 4, 2010. - : I.O.P.M.S., 2010. - S. 448
- AFH1 Kaliňák, Michal [70%] - **Liptaj, Tibor** [30%]: New possibilities for the study of metabolism in Slovakia.
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- AFH2 Šteinerová, Lucia [20%] - Vojteková, Marianna [20%] - Tarabová, Denisa [20%] - **Prónayová, Nadežda** [10%] - Krutošíková, Alžbeta [30%]: Nucleophilic substitutions and Suzuki coupling reaction on 1-chloro[1]benzofuro[3,2-c]pyridine. - , 2009.
In: Applied Natural Sciences 2009 : International Conference. Trnava, Slovak Republic, 7.-9.10.2009. - Trnava : Univerzita sv. Cyrila a Metoda v Trnave, 2009. - ISBN 978-80-8105-127-2.

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- AFH3 Vasarábová, Hana [40%] - Špánik, Ivan [20%] - Janáčová, Antónia [30%] - **Jakubík, Tibor** [10%]: Porovnanie extrakcie VOC zo slivovice pomocou rozdielnych sorpčných techník s PDMS sorbentom. - , 2010.
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- AFH4 Vojteková, Marianna [25%] - Šteinerová, Lucia [25%] - **Prónayová, Nadežda** [10%] - Krutošíková, Alžbeta [40%]: Reactions 1,2-dihydro[1]benzofuro[3,2-c]pyridine-1-one. - , 2009.
In: Applied Natural Sciences 2009 : International Conference. Trnava, Slovak Republic, 7.- 9.10.2009. - Trnava : Univerzita sv. Cyrila a Metoda v Trnave, 2009. - ISBN 978-80-8105-127-2.
- S. 30

INSTITUTE OF INORGANIC CHEMISTRY, TECHNOLOGY AND MATERIALS

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Foreword

The Institute of Inorganic Chemistry, Technology and Materials consist of three departments: Department of Inorganic Chemistry, Department of Inorganic Technology, and Department of Ceramics, Glass and Cement. The Institute offers courses in Basic and Advanced Inorganic Chemistry, Industrial Inorganic Chemistry, Applied Thermodynamics, Kinetics and reactors, Materials Science and Technology, Applied Electrochemistry. Key research topics are as follows: Chemistry of Inorganic Complexes, including investigation of their biological activity, Magnetochemistry, Solution Chemistry, Photochemistry of Coordination Compounds, Structural Chemistry and Chemical Crystallography, Ceramic materials, Molten Salt Electrochemistry, and Corrosion and Metal Deposition. Important is the cooperation with foreign universities and Slovak industry.

Teaching activities

Bachelor's study programs: Chemistry and Medical Chemistry; Chemical Technologies; Polymer Materials Technologies; Chemical Engineering; Automation, Information Engineering and Management in Chemical and Food Industries
Master's study programs: Inorganic Technology; Ceramics, Glass and Cement; Inorganic Chemistry; other - Environmental Chemistry and Technology; Management of Chemical and Food Industries; Fuels Technology and Petrochemistry ; Organic Technology.

Research profile

Investigation of the structure, composition, chemical, physical and biological properties of coordination compounds. Study of coordination compounds namely copper with biomolecules – nonsteroidal antirheumatics and antituberculotics. Significant contribution is search relationship between: structure – property – bioactivity of complexes. Magnetic properties, like spin-crossover, high-spin molecules and molecule-based magnets. Chemistry of molten salts. Theoretical problems of electrowinning of aluminium. Spent nuclear fuel treatment. Surface treatment of metals. Corrosion of metals in high-temperature systems. Preparation of filling powder to polymer composite. Low-waste technologies. Silicate chemistry. Sol-gel technology, special inorganic binders and glasses. Bioceramics. Microstructure processing of ceramics and glass-ceramic materials.

Department of Inorganic Chemistry

Head of Department prof. Marián Koman, DSc.



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Projects

National project

Project Code: VVCE-0004-07
 Title (sl.): Magnetoaktivita, elektroaktivita a fotoaktivita koordinačných zlúčenín.
 Title (eng.): Magnetoactivity, electroactivity and photoactivity of coordination compounds.
 Project duration: 2008-2010
 Responsible person: **prof. Ing. Roman Boča, DSc.**

APVV

Project Code: APVV-0006-07
 Title (sl.): Magnetotepelné vlastnosti nových nízkorozmerných magnetických materiálov.
 Title (eng.): Magnetothermal properties of novel low-dimensional magnetic materials.
 Project duration: 2008-2010
 Responsible person: **prof. Ing. Roman Boča, DSc.**

VEGA

Project Code: 1/0213/08
 Title (sl.): Nové magnetické materiály na báze koordinačných zlúčenín.
 Title (eng.): New magnetic materials based upon coordination compounds.
 Project duration: 01.01.2008 - 31.12.2010
 Responsible person: **prof. Ing. Roman Boča, DSc.**

VEGA

Project Code: 1/0353/08
 Title (sl.): Komplexy kovov pre biologické procesy.
 Title (eng.): Metal complexes for biological proceses
 Project duration: 01.01.2008 - 31.12.2010
 Responsible person: **prof. RNDr. Milan Melník, DSc.**

International project

Project Code: SK-HU-0001-08
 Title (sl.): Štúdium zloženia, štruktúry a vlastností komplexov Cu(II) a Fe(III) s fluorovanými biomolekulami v tuhej fáze a v roztokoch.

Title (eng.): Study of composition, structure and properties of Cu(II) and Fe(III) complexes with fluoroderivatives of biomolecules in the solid state and solutions.
 Project duration: 01.02.2009 - 31.12.2010
 Responsible person: **prof. RNDr. Milan Melník, DSc.**

List of bachelor (BT), diploma (DT) and dissertation (DissT) theses

| Type | Final Thesis | Supervisor |
|------|---|--------------------------------------|
| BT | Bc. Peter Augustín Preparation of new coordination compounds and their magnetic properties | prof. Ing. Roman Boča, DrSc. |
| BT | Bc. Michal Brieník Preparation of thiocyanateiron complexes with pyridine derivatives | doc. Ing. Iveta Ondrejkovičová, PhD. |
| BT | Bc. Jana Jokrllová Preparation and properties of salicylate manganese complexes for metalenzymatic activity modeling | doc. Ing. Dušan Valigura, CSc. |
| BT | Bc. Alena Kišacová Preparation and properties of nitrobenzoatemanganese complexes with some chelating ligands of biological activity | doc. Ing. Ján Moncol, PhD. |
| BT | Bc. Lenka Oravcová Preparation and properties of carboxylatecopper(II) complexes with 2-(2-hydroxyethyl)pyridine | doc. Ing. Dušan Valigura, PhD. |
| BT | Bc. Barbora Rajničová Preparation and Properties of Salicylatocopper(II) for SOD Activity Modeling | doc. Ing. Dušan Valigura, CSc. |
| BT | Bc. Ivana Rosiarová Preparation and properties of carboxylatecopper(II) complexes 2-methylaminopyridine | doc. Ing. Dušan Valigura, CSc. |
| DT | Ing. František Šimo Theoretical and photochemical study of iron(III) kojato complexes | prof. Ing. Jozef Šima, DrSc. |
| DisT | Ing. Zuzana Repická, PhD. Relation between composition, structure and properties of complexes with bioactive ligands | doc. Ing. Dušan Valigura, CSc. |
| DisT | Ing. Silvia Štefániková Thiocyanate ironcomplexes with N-donor ligands | doc. Ing. Iveta Ondrejkovičová, PhD. |

Selected publications

Journals

Current Contents Publications

- ADC1 Bienko, Alina [15%] - Suracka, Katarzyna [15%] - Mrozinski, Jerzy [10%] - Kruszynski, Rafal [10%] - Bienko, Dariusz [15%] - Wojciechowska, Agnieszka [15%] - **Boča, Roman** [20%]: A heterobimetallic cyanide-bridged Cu II Fe III Cu II trimer. Synthesis, crystal structure and magnetic properties. - , 2010.
 In: Polyhedron. - ISSN 0277-5387. - Vol. 29, Iss. 12 (2010), s. 2546-2552
- ADC2 **Boča, Roman** [25%] - **Šalitroš, Ivan** [25%] - Kožíšek, Jozef [20%] - Linares, Jorge [5%] - **Moncol, Ján** [20%] - Renz, Franz [5%]: Spin crossover in a heptanuclear mixed-valence iron

- complex. - , 2010.
In: Dalton Transactions. - ISSN 1477-9226. - Vol. 39, Iss. 9 (2010), s. 2198-2200
- ADC3 Fargašová, Agáta [40%] - **Ondrejkovičová, Iveta** [20%] - Kramarová, Zuzana [20%] - Fáberová, Zuzana [20%]: Changes in physiological activity of algae Desmodesmus quadricauda after active bioaccumulation of newly prepared and characterized Fe(II) complexes with pyridine-3-carboxamide (pca) by living algal cells. - , 2010.
In: Bioresource Technology. - ISSN 0960-8524. - Vol. 101, Iss. 16 (2010), s. 6410-6415
- ADC4 Findoraková, Lenka [20%] - Gyoryová, Katarína [20%] - **Koman, Marián** [20%] - **Moncoľ, Ján** [20%] - **Melník, Milan** [20%]: Crystal Structure and Physical Characterisation of [Zn-2(Benzoato)(4)(Caffeine)(2)]center dot 2 Caffeine. - , 2010.
In: Journal of Chemical Crystallography. - ISSN 1074-1542. - Vol. 40, Iss. 2 (2010), s. 145-150
- ADC5 Findoráková, Lenka [30%] - Gyoryová, Katarína [25%] - **Melník, Milan** [20%] - **Koman, Marián** [20%] - Nour El-Dien, Fatem A. [5%]: Preparation, thermal decomposition, and crystal structure of Zn(II)2-chlorobenzoate complex with nicotinamide.
In: Journal of Coordination Chemistry. - ISSN 0095-8972. - Vol. 63, Iss. 19 (2010), s. 1093-1102
- ADC6 Gemzická, Eva [50%] - **Šíma, Jozef** [25%] - Vrška, Milan [20%] - Holeš, Martin [5%]: Effect of pH and washing on calcium and magnesium distribution between pulp and filtrate.
In: Chemical Papers. - ISSN 0366-6352. - Vol. 64, iss. 6 (2010), s. 741-748
- ADC7 Jakab, Noemi Ida [5%] - **Vasková, Zuzana** [20%] - **Moncoľ, Ján** [20%] - Gyurcsik, Béla [5%] - **Šíma, Jozef** [20%] - **Koman, Marián** [10%] - **Valigura, Dušan** [20%]: Ternary complex formation of copper(II) with 5-fluorosalicylate and 3-pyridylmethanol in aqueous solutions and solid state. - , 2010.
In: Polyhedron. - ISSN 0277-5387. - Vol. 29, Iss. 11 (2010), s. 2262-2268
- ADC8 Kopel, Pavel [15%] - Mrozinski, Jerzy [15%] - Doležal, Karel [15%] - Langer, Vratislav [15%] - **Boča, Roman** [15%] - Bienko, Alina [15%] - Pochaba, Andrzej [10%]: Ferromagnetic Properties of a Trinuclear Nickel(II) Complex with a Trithiocyanurate Bridge. - , 2009.
In: European journal of inorganic chemistry. - Weinheim : Wiley-VCH. - ISSN 1434-1948. - Iss. 36. - , 2009, s. 5475-5482
- ADC9 Lajdová, Ľ. [20%] - Jóna, Eugen [15%] - Miklovič, Jozef [15%] - **Segľa, Peter** [15%] - Kvasnicová, Ľ. [4%] - Šnircová, S. [15%] - Janík, R. [15%] - Mojumdar, Subhash Chandra [1%]: Thermal properties of solid complexes with biologically important heterocyclic ligands: Part II. Stoichiometry of thermal decomposition and infrared spectra of thiocyanatocobalt(II) complexes with furopyridine and fuopyridine derivatives.
In: Journal of Thermal Analysis and Calorimetry. - ISSN 1388-6150. - Vol. 100, Iss. 3 (2010), s. 857-860
- ADC10 Medvecká, Jana [15%] - **Vasková, Zuzana** [15%] - **Maroszová /Macková, Jaroslava** [15%] - **Moncoľ, Ján** [15%] - **Koman, Marián** [10%] - Lis, Tadeusz [5%] - Mazúr, Milan [10%] - **Valigura, Dušan** [15%]: One-Dimensional and Two-Dimensional Coordination Polymers of Copper(II) Nitrobenzoate with Bridging 3-Pyridylmethanol Ligand. - , 2010.
In: Zeitschrift für anorganische und allgemeine Chemie. - ISSN 0044-2313. - Vol. 636, Iss. 3-4 (2010), s. 589-594
- ADC11 **Moncoľ, Ján** [35%] - **Vasková, Zuzana** [20%] - **Stachová, Petra** [5%] - Sillanpää, Reijo [5%] - Mazúr, Milan [10%] - **Valigura, Dušan** [25%]: Self-Assembled Hydrogen-bonding Chains of Copper(II) 2-Nitrobenzoate with Nicotinamide. - , 2010.
In: Journal of Chemical Crystallography. - ISSN 1074-1542. - Vol. 40, Iss. 2 (2010), s. 179-184
- ADC12 **Ondrejovič, Gregor** [25%] - **Kotočová, Adela** [25%] - **Koman, Marián** [25%] - **Segľa, Peter** [25%]: Synthesis, spectral and electrochemical study of coordination molecules Cu₄O_X₆L₄: 3-cyanopyridine Cu₄OBr (n) Cl(6-n)(3-CNpy)(4) complexes. - , 2010.
In: Chemical Papers. - ISSN 0366-6352. - Vol. 64, Iss. 3 (2010), s. 339-345
- ADC13 **Ondrejovič, Gregor** [25%] - **Kotočová, Adela** [25%] - **Koman, Marián** [25%] - **Segľa, Peter** [25%]: Synthesis, spectral and electrochemical study of coordination molecules Cu₄O_X₆L₄: 4-cyanopyridine Cu₄OBr (n) Cl(6-n)(4-CNpy)(4) complexes. - , 2010.
In: Chemical Papers. - ISSN 0366-6352. - Vol. 64, Iss. 3 (2010), s. 329-338
- ADC14 **Papáňková, Blažena** [20%] - **Boča, Roman** [15%] - **Dlháň, Ľubor** [15%] - **Nemec, Ivan** [20%] - **Titiš, Ján** [20%] - Svoboda, Ingrid [5%] - Fuess, Hartmut [5%]: Magneto-structural relationships for a mononuclear Co(II) complex with large zero-field splitting. - , 2010.

- In: *Inorganica Chimica Acta*. - Lausanne : Elsevier. - ISSN 0020-1693. - Vol. 363, Iss. 1. - , 2010, s. 147-156
- ADC15 **Repická (Púčeková), Zuzana** [20%] - **Moncoľ, Ján** [20%] - **Puchňová, Miroslava** [20%] - **Jorík, Vladimír** [5%] - **Mikloš, Dušan** [5%] - Lis, Tadeusz [5%] - Padělková, Zdenka [5%] - Mazúr, Milan [10%] - **Valigura, Dušan** [10%]: [Cu(X-salicylato)2(N,N-diethylnicotinamide)2(H₂O)₂]complexes: conformational polymorphism and its consequence in supramolecular hydrogen-bonding networks formation.
In: *Structural Chemistry*. - ISSN 1040-0400. - Vol. 21, Iss. 5 (2010), s. 1093-1102
- ADC16 Semenaka, Valentyna V. [20%] - Nesterova, Oksana V. [15%] - Dyakonenko, Viktoriya V. [15%] - Shishkin, Oleg V. [15%] - **Boča, Roman** [20%] - Jezierska, Julia [15%]: An extremely rare example of asymmetric tetranuclear core {M-4(mu(3)-X)(2)(mu-X)(4)} in a novel alkoxo-bridged heterometallic Cr/Cd complex. - , 2010.
In: *Dalton Transactions*. - ISSN 1477-9226. - Vol. 39, Iss. 7 (2010), s. 1734-1739
- ADC17 Semenaka, Valentyna V. [10%] - Nesterova, Oksana V. [10%] - Kokozay, Volodymyr N. [10%] - Dyakonenko, Viktoriya V. [10%] - Zybatyuk, Roman I. [10%] - Shishkin, Oleg V. [10%] - **Boča, Roman** [20%] - Jezierska, Julia [10%] - Ozarowski, Andrew [10%]: Cr-III-Cr-III Interactions in Two Alkoxo-Bridged Heterometallic Zn₂Cr₂ Complexes Self-Assembled from Zinc Oxide, Reinecke's Salt, and Diethanolamine. - , 2010.
In: *Inorganic Chemistry*. - ISSN 0020-1669. - Vol. 49, Iss. 12 (2010), s. 5460-5471
- ADC18 Semenaka, Valentyna V. [15%] - Nesterova, Oksana V. [10%] - Zybatyuk, Roman I. [10%] - Shishkin, Oleg V. [10%] - **Boča, Roman** [25%] - Shevchenko, Denys V. [10%] - Huang, Ping [10%] - Styring, Stenbjorn [10%]: Direct synthesis of an heterometallic {MnII₃CrIII₄} wheel by decomposition of Reineckes salt. - , 2010.
In: *Dalton Transactions*. - ISSN 1477-9226. - Vol. 39, Iss. 9 (2010), s. 2344-2349
- ADC19 Semenaka, Valentyna V. [15%] - Nesterova, Oksana V. [10%] - Kokozay, Volodymyr N. [10%] - Zybatyuk, Roman I. [10%] - Shishkin, Oleg V. [10%] - **Boča, Roman** [15%] - Gomez-Garcia, Carlos J. [10%] - Clemente-Juan, Juan M. [10%] - Jezierska, Julia [10%]: Structural and magnetic studies of tetranuclear heterometallic M/Cr (M = Co, Mn) complexes self-assembled from zerovalent cobalt or manganese, Reineckes salt and diethanolamine Structural and magnetic studies of tetranuclear heterometallic M/Cr (M = Co, Mn) complexes self-assembled from zerovalent cobalt or manganese, Reineckes salt and diethanolamine. - , 2010.
In: *Dalton Transactions*. - ISSN 1477-9226. - Vol. 39, Iss. 4 (2010), s. 1326-1336
- ADC20 Semenaka, Valentyna V. [15%] - Nesterova, Oksana V. [10%] - Kokozay, Volodymyr N. [10%] - Zybatyuk, Roman I. [10%] - Shishkin, Oleg V. [10%] - **Boča, Roman** [15%] - Gomez-Garcia, Carlos J. [10%] - Clemente-Juan, Juan M. [10%] - Jezierska, Julia [10%]: Structural and magnetic studies of tetranuclear heterometallic M/Cr (M=Co,Mn) complexes self-assembled from zerovalent cobalt or manganese, Reineckes salt and diethanolamine. - , 2010.
In: *Polyhedron*. - ISSN 0277-5387. - Vol. 29, Iss. 4 (2010), s. 1326-1336
- ADC21 Smiešková, Agáta [40%] - Hudec, Pavol [30%] - Kumar, Narendra [10%] - Salmi, Tapio [5%] - Murzin, Dmitry Yu. [5%] - **Jorík, Vladimír** [10%]: Aromatization of methane on Mo modified zeolites: Influence of the surface and structural properties of the carriers. - , 2010.
In: *Applied Catalysis A*. - ISSN 0926-860X. - Vol. 377, Iss. 1-2. - , 2010
- ADC22 **Šalitroš, Ivan** [20%] - **Pavlik, Ján** [20%] - **Boča, Roman** [20%] - Fuhr, Olaf [10%] - Rajadurai, Chandrasekar [10%] - Ruben, Mario [20%]: Supramolecular lattice-solvent control of iron(II) spin transition parameters. - , 2010.
In: *CrystEngComm*. - ISSN 1466-8033. - Vol. 12, Iss. 8 (2010), s. 2361-2368
- ADC23 Tarabová, Denisa [20%] - **Titiš, Ján** [10%] - Prónayová, Nadežda [10%] - Gatial, Anton [10%] - Krutošíková, Alžbeta [50%]: A study of [1]benzofuro[3,2-c]pyridine derivatives.
In: *Arkivoc*. - ISSN 1551-7004. - 2010, Part 9 (2010), s. 269-281
- ADC24 **Vasková, Zuzana** [25%] - **Moncoľ, Ján** [20%] - Korabík, Maria [5%] - **Valigura, Dušan** [20%] - **Švorec, Jozef** [10%] - Lis, Tadeusz [5%] - Valko, Marián [10%] - **Melník, Milan** [5%]: Supramolecular dimer formation through hydrogen bond extensions of carboxylate ligands ? Path for magnetic exchange. - , 2010.
In: *Polyhedron*. - Oxford : ?ABCDE? ; New York : Pergamon Press. - ISSN 0277-5387. - Vol. 29, Iss. 1. - , 2010, s. 154-163

Other Publications

- ADF1 **Medvecká, Jana** [30%] - **Moncoľ, Ján** [20%] - **Jorík, Vladimír** [20%] - **Valigura, Dušan** [30%]: Crystallosolvate Formation in Copper(II) 4-Nitrobenzoate Complex Systems. - , 2010.
In: Acta Chimica Slovaca. - ISSN 1337-978X. - Vol. 3, No. 1 (2010), s. 73-80
- ADF2 **Repická (Púčeková), Zuzana** [30%] - Krupková, Lenka [20%] - Korabik, Maria [5%] - **Moncoľ, Ján** [15%] - Hudecová, Daniela [15%] - **Valigura, Dušan** [15%]: Bis(5-Me(O)salicylato)copper(II) Complexes with/without Diethylnicotinamide - Preparation, Structure and Properties. - , 2009.
In: Acta Chimica Slovaca. - : STU v Bratislave. - ISSN 1337-978X (http://www.acs.chtf.stuba.sk/). - Vol. 2, No. 2. - , 2009, s. 60-70
- AED1 **Jokrllová, Jana** [60%] - **Moncoľ, Ján** [20%] - **Valigura, Dušan** [20%]: Bipyridín manganaté komplexy s 3,5-dinitrosalicylátovými aniónmi.
In: Študentská vedecká konferencia, 28. apríl 2010, Bratislava : Zborník recenzovaných príspevkov. - : Univerzita Komenského Bratislava, Prírodovedecká fakulta, 2010. - ISBN 978-80-223-2819-7. - S. 683-685
- AED2 **Kišacová, Alena** [60%] - **Moncoľ, Ján** [20%] - **Valigura, Dušan** [20%]: 3-Nitrobenzoátomanganaté komplexy s dusíkatými chelátujúcimi ligandami.
In: Študentská vedecká konferencia, 28. apríl 2010, Bratislava : Zborník recenzovaných príspevkov. - : Univerzita Komenského Bratislava, Prírodovedecká fakulta, 2010. - ISBN 978-80-223-2819-7. - S. 719-724
- AED3 **Kuchtanín, Vladimír** [70%] - **Mikloš, Dušan** [10%] - **Moncoľ, Ján** [10%] - **Segľa, Peter** [10%]: Štúdium štruktúry a spektrálnych vlastností heterocyklických karboxylátomed'natých komplexov s 3- a 4- hydroxymetylpyridínom.
In: Študentská vedecká konferencia, 28. apríl 2010, Bratislava : Zborník recenzovaných príspevkov. - : Univerzita Komenského Bratislava, Prírodovedecká fakulta, 2010. - ISBN 978-80-223-2819-7. - S. 702-707
- AED4 **Nemec, Ivan** [60%] - Herchel, Radovan [10%] - **Pavlík, Ján** [40%]: Spinový prechod v komplexoch Fe(III). Vplyv medzimolekulových interakcií.
In: Študentská vedecká konferencia, 28. apríl 2010, Bratislava : Zborník recenzovaných príspevkov. - : Univerzita Komenského Bratislava, Prírodovedecká fakulta, 2010. - ISBN 978-80-223-2819-7. - S. 847-852
- AED5 **Puchoňová, Miroslava** [50%] - **Repická (Púčeková), Zuzana** [50%]: Metyl- a metoxysalicylátomed'naté komplexy s N,N-dietylnikotínamidom.
In: Študentská vedecká konferencia, 28. apríl 2010, Bratislava : Zborník recenzovaných príspevkov. - : Univerzita Komenského Bratislava, Prírodovedecká fakulta, 2010. - ISBN 978-80-223-2819-7. - S. 736-740

Published Conference Contributions

- AFA1 **Boča, Roman** [100%]: Magnetic based upn coordination compounds. - , 2010.
In: Chemické listy. - Praha : Česká společnost chemická. - ISSN 0009-2770 (http://www.uochb.cas.cz/ChemListy/chemlisty.html). - Vol. 104, Iss. 6. - , 2010, s. 403-404
- AFC1 **Koman, Marián** [50%] - **Ondrejovič, Gregor** [50%]: Vplyv röntgenovej štruktúrnej analýzy na rozvoj koordinačnej chémie. - , 2010.
In: Materials Structure in Chemistry, Biology, Physics and Technology. - ISSN 1211-5894. - Vol. 17, No. 2a : Struktura 2010. Kolokvium Krystalografické spoločnosti. Soláň 14.6. - 17.6.2010. - , 2010, k61-k62
- AFD1 **Martiška, Ladislav** [30%] - **Repická (Púčeková), Zuzana** [20%] - Husáriková, Lucia [20%] - **Valigura, Dušan** [10%] - Valko, Marián [10%] - Mazúr, Milan [10%]: Copper complexes with biologically active ligands: An EPR spectroscopy study. - , 2010.
In: 2nd International Workshop on Physical Chemistry and Material Physics, June 1-4, 2010, Častá-Papiernička. - : STU v Bratislave, 2010. - ISBN 978-80-227-3306-9. - S. 35-36
- AFD2 Tarabová, Denisa [15%] - Šteinerová, Lucia [10%] - Vojteková, Marianna [10%] - **Titiš, Ján** [15%] - Prónayová, Nadežda [10%] - Gatial, Anton [10%] - Krutošíková, Alžbeta [30%]: Reactions of 1-chloro[1]benzofuro[3,2-c]pyridine. - , 2009.
In: Applied natural Sciences 2009 : Proceedings. - : Univerzita sv. Cyrila a Metoda v Trnave, 2009. - ISBN 978-80-8105-129-6. - S. 223-229
- AFG1 **Boča, Roman** [100%]: Thermally Induced Single-Molecule magnetism.
In: ICMM 2010, The 12th International Conference on Molecule-Based Magnets, Beijing, China, October 8-12, 2010 : Abstracts. - , 2010. - PA-020

- AFG2 Hudec, Pavol [35%] - Hudá, Mária [20%] - Horňáček, Michal [20%] - **Jorík, Vladimír** [15%] - Smiešková, Agáta [10%]: Influence of Mordenite Desilication on Resistance against Coking. - , 2010.
In: 16th International Zeolite Conference joint with the 7th International Mesostructured Materials Symposium, Sorento, Italy, July 4-9, 2010. - : A. De Frede, Napoli, Italy, 2010. - ISBN 978-88-89976-29-6. - S. 131-132
- AFG3 Plánkáné Szabó, Terézia [10%] - Gyurcsik, Béla [10%] - Pálinkó, István [10%] - Nagy, Nóna [10%] - Rockenbauer, Antal [10%] - **Šípoš, Rastislav** [20%] - **Šima, Jozef** [20%] - **Melník, Milan** [10%]: A szubstituens helyzetének hatása a fluoro-szalicilsavak koordinációs képességére Cu(II)-ionokkal.
In: 45. Komplexkémiai Kollokvium és az MTA Koordinációs Kémiai , máj 26-28, 2010, Mátraháza. - , 2010. - S. 25
- AFG4 **Šima, Jozef** [100%]: Photochemical properties of individual species in systems of kinetically labile complexes.
In: 45. Komplexkémiai Kollokvium és az MTA Koordinációs Kémiai , máj 26-28, 2010, Mátraháza. - , 2010. - S. 28
- AFH1 **Koman, Marián** [60%] - **Moncoľ, Ján** [20%] - **Maroszová /Macková, Jaroslava** [20%]: Štruktúrna variabilita pyridylmetanoláto-međnatých komplexov.
In: Anorganická chémia v treťom tisícročí, seminár, 3.-6.6. 2010, Štrbské Pleso. - : Univerzita Pavla Jozefa Šafárika v Košiciach, 2010. - S. 19-20

Books

- ABA1 **Melník, Milan** [50%]- **Ondrejkovičová, Iveta** [25%]- **Koman, Marián** - Holloway, C.E. [25%]: Crystallographic and structural analysis of iron heterometallic compounds : Part IV. Heterometameric compounds. - , 2010.
In: Reviews in Inorganic Chemistry. - London : Freund ; New York : John Wiley & Sons. - ISSN 0193-4929. - Vol. 30, No. 1-2. - , 2010, s. 1-112
- ACB1 **Ondrejkovičová, Iveta** [20%]- **Izakovič, Mário** [20%]- **Mašlejová, Anna** [20%] - **Papánková, Blažena** [20%]- **Tatarko, Miroslav** [20%]: Anorganická chémia : Praktikum. - : STU v Bratislave, 2010. - 237 s. - ISBN 978-80-227-3291-8

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Projects

National project

Project Code: 28106
 Title (sl.): Výskum technológií spracovania dolomitu a magnezitu
 Title (eng.): Investigation of treatment technologies of dolomite and magnesite
 Project duration: 01.08.2008 - 01.12.2010
 Responsible person: **Fellner Pavel, prof. Ing., DSc.**

APVV

Project Code: APVV-0203-07
Title (sl.): Výskum technológií spracovania dolomitu a magnezitu na hydroxid horečnatý, oxid horečnatý a uhličitan vápenatý.
Title (eng.): Development of technology for production of magnesium hydroxide, magnesium oxide and calcium carbonate from dolomite and magnesite.
Project duration: 01.06.2008 - 31.12.2010
Responsible person: **prof. Ing. Pavel Fellner, DSc.**

APVV

Project Code: VMSP-P-0088-09
Title (sl.): Využitie odpadového vápenného mlieka z výroby acetylénu na výrobu zrážaného uhličitanu vápenatého pre priemyselné aplikácie.
Title (eng.): Application of waste whitewash from acetylene production. Production of precipitated calcium carbonate for industrial use
Project duration: 01.09.2009 - 31.08.2011
Responsible persons: **Ing. Juraj Gigac, PhD. , prof. Ing. Pavel Fellner, DSc.**

APVV

Project Code: SK-UA-0034-09
Title (sl.): Pokovovanie prírodných a syntetických diamantov molybdénom, volfrámom a ich karbidmi z iónových tavenín
Title (eng.): Metallization of nature and synthetic diamonds by molybdenum, tungsten and their carbides from ionic melts
Project duration: 01.01.2009 - 31.12.2010
Responsible persons: **doc. Ing. Vladimír Danielík, PhD.**

VEGA

Project Code: 1/0535/08
Title (sl.): Elektrolytické vylúčovanie kovov pulzným prúdom.
Title (eng.): Electrolytic deposition of metals by pulse current
Project duration: 01.01.2008 - 31.12.2010
Responsible person: **prof. Ing. Pavel Fellner, DSc.**

VEGA

Project Code: 1/0579/10
Title (sl.): Elektrochémia železanov v prostredí roztavených solí
Title (eng.): Electrochemistry of Ferrates(VI) in molten salt environment
Project duration: 01.01.2010 - 31.12.2012
Responsible person: **prof. Ing. Ján Híveš, PhD.**

Bachelor (BT), diploma (DT) and dissertation (DissT) theses

| Type | Final Thesis | Supervisor |
|------|--|----------------------------------|
| BT | Bc. Tomáš Foltinovič Electrochemical ferrates(VI) production in the molten hydroxide melt | prof. Ing. Ján Híveš, PhD. |
| DT | Ing. Robert Kurinec Alloy Ni-W coatings prepared by pulse technique | doc. Ing. Matilda Zemanová, PhD. |

| | | |
|----|---|----------------------------|
| DT | Ing. Bronislav Novák Electrochemical oxidation of iron in the melts | prof. Ing. Ján Híveš, PhD. |
| DT | Ing. Jana Sklenárová Solubility of Mg(OH) ₂ in solutions containing ammonia compounds | Ing. Jana Jurišová, PhD. |

Selected publications

Journals

Current Contents Publications

- ADC1 **Danielik, Vladimír [35%] - Fellner, Pavel [30%] - Sýkorová, Alexandra [30%]** - Thonstad, Jomar [5%]: Solubility of Aluminium in Cryolite-Based Melts. - , 2010.
In: Metallurgical and materials transactions. B. Process metallurgy. - Metals Park : A.S.M. INTERNATIONAL. - ISSN 1073-5615. - Vol. 41, Iss. 2. - , 2010, s. 430-436
- ADC2 Gál, Miroslav [50%] - **Híveš, Ján [10%]** - Sokolová, Romana [10%] - Hromadová, Magdaléna [10%] - Kolivoška, Viliam [10%] - Pospíšil, Lubomír [10%]: Impedance study of hypoxic cells radiosensitizer etanidazole radical anion in water. - , 2009.
In: Collection of Czechoslovak Chemical Communications. - Praha : Akademie věd ČR. - ISSN 0010-0765. - Vol. 74, Iss. 11-12. - , 2009, s. 1571-1581
- ADC3 Gál, Miroslav [40%] - Hromadová, Magdaléna [10%] - Pospíšil, Lubomír [10%] - **Híveš, Ján [10%]** - Sokolová, Romana [10%] - Kolivoška, Viliam [10%] - Bulíčková, Jana [10%]: Voltammetry of hypoxic cells radiosensitizer etanidazole radical anion in water. - , 2010.
In: Bioelectrochemistry. - ISSN 1567-5394. - Vol. 78, Iss. 2 (2010), s. 118-123
- ADC4 **Zemanová, Matilda [45%] - Krivdová, Patrícia [45%]** - Valtýni, Ján [10%]: Periodic reverse current electrodeposited nickel anodised aluminium.
In: Transactions of the Institute of Metal Finishing. - ISSN 0020-2967. - Vol. 88, No. 5 (2010), s. 266-270
- ADC5 **Zemanová, Matilda [40%] - Gál, Michal [40%]** - Ušák, Elemír [10%] - **Jurišová, Jana [10%]**: Pulse Nickel Electrolytic Colouring Process of Anodised Aluminium.
In: Journal of Applied Electrochemistry. - ISSN 0021-891X. - Vol. 40, Iss. 5 (2010), s. 981-988
- ADD1 **Ambrová, Marta [70%] - Fellner, Pavel [15%]** - Thonstad, Jomar [15%]: Anodic Reactions of Sulphate in Molten Salts.
In: Chemical Papers – ISSN 0366-6352 - Vol. 64, Iss. 1 (2010), s. 8-14.

Other Publications

- ADF1 **Fellner, Pavel [34%]** - Smrková, Eva [33%] - Pach, Ladislav [33%]: Influence of admixtures and of mixing on precipitation of Mg(OH)₂ from nitrate solution. - , 2009.
In: Acta Chimica Slovaca. - : STU v Bratislave. - ISSN 1337-978X (<http://www.acs.chtf.stuba.sk/>). - Vol. 2, No. 2. - , 2009, s. 14-20
- ADF2 **Fellner, Pavel [34%]** - Smrková, Eva [33%] - Pach, Ladislav [33%]: Influence of admixtures and of mixing on precipitation of Mg(OH)₂ from nitrate solution. - , 2009.
- ADF3 **Zemanová, Matilda [40%] - Chovancová, Marta [20%]** - Čech, Juraj [40%]: Vplyv časového priebehu prúdu na kvalitu vyfarbovania anodicky oxidovaného hliníka. - , 2009.
In: Transfer inovácií. - Košice : Inovačné centrum automobilovej výroby. - ISSN 1337-7094 (<http://www.sjf.tuke.sk/transferinovacii/>). - Č. 15. - , 2009, s. 197-201

Published Conference Contributions

- AFC1 **Fellner, Pavel [20%] - Híveš, Ján [20%] - Jurišová, Jana [20%]** - Králik, Milan [20%] - Pach, Ladislav [20%]: Preparation of magnesium hydroxide as filler for polymers. - 9 s.

- In: CHISA 2010, ECCE 7, 19th International Congress of Chemical and Process Engineering, Prague : Full Texts. - : Orgit s.r.o., 2010. - ISBN 978-80-02-02210-7. - nestr.
- AFC2 Gál, Miroslav [30%] - **Híveš, Ján** [20%] - Sokolová, Romana [10%] - Hromadová, Magdaléna [10%] - Bulíčková, Jana [10%] - Kolivoška, Viliam [10%] - Pospíšil, Lubomír [10%]: Electrochemistry of Selected Radiosensitizer-Etanidazole.
In: Moderní elektrochemické metody, Sborník přednášek z XXX. mezinárodní odborné konference, Jetřichovice, ČR, 24.-28.5.2010. - , 2010. - ISBN 978-80-254-6710-7. - S. 55-59
- AFC3 **Híveš, Ján** [60%] - **Kerekeš, Kamil** [10%] - **Kamenár, Ján** [10%] - Bouzek, Karel [10%] - Mácová, Zuzana [10%]: Transpassive anodic dissolution of Si rich Fe electrode in molten salt. - 6 s.
In: CHISA 2010, ECCE 7, 19th International Congress of Chemical and Process Engineering, Prague : Full Texts. - : Orgit s.r.o., 2010. - ISBN 978-80-02-02210-7. - nestr.
- AFC4 Pach, Ladislav [20%] - **Fellner, Pavel** [20%] - **Híveš, Ján** [20%] - **Jurišová, Jana** [20%] - Králik, Milan [20%]: Skúmanie procesu vzniku zrážaného Mg(OH)₂ meraním vodivosti systému.
In: Aprochem 2010, 19.-21.4.2010, Kouty nad Desnou, ČR. - : Vysoká škola chemicko-technologická v Praze, 2010. - ISBN 978-80-02-02212-1. - S. 2220-2224
- AFC5 **Zemanová, Matilda** [45%] - **Krivosudská, Margaréta** [45%] - **Chovancová, Marta** [10%]: Corrosion properties of electrodeposited Ni-W alloy coatings. - 5 s.
In: CHISA 2010, ECCE 7, 19th International Congress of Chemical and Process Engineering, Prague : Full Texts. - : Orgit s.r.o., 2010. - ISBN 978-80-02-02210-7. - nestr.
- AFC6 **Zemanová, Matilda** [45%] - Cocural, Marie [45%] - Valtýni, Ján [10%]: Potentodynamic polarization of zinc electrodeposited coatings.
In: Corrosion and Metal Protection, 2nd International Conference, Prague, 19.-22. April, 2010. - , 2010. - ISBN 978-80-90393-6-3. - nestr.
- AFD1 **Hrnčiariková, Lucia** [30%] - **Híveš, Ján** [30%] - **Foltinovič, Tomáš** [20%] - **Kamenár, Ján** [20%]: Elektrochemické správanie sa železa vo vysokom oxidačnom stupni.
In: 52. medzinárodná galvanická konferencia : Zborník prednášok. Kočovce, 15.-16. jún 2010. - Bratislava : STU, 2010. - ISBN 978-80-227-3315-1. - S. 55-61
- AFD2 **Zemanová, Matilda** [30%] - **Krivosudská, Margaréta** [30%] - **Kurinec, Robert** [30%] - Kadlecíková, Magdaléna [5%] - **Chovancová, Marta** [5%]: Potenciodynamická polarizácia zliatinových Ni-W povlakov.
In: 52. medzinárodná galvanická konferencia : Zborník prednášok. Kočovce, 15.-16. jún 2010. - Bratislava : STU, 2010. - ISBN 978-80-227-3315-1. - S. 24-29
- AFD3 **Zemanová, Matilda** [40%] - **Krivosudská, Margaréta** [30%] - Lachambre, Antoine [30%]: Zliatinové povlaky nikel wolfrám.
In: Korózia v energetike 2010.Corrosion in power industry 2010 : Zborník 21. medzinárodnej konferencie.Košice,SR,25.-26.5.2010. - Košice : Technická univerzita v Košiciach, 2010. - ISBN 978-80-553-0412-0. - S. 85-90
- AFG1 **Híveš, Ján** [40%] - **Fellner, Pavel** [30%] - Thonstad, Jomar [30%]: Electrical conductivity and transference numbers in highly acidic cryolite-based melts. - , 2010.
In: EUCHEM 2010, Conference On Molten Salts and Ionic Liquides, March 14-19 2010, Germany. - : Dechema, 2010. - S. 52
- AFG2 Malyshev, V. [20%] - Gab, A. [20%] - Shakhnin, D. [20%] - **Fellner, Pavel** [20%] - **Danielik, Vladimír** [20%]: Industrial and Future Application of High-Temperature Electrochemical Synthesis in Ionic Melts.
In: EUCHEM 2010, Conference On Molten Salts and Ionic Liquides, March 14-19 2010, Germany. - : Dechema, 2010. - S. 66
- AFG3 **Zemanová, Matilda** [45%] - **Krividová, Patrícia** [45%] - **Fellner, Pavel** [5%] - **Chovancová, Marta** [5%]: Nickel pigmented alumina films. - 16 s.
In: 4th European Pulse Plating Seminar, Vienna, 5th March, 2010. - , 2010. - nestr.
- AFH1 Smrčková, Eva [75%] - **Gabčová, Jana** [15%] - **Fellner, Pavel** [10%]: VPLYV PRÍMESÍ NA PROCES ZRÁŽANIA Mg(OH)₂ : SLOVENSKÝ ČASOPIS O CHÉMII PRE CHEMICKÉ VZDELÁVANIE, VÝSKUM A PRIEMYSEL.
In: ChemZi - Chemické zvesti. - ISSN 1336-7242. - Roč. 5, č. 9 (2009), s. 151-152

Books

- ACB1 **Chovancová, Marta** [40%] - **Fellner, Pavel** [10%] - Špirk, Eugen [20%] - Hudec, Ivan [10%] - **Zemanová, Matilda** [10%] - **Híveš, Ján** [10%]: Základy korózie a povrchovej úpravy materiálov (Principles of corrosion and material surface treatment), Slovenská technická univerzita v Bratislave, 303 pages, 2010, ISBN 978-80-227-3378-6.

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Projects

VEGA

Project Code:

1/0571/08

Title (sl.):

Vplyv fosforečnanu trivápenatého a apatitov z alternatívnych palív na zloženie, štruktúru a reaktivitu slinkových minerálov a vlastnosti portlandského cementu.

Title (eng.):

Effects of tricalcium phosphate and apatites admixture on the composition, structure and reactivity of clinker minerals and on the properties of Portland

Project duration: cement
 Responsible person: 01.01.2008 - 31.12.2010
doc. Ing. Martin Palou, PhD.

VEGA

Project Code: 1/0460/10
 Title (sl.): Anorganické peny a nové keramické penové materiály.
 Title (eng.): Inorganic Foams and New Ceramic Foam Materials
 Project duration: 2010-2011
 Responsible person: **J. Lokaj**

VEGA

Project Code: 2/0076/10
 Title (sl.): Skelné a keramické materiály s priestorovo usporiadanou štruktúrou
 Title (eng.): Glasses and ceramic materials with dimensionally ordered structure
 Project duration: 2010-2011
 Responsible person: **Doc. Ing. Dušan Galusek, PhD.**

List of bachelor (BT), diploma (DT) and dissertation (DissT) theses

| Type | Final Thesis | Supervisor |
|------|--|---------------------------------------|
| BT | Bc. Michal Bačuvčík Determination of the presence of asbestos in building materials | Ing. Eva Smrková, CSc. |
| BT | Miloš Bršťák Utilisation of alternative raw materials and fuel for production of portland cement | doc. Dr. Ing. Martin Tchingnabé Palou |
| BT | Bc. Petra Filová Synthesis and characterisation of composite biomaterials for medical applications | doc. Dr. Ing. Martin Tchingnabé Palou |
| BT | Bc. Mária Krestianová In vitro study of bioactivity of biomaterials in dynamic and static regime | doc. Dr. Ing. Martin Tchingnabé Palou |
| DisT | Ing. Ľubomír Ježo, PhD. Possibility to replace clinker by other components | doc. Dr. Ing. Martin Tchingnabé Palou |
| DisT | Ing. Maha Salih Mohammed Noaman Preparation of (β -SiAlON) advanced ceramics for machinery applications | doc. Dr. Ing. Martin Tchingnabé Palou |
| DisT | Ing. Radovan Tóth, PhD. Characterization of Polymer Layered-Filler Nanocomposites by Molecular Modeling and Simulations | prof. Ing. Ján Lokaj, PhD. |

Selected publications**Journals****Current Contents Publications**

ADC1 Bureš, Filip [20%] - Kulhánek, Jiří [20%] - Mikysek, Tomáš [20%] - Ludvík, Jiří [20%] - **Lokaj, Ján** [20%]: Branched charge-transfer chromophores featuring a 4,5-dicyanoimidazole unit.

- In: Tetrahedron letters. - ISSN 0040-4039. - Vol. 51, Iss. 15 (2010), s. 2055-2058
- ADC2 **Ježo, Ľubomír** [30%] - **Palou, Martin Tchingnabé** [30%] - **Ifka, Tomáš** [20%] - **Kozáňková, Jana** [20%]: Determination of activation effect of Ca(OH)₂ upon the hydration of BFS and related heat by isothermal calorimeter.
In: Journal of Thermal Analysis and Calorimetry. - ISSN 1388-6150. - Vol. 101, Iss. 2 (2010), s. 585-593
- ADC3 **Ježo, Ľubomír** [30%], **Ifka, Tomáš** [20 %]-Cvopa, Branislava[10 %], Skundová, Janka[10 %]-**Kovár, Vladimír** [10%], **Palou, Martin Tchingnabé**[20%]: Effect of temperature upon the strength development rate and upon the hydration kinetics of cements. In: Ceramics – Silikáty. – ISSN 1804-5847 (online) . Vol 54, Iss.(3) (2010), s.269-276
- ADC4 **Bazelová, Zora** [50%] –**Pach, Ladislav** [25%] –**Lokaj, Ján** [25 %]: The effect of surface active substance concentration on the properties of foamed and non-foamed gypsum. In: Ceramics – Silikáty. – ISSN 1804-5847 (online) . Vol 54, Iss.(4) (2010), s. 379-385

Other Publications

- ADE1 Gelnar, Stanislav [50%] - **Smrčková, Eva** [50%]: Reakce vybraných sklářských surovin v tuhém stavu -I.
In: Sklář a keramik. - ISSN 0037-637X. - Roč. 60, č. 5-6 (2010), s. 108-112
- ADF1 Fellner, Pavel [34%] - **Smrčková, Eva** [33%] - **Pach, Ladislav** [33%]: Influence of admixtures and of mixing on precipitation of Mg(OH)₂ from nitrate solution. - , 2009.
In: Acta Chimica Slovaca. - : STU v Bratislave. - ISSN 1337-978X (<http://www.acs.chtf.stuba.sk/>). - Vol. 2, No. 2. - , 2009, s. 14-20
- ADF2 Fellner, Pavel [34%] - **Smrčková, Eva** [33%] - **Pach, Ladislav** [33%]: Influence of admixtures and of mixing on precipitation of Mg(OH)₂ from nitrate solution. - , 2009.
- ADF3 **Maha S. M., Noaman** [40%] - Lenčéš, Zoltán [10%] - **Vitkovič, Martin** [10%] - Gábrišová, Zuzana [10%] - **Palou, Martin Tchingnabé** [30%]: Comparison of two ?-SiAlON ceramics prepared from synthetic and natural raw materials. - , 2009.
In: Acta Chimica Slovaca. - : STU v Bratislave. - ISSN 1337-978X (<http://www.acs.chtf.stuba.sk/>). - Vol. 2, No. 2. - , 2009, s. 3-13

Published Conference Contributions

- AFC1 Fellner, Pavel [20%] - Híveš, Ján [20%] - Jurišová, Jana [20%] - Králik, Milan [20%] - **Pach, Ladislav** [20%]: Preparation of magnesium hydroxide as filler for polymers. - 9 s.
In: CHISA 2010, ECCE 7, 19th International Congress of Chemical and Process Engineering, Prague : Full Texts. - : Orgit s.r.o., 2010. - ISBN 978-80-02-02210-7. - nestr.
- AFC2 **Ježo, Ľubomír** [40%] - **Ifka, Tomáš** [40%] - Cvopa, Branislav [10%] - Škundová, Janka [10%]: Kinetika tuhnutia a tvrdnutia a pokus o jej kvantifikáciu v troch základných druhoch cementov CEM I, CEM II, CEM III pri rôznych teplotách.
In: Maltoviny 2009, VIII. odborná konferencia o vede, výskume a aplikáciach v odbore maltovín, 10.12. 2009, Brno. - : VUT v Brně, 2009. - ISBN 978-80-214-3995-5. - S. 66-77
- AFC3 **Ježo, Ľubomír** [40%] - **Ifka, Tomáš** [40%] - Cvopa, Branislav [10%] - Škundová, Janka [10%]: Pokus o kvantifikáciu aktivačnej energie troch základných druhov cementov a súvislosti s ich fyzikálno-mechanickými vlastnosťami pri rôznych teplotách.
In: Kvalita cementu 2010, IV.odborný seminár, 25.-26.3 2010, Hnanice u Znojma. - : Výskumný ústav stavebních hmot, 2010. - ISBN 978-80-87397-01-5. - S. 33-52
- AFC4 **Lutišanová, Gabriela** [67%] - **Palou, Martin Tchingnabé** [33%]: Influence of testing regime and fluorapatite upon the bioactivity of glass-ceramics. - 6 s.
In: Chemie a společnost 2009, Studentská odborná konference, 3.12.2009, Brno : Zborník príspevkov. - : VUT v Brně, 2009. - ISBN 978-80-214-3555-1. - nestr.
- AFC5 **Pach, Ladislav** [20%] - Fellner, Pavel [20%] - Híveš, Ján [20%] - Jurišová, Jana [20%] - Králik, Milan [20%]: Skúmanie procesu vzniku zrážaného Mg(OH)₂ meraním vodivosti systému.
In: Aprochem 2010, 19.-21.4.2010, Kouty nad Desnou, ČR. - : Vysoká škola chemicko-

- technologická v Praze, 2010. - ISBN 978-80-02-02212-1. - S. 2220-2224
- AFC6 **Palou, Martin Tchingnabé** [60%] - **Ifka, Tomáš** [40%]: Perspektíva a možnosti výroby sulfoaluminátových belitových cementov.
In: Kvalita cementu 2010, IV. odborný seminár, 25.-26.3 2010, Hnanice u Znojma. - : Výskumný ústav stavebních hmot, 2010. - ISBN 978-80-87397-01-5. - S. 3-11
- AFC7 **Palou, Martin Tchingnabé** [40%] - **Jamnický, Miroslav** [10%] - **Ifka, Tomáš** [30%] - **Kovář, Vladimír** [10%] - **Smrčková, Eva** [10%]: Vplyv fosforečnanov vápenatých na reaktivitu cementárskej surovínovej múčky.
In: Maltoviny 2009, VIII. odborná konferencia o vede, výskume a aplikáciach v odbore maltovín, 10.12. 2009, Brno. - : VUT v Brne, 2009. - ISBN 978-80-214-3995-5. - S. 105-113
- AFD1 Jantová, Soňa [40%] - Matejov, Patrik [20%] - **Čopan, Peter** [20%] - Bakoš, Dušan [20%]: Biologická aktivita nitridu kremíka v *in vitro* podmienkach.
In: Príemyselná toxikológia 2010, 30. vedecke sympózium, 16.-18.júna 2010, Svit, SR. - : Slovenská spoločnosť priemyselnej chémie, 2010. - ISBN 978-80-969710-6-0. - S. 265-271
- AFD2 **Kozánková, Jana** [100%]: Použitie rastovacej elektrónovej mikroskopie pri štúdiu silikátových materiálov. - 6 s.
In: SILITECH 2010, VIII. celoštátny odborný seminár, 28.05.2010, Gabčíkovo : Zborník príspevkov. - : FCHPT STU, 2010. - ISBN 978-80-227-3299-4. - nestr.
- AFD3 **Lokaj, Ján** [100%]: Možnosti röntgenovej mikroanalýzy a AFM (Atomic Force Microscopy). - 10 s.
In: SILITECH 2010, VIII. celoštátny odborný seminár, 28.05.2010, Gabčíkovo : Zborník príspevkov. - : FCHPT STU, 2010. - ISBN 978-80-227-3299-4. - nestr.
- AFD4 **Lutišanová, Gabriela** [50%] - **Palou, Martin Tchingnabé** [25%] - **Kozánková, Jana** [25%]: Apatite-layer formation on glass ceramics.
In: International Doctoral Seminar 2010 : Proceeding. Smolenice, 16-19 May 2010. - Trnava : AlumniPress, 2010. - ISBN 978-80-8096-118-3. - S. 334-338
- AFD5 **Lutišanová, Gabriela** [67%] - **Palou, Martin Tchingnabé** [33%]: Biomaterály: Hodnotenie bioaktivity *in vitro* v statickom a dynamickom režime. - 6 s.
In: SILITECH 2010, VIII. celoštátny odborný seminár, 28.05.2010, Gabčíkovo : Zborník príspevkov. - : FCHPT STU, 2010. - ISBN 978-80-227-3299-4. - nestr.
- AFD6 **Lutišanová, Gabriela** [36%] - **Kuzielová, Eva** [16%] - **Palou, Martin Tchingnabé** [16%] - **Kozánková, Jana** [16%] - Labuda, Ján [16%]: Preliminary comparison static and dynamic *in vitro* test of bioactivity of glass-ceramics. - , 2009. - 6 s.
In: 2nd International Symposium on Applied Science in Biomedical and Communication Technologies, 24.-27. November, 2009 : Proceedings. - ISBN 978-1-4244-4641-4. - nestr.
- AFD7 **Palou, Martin Tchingnabé** [60%] - **Ifka, Tomáš** [10%] - **Jamnický, Miroslav** [10%] - **Smrčková, Eva** [10%] - **Kovář, Vladimír** [10%]: Cement a jeho budúcnosť. - 11 s.
In: SILITECH 2010, VIII. celoštátny odborný seminár, 28.05.2010, Gabčíkovo : Zborník príspevkov. - : FCHPT STU, 2010. - ISBN 978-80-227-3299-4. - nestr.
- AFD8 **Smrčková, Eva** [67%] - **Bačuvčík, Michal** [33%]: Aplikácia RTG a REM pri preukazovaní prítomnosti azbestu v stavebných materiáloch. - 10 s.
In: SILITECH 2010, VIII. celoštátny odborný seminár, 28.05.2010, Gabčíkovo : Zborník príspevkov. - : FCHPT STU, 2010. - ISBN 978-80-227-3299-4. - nestr.
- AFG1 **Lutišanová, Gabriela** [40%] - **Palou, Martin Tchingnabé** [20%] - **Kozánková, Jana** [20%] - **Bazelová, Zora** [20%]: Mechanism of hydroxyapatite formation on the surface of glass-ceramics in LiO₂-SiO₂-CaO-P₂O₅-CaF₂ system.
In: Anorganické nekovové materiály, XV. ročník odborného semináre, 10.2.2010, Praha : Zborník abstraktov. - : VŠCHT v Praze, 2010. - ISBN 978-80-7080-752-1. - S. 21
- AFH1 Jantová, Soňa [40%] - Matejov, Patrik [20%] - **Čopan, Peter** [20%] - Bakoš, Dušan [20%]: The study of biocompatibility and cytotoxicity of silicon nitride on human fibroblast cell lines.
In: Interdisciplinary Toxicology. - ISSN 1337-6853. - Vol. 3, No. 3. - , 2010, A49
- AFH2 **Smrčková, Eva** [75%] - Gabčová, Jana [15%] - Fellner, Pavel [10%]: VPLYV PRÍMESÍ NA PROCES ZRÁŽANIA Mg(OH)₂ : SLOVENSKÝ čASOPIS O CHÉMII PRE CHEMICKÉ VZDELÁVANIE, VÝSKUM A PRIEMYSEL.
In: ChemZi - Chemické zvesti. - ISSN 1336-7242. - Roč. 5, č. 9 (2009), s. 151-152

Books

- AAB1 Havalda, Ivan [70%] - **Kovár, Vladimír** [30%]: Diferenciálne rovnice v chemickom inžinierstve : Zostavovanie a riešenie obyčajných diferenciálnych rovníc spolu s podrobnými (aj číselnými) výpočtami. - 1. vyd. - Bratislava : Nakladateľstvo STU, 2010. - 401 s. - ISBN 978-80-227-3322-9

INSTITUTE OF BIOCHEMISTRY, NUTRITION AND HEALTH PROTECTION

Head of Institute

prof. Ľudovít Varečka, DSc.



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Foreword

The institute consists of the Department of Biochemistry and Microbiology and the Department of Nutrition and Food Assesment. It offers interesting undergraduate and graduate courses as well as PhD studies. Long history of research is supported by grants, good scientific equipment and laboratories for sensory analysis, genetics, cell culture and radioactive measurements.

Teaching activities

The institute guarantees the Dipl. Eng. study program Nutrition and Health Protection, and Medical Engineering, which were found to be very attractive for students, and PhD study programs Biochemistry, and Nutrition and Health Protection. The key subjects taught at the Institute are Biology, Biochemistry (7 courses), Microbiology (4 courses), Molecular biology and genetics (2 courses), Immunochemistry, Cell Cultures, Principles of Nutrition, Food chemistry (2 courses), Food analysis (2 courses), etc.

Research profile

Our research includes the metabolic and biological aspects of microbes. Main areas are the study of fungal transport, metabolism and enzyme secretion, evaluation of food quality and safety, designing functional foods and nutraceutics, predictive microbiology and testing of biological effects of xenobiotics.

Department of Biochemistry and Microbiology

Head of Department prof. Ľudovít Varečka, DSc.



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| RNDr. Jana Viskupičová, PhD. | Assistant prof. PhD. | | janaviskupicova@gmail.com |

Projects

APVV

| | |
|---------------------|---|
| Project Code: | APVV-0642-07 |
| Title (sl.): | Využitie komplexných prírodných organických materiálov (KPOM) na energetické účely s použitím netradičných mikroorganizmov. |
| Title (eng.): | Exploitation of complex organic materials (CNOM) by means of non-traditional micro-organisms for energetic purposes. |
| Project duration: | 01.09.2008 - 31.12.2010 |
| Responsible person: | prof. RNDr. Ľudovít Varečka, DSc. |

VEGA

| | |
|---------------------|---|
| Project Code: | 1/0462/08 |
| Title (sl.): | Mikroorganizmy izolované z lignitu - impulz pre štúdium regulácie metabolického obratu a potenciálny zdroj nových sekundárnych metabolitov. |
| Title (eng.): | Microbial isolates from lignite – an impetus for the study of metabolic turnover and a potential source of novel secondary metabolites. |
| Project duration: | 01.01.2008 - 31.12.2010 |
| Responsible person: | doc. RNDr. Daniela Hudecová, PhD. |

VEGA

| | |
|---------------------|--|
| Project Code: | 1/0589/08 |
| Title (sl.): | Polymorfizmus génov pre vybrané subjednotky proteínkinázy závislej na 5'-AMP (AMPK) a jej vztah ku obezite a pohybovej výkonnosti. |
| Title (eng.): | Polymorphism of the genes for selected subunits of 5'-AMP dependent protein kinase (AMPK) and its relationship to the obesity and physical fitness |
| Project duration: | 01.01.2008 - 31.12.2010 |
| Responsible person: | Ing. Boris Lakatoš, PhD. |

VEGA

| | |
|---------------------|--|
| Project Code: | 1/0434/08 |
| Title (sl.): | Mechanizmy sekrécie extracelulárnych proteáz vláknitej huby Trichoderma viride. |
| Title (eng.): | Mechanisms of extracellular protease secretion in filamentous fungus Trichoderma viride. |
| Project duration: | 01.01.2008 - 31.12.2010 |
| Responsible person: | Ing. Martin Šimkovič, PhD. |

VEGA

| | |
|-------------------------|---|
| Project Code: | 2/066/08 |
| Title (sl.): | Antioxidačná génová terapia in vivo pri liečbe hypertenzie. |
| Title (eng.): | In-vivo antioxidant gene transfer in the therapy of hypertension. |
| Project duration: | 01.01.2008 - 31.12.2010 |
| Responsible person: | RNDr. Ima Dovinová, PhD., |
| Responsible person STU: | RNDr. Helena Paulíková, PhD. |

VEGA

| | |
|---------------|---|
| Project Code: | 1/0650/09 |
| Title (sl.): | Mechanizmy zabezpečujúce špecifickosť Ca ²⁺ signálov v živočíšnych |

Title (eng.): bunkách.
 Project duration: Mechanisms providing specificity of Ca²⁺ signals in animal cells.
 Responsible person: 01.01.2009 - 31.12.2011
prof. RNDr. Ľudovít Varečka, DSc.

VEGA

Project Code: 1/0097/10
 Title (sl.): Modulátor bunkových tiolov s DNA väzbovou aktivitou - príprava a testovanie nových multiterčových látok s proteinádorovým účinkom
 Title (eng.): Modulators of cellular thiols with DNA-binding activity - preparation and screening of new multitarget substances possessing anticancer properties
 Project duration: 01.01.2009 - 31.12.2011
 Responsible person: **RNDr. Helena Paulíková, PhD.**

VEGA

Project Code: 1/0687/10
 Title (sl.): PDR transportéry Trichoderma atroviride a ich úloha v mykoparazitizme
 Title (eng.): PDR transporters from Trichoderma atroviride and their function during mycoparasitism
 Project duration: 2010-2011
 Responsible person: **Ing. Svetlana Kryštofová, PhD.**

VEGA

Project Code: 1/0165/10
 Title (sl.): Príprava a biologická aktivita nových biomateriálov využiteľných v rekonštrukčnej medicíne
 Title (eng.): Preparation and biological activity of new biomaterials used in reconstructive medicine
 Project duration: 2010-2011
 Responsible person: **Doc. Ing. Soňa Jantová, PhD.**

Sixth Framework Programme

Project Code: HENVINET No 037019
 Title (eng.): Health and environment network.
 Title (sl.): Prepojenie zdravia a životného prostredia.
 Project duration: 01.11.2006 - 30.04.2010
 Project coordinator: Dr. Inga Floisand
 Responsible person: **Ing. Andrea Šovčíková, PhD.**

List of bachelor (BT), diploma (DT) and dissertation (DissT) theses

| Type | Final thesis | Supervisor |
|------|--|---------------------------------------|
| BT | Bc. Alžbeta Grolmusová Photodynamic therapy and new types of the photosensitizers | RNDr. Zuzana Vantová |
| BT | Bc. Tomáš Heizer Probiotics and Cancer | doc. Ing. Soňa Jantová, CSc. |
| BT | Bc. Renáta Chromíková Creating Trichoderma atroviride Tapdr1 replacement construct | Ing. Svetlana Kryštofová, PhD. |
| BT | Bc. František Kavecký Study of proteolysis induced entry of Ca ²⁺ ions into human erythrocytes | prof. RNDr. Ľudovít Varečka, DrSc. |

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|------|--|---------------------------------------|
| BT | Bc. Peter Keša Limits of Survival of Microorganisms under Extreme Conditions | prof. RNDr. Ľudovít Varečka, DrSc. |
| BT | Bc. Kristína Kováčová Antimicrobial Activity of new DNA Intercalators and their Mutagenicity | doc. RNDr. Helena Paulíková, CSc. |
| BT | Bc. Katarína Köváryová Antimicrobial activity of ethanol Echinacea extracts | Ing. Petra Olejníková, PhD. |
| BT | Bc. Tomáš Molnár Interaction of Nucleic Acids with Antimicrobial Agents of Pyronine and Thioflavine Type | prof. RNDr. Ľudovít Varečka, DrSc. |
| BT | Bc. Zuzana Pakanová Changes in oxidative stress and antioxidant response in therapy of hypertension | RNDr. Ima Dovinová, PhD. |
| BT | Bc. Veronika Palušková Creating Trichoderma atroviride Tapdr2 knock-out construct | Ing. Svetlana Kryštofová, PhD. |
| BT | Bc. Róbert Stanko Photosensitisers in Medicine | Ing. Katarína Koňariková |
| BT | Bc. Ján Škorík Metabolic Processes During Conidiation and Germination in Filamentous Fungi | Ing. Michal Kaliňák |
| BT | Bc. Kamila Šmelková Microbial Resistance Trend of Salmonella Typhimurium in Stationary Phase | Ing. Lucia Birošová, PhD. |
| BT | Bc. Lívia Šmihuľová Cyanobacteria | prof. RNDr. Daniela Hudecová, CSc. |
| BT | Bc. Dominika Topoľská Berberine - new potential anticancer drug | doc. Ing. Soňa Jantová, CSc. |
| BT | Bc. Zuzana Vihonská Transport of organic acids into the mycelia of Trichoderma viride | Ing. Petra Olejníková, PhD. |
| BT | Bc. Monika Václavíková Effect of Extracts from Echinacea Angustifolia on the Development of Ciprofloxacin Resistance | Ing. Lucia Birošová, PhD. |
| BT | Bc. Alexandra Wagnerová Interactions of intracellular thiols with acridine substances: LDH and trypsin inhibition | doc. RNDr. Helena Paulíková, CSc. |
| DT | Ing. Jana Balážiková Biological Properties of the Selected 4-anilinoquinazoline | doc. Ing. Soňa Jantová, CSc. |
| DT | Ing. Lucia Bialešová Expression of AMP- Activated Protein Kinase (AMPK) Isoforms in Human Lymphocytes | Ing. Boris Lakatoš, PhD. |
| DT | Ing. Mária Čarná New Multitarget Acridine Derivatives Possessing Cytostatic Activity | doc. RNDr. Helena Paulíková, CSc. |
| DT | Ing. Martina Fiedlerová Antimicrobial Activity of Newly Synthesized Indilizines | Ing. Petra Olejníková, PhD. |
| DT | Ing. Martina Melušová 4-anilinoquinazolines - the Potential Photosensitive Substances Usable at Medicine | doc. Ing. Soňa Jantová, CSc. |
| DT | Ing. Katarína Turáková Influx Ca2+ into Mice Thymocytes | Ing. Boris Lakatoš, PhD. |
| DT | Ing. Zuzana Zemková Influence of Environmental Factors on Proteases Secreted by Filamentous Fungus Trichoderma viride | Ing. Martin Šimkovič, PhD. |
| DisT | Ing. Anita Gdovinová, PhD. Secretion of Proteolytic Enzymes by Trichoderma viride Fungus, its Mechanism and Changes during Senescence | prof. RNDr. Ľudovít Varečka, DrSc. |

DisT Ing. Danka Maceková, PhD. doc. Ing. Vladimír Farkaš, DrSc.
Metabolic stability of surface structures in yeasts *Cryptococcus neoformans*

Selected publications

Journals

Current Contents Publications

- ADC1 Bella, Maroš [30%] - Schultz, Marcel [20%] - Milata, Viktor [20%] - **Koňariková, Katarína** [15%] - Breza, Martin [15%]: Application of the Gould-Jacobs reaction to 4-amino-2,1,3-benzoselenadiazole. In: Tetrahedron. - ISSN 0040-4020. - Vol. 66, Iss. 41 (2010), s. 8169-8174
- ADC2 Bujdošová, Zuzana [20%] - Györyová, Katarína [20%] - **Hudecová, Daniela** [20%] - Kováčová, Jana [20%] - Halás, Ladislav [20%]: Preparation, spectral, thermal, and biological properties of zinc(II) 4-chloro- and 5-chlorosalicylate complexes with methyl 3-pyridylcarbamate and phenazone. In: Chemical Papers. - ISSN 0366-6352. - Vol. 64, Iss. 5 (2010), s. 584-591
- ADC3 **Kurucová, Anita** [25%] - Farkašová, Ester [25%] - **Varečka, Ľudovít** [25%] - **Šimkovič, Martin** [25%]: Spontaneous and protein-induced secretion of proteinases from *Saccharomyces cerevisiae*. - , 2010. In: Journal of Basic Microbiology. - ISSN 0233-111X. - Vol. 49, Iss. 6 (2009), s. 545-552
- ADC4 **Olejníková, Petra** [25%] - **Ondrušová, Zuzana** [25%] - **Kryštofová, Svetlana** [25%] - **Hudecová, Daniela** [25%]: Benomyl-Resistant Mutant Strain of *Trichoderma* sp. with Increased Mycoparasitic Activity. - , 2010. In: Folia microbiologica. - ISSN 0015-5632. - Vol. 55, Iss. 1 (2010), s. 102-104
- ADC5 **Viskupičová, Jana** [40%] - Danihelová, Martina [30%] - Ondrejovič, Miroslav [15%] - Liptaj, Tibor [10%] - Šturdík, Ernest [5%]: Lipophilic rutin derivatives for antioxidant protection of oil-based foods. In: Food Chemistry. - ISSN 0308-8146. - Vol. 123, Iss. 1 (2010), s. 45-50

Other Publications

- ADE1 Dovinová, Ima [40%] - Gardlík, Roman [10%] - Pálffy, Roland [10%] - Kristek, František [10%] - Cacanyiová, Soňa [10%] - **Vantová, Zuzana** [10%] - **Paulíková, Helena** [10%]: Modulation of antioxidative response in the therapy of hypertension and other cardiovascular diseases. - , 2009. In: Neuroendocrinology Letters. - ISSN 0172-780X. - Vol. 30, Suppl. 1 (2009), s. 32-35
- ADE2 **Lakatoš, Boris** [40%] - **Kaliňáková, Barbora** [40%] - **Hudecová, Daniela** [10%] - **Varečka, Ľudovít** [10%]: New effects and applications of thiophlavins. In: Central European Journal of Biology. - ISSN 1644-3632. - Vol. 5, Iss. 2 (2010), s. 143-150
- ADE3 **Viskupičová, Jana** [50%] - Štrosová, Miriam [40%] - Šturdík, Ernest [5%] - Horáková, Ľubica [5%]: Modulating effect of flavonoids and their derivateives on sarcoplasmic reticulum Ca²⁺-ATPase oxidized by hypochloric acid and peroxynitrite. In: Neuroendocrinology Letters. - ISSN 0172-780X. - Vol. 30, Suppl. 1 (2009), s. 148-151
- ADF1 **Jantová, Soňa** [20%] - Letašiová, Silvia [20%] - **Koňariková, Katarína** [20%] - Milata, Viktor [20%] - Brezová, Vlasta [20%]: Effect of new synthetically prepared quinolone ethyl-1,4-dihydro-8-nitro-4-oxoquinoline-3-carboxylate on human leukemia cell line HL-60 without presence of UVA irradiation. - , 2010. In: Acta Chimica Slovaca. - ISSN 1337-978X. - Vol. 3, No. 1 (2010), s. 51-72
- ADF2 Repická (Púčeková), Zuzana [30%] - **Krupková, Lenka** [20%] - Korabík, Maria [5%] - Moncol', Ján [15%] - **Hudecová, Daniela** [15%] - Valigura, Dušan [15%]: Bis(5-Me(O)salicylato)copper(II) Complexes with/without Diethylnicotinamide - Preparation, Structure

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 In: Acta Chimica Slovaca. - : STU v Bratislave. - ISSN 1337-978X (http://www.acs.ctif.stuba.sk/). - Vol. 2, No. 2. - , 2009, s. 60-70
- ADF3 **Repický, Andrej** [50%] - **Jantová, Soňa** [25%] - Čipák, Ľuboš [25%]: Apoptosis of murine L1210 leukemia cells induced by 2-acetyl-3-(6-methoxybenzothiazo)-2-ylaminoacrylonitril involves ROS-mitochondrial mediated death signalling and activation of p38 MAPK.
 In: Acta Chimica Slovaca. - ISSN 1337-978X. - Vol. 3, No. 1 (2010), s. 15-28
- ADF4 Smolinská, Miroslava [50%] - **Olejníková, Petra** [10%] - **Hudecová, Daniela** [10%] - Čík, Gabriel [30%]: Photodynamic inactivation of Escherichia coli by methylene blue incorporated in ZSM-5 zeolite channels under red LED light. - , 2010.
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- AED1 Hybenová, Eva [70%] - Bobrík, Miroslav [20%] - **Lakatoš, Boris** [10%]: Vybrané ukazovatele stavu výživy v súbore vysokoškolských študentov STU.
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- AED2 Mazúr, Milan [40%] - Furdíková, Katarína [10%] - Husáriková, Lucia [40%] - **Kaliňák, Michal** [10%]: Analýza vína pomocou protónovej NMR spektroskopie. - , 2010. - 6 s.
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Published Conference Contributions

- AFC1 **Kadlecíková, Eva** [60%] - **Šimkovič, Martin** [20%] - **Varečka, Ľudovít** [20%]: Nové inhibítory transportu Ca²⁺ do mikroorganizmov: odlišnosti od živočíšnych buniek.
 In: XXV. Xenobiochemické sympózium, Mikulov, 22.-25.9.2009. - : Výskumný ústav veterinárního lékařství, v.v.i., 2009. - S. 67
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- AFD1 **Jantová, Soňa** [30%] - Matejov, Patrik [10%] - Theiszová, Marica [30%] - Bakoš, Dušan [30%]: Biokompatibilita kompozitu bioaktívneho skla založeného na Li₂O-SiO₂-CaO-P₂O₅-CaF₂.
 In: Priemyselná toxikológia 2010, 30. vedecké sympózium, 16.-18.júna 2010, Svit, SR. - : Slovenská spoločnosť priemyselnej chémie, 2010. - ISBN 978-80-969710-6-0. - S. 258-263
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- AFD3 Mackuľák, Tomáš [50%] - Prousek, Jozef [25%] - **Olejníková, Petra** [15%] - Bodík, Igor [10%]: The Using of Enzymes for Degradation of Cellulose Substrate for the Production of Biogas. - , 2010.
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- AFD5 Sabolová, Danica [20%] - Kožurková, Mária [10%] - Plšíková, Jana [10%] - **Paulíková, Helena** [10%] - **Vantová, Zuzana** [10%] - Janovec, Ladislav [10%] - Ungvárský, Ján [10%] - Kristian, Pavol [10%] - Imrich, Ján [10%]: Synthesis, DNA binding study and cytotoxic activity of novel proflavine derivatives : Book of Contributions.
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- AFG1 Györyová, Katarína [20%] - Krajníková, Annamária [20%] - Ganajová, Mária [20%] - Kováčová, Jana [20%] - **Hudecová, Daniela** [20%]: Thermal decompositions and antimicrobial activity of zinc(II) 2-bromobenzoates with organic ligands. - , 2010.
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- AFH4 **Gdovinová, Anita** [50%] - **Šimkovič, Martin** [50%]: Extracelulárne peptidázy, súčasť adaptačných mechanizmov vláknitej huby trichoderma viride. - , 2009.
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- AFH5 **Hudecová, Daniela** [60%] - **Kaliňáková, Barbora** [20%] - **Olejníková, Petra** [20%]: Dve tváre mikroskopických mycélyových húb.
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- AFH7 **Jantová, Soňa** [40%] - Matejov, Patrik [20%] - Čopan, Peter [20%] - Bakoš, Dušan [20%]: The study of biocompatibility and cytotoxicity of silicon nitride on human fibroblast cell lines.
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- AFH11 **Olejníková, Petra** [30%] - **Kaliňáková, Barbora** [20%] - Bírošová, Lucia [20%] - **Hudecová, Daniela** [10%] - Olejník, Pavol [10%] - Valachovičová, Martina [10%]: Kvantitatívne a kvalitatívne zastúpenie črevnej mikroflóry vegetariánov.
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- AFH12 **Olejníková, Petra** [40%] - **Kryštofová, Svetlana** [20%] - **Hudecová, Daniela** [20%] - **Varečka, Ľudovít** [20%]: Úloha H+-ATPázy cytoplazmovej membrány T.viride.
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- AFH16 **Vaneková, Monika** [80%] - **Lakatoš, Boris** [10%] - **Varečka, Ľudovít** [10%]: Diversification of Ca²⁺-mediated signal in a simple model system : Program AND ABSTRACTS.
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Projects

VMSP

| | |
|---------------------|--|
| Project Code: | VMSP-P-0073-09 |
| Title (sl.): | Vreckový analytický systém pre jednoduchú a rýchlu analýzu v potravinárstve a diagnostike na báze jednorazových biosenzorov s využitím nanotechnológie |
| Title (eng.): | Pocket analytical system for easy and rapid analysis in food and diagnostics based on disposable biosensors using nanotechnology |
| Project duration: | 2009-2011 |
| Responsible person: | Doc.Ing. E. Šturdík, PhD. |

VEGA

| | |
|---------------------|--|
| Project Code: | 1/0094/10 |
| Title (sl.): | Matematický popis dynamiky rastu mikrobiálnych kontaminantov v syroch remeselne vyrábaných zo surového mlieka a ich interakcie s baktériami mliečneho kysnutia |
| Title (eng.): | Mathematical description of growth dynamics of microbial contaminants in cheeses produced from raw milk and their interaction with lactic acid bacteria |
| Project duration: | 2010-2011 |
| Responsible person: | Doc. Ing. Ľ. Valík, PhD. |

VEGA

| | |
|---------------------|---|
| Project Code: | 1/0845/08 |
| Title (sl.): | Analýza zdraviu prospešných látok cereálií a ich využitie v pekárskych výrobkoch s preventívno-lekárskymi vlastnosťami. |
| Title (eng.): | Analysis of health benefit cereal components and their use in bakery products with preventive and medicinal properties. |
| Project duration: | 01.01.2008 - 31.12.2010 |
| Responsible person: | doc. Ing. Mária Takácsiová, PhD. (2008), Ing. Eva Hybenová, PhD. (since 2009) |

Štrukturálne fondy EÚ

| | |
|---------------------|---|
| Project Code: | ITMS 26240220022 |
| Title (sl.): | Výskum zdravotných efektov rastlinnej potravy a možnosti redukcie zdravotných rizík |
| Title (eng.): | Research of health effects of plant food and the possibility of reducing health risks |
| Project duration: | 10/2009-3/2012 |
| Responsible person: | Ing. Lucia Birošová, PhD. |

Štrukturálne fondy EÚ

| | |
|---------------------|--|
| Project Code: | ITMS 26240220040 |
| Title (sl.): | Hodnotenie prírodných látok a ich výber pre prevenciu a liečbu civilizačných ochorení |
| Title (eng.): | Assessment of natural compounds and their selection to prevent from civilized diseases |
| Project duration: | 06/2010-05/2013 |
| Responsible person: | Doc. Ing. E. Šturdík, PhD. |

List of bachelor (BT), diploma (DT) and dissertation (DissT) theses

| Type | Final thesis | Supervisor |
|------|---|--------------------------------|
| BP | Bc. Zuzana Janšáková Prophylactic Components of Mead | Mgr. Martina Danihelová |
| BP | Bc. Ľudmila Kluková Antifungal Activity of Flavonoids | doc. Ing. Ernest Šturdík, CSc. |
| BP | Bc. Katarína Pethőová Prophylactic effects of dietary fiber | Mgr. Lenka Duchoňová |
| BP | Bc. Petra Polakovičová Monitoring of Weight and Body Fat Reduction as a Result of Controlled Diet and Exercise | Ing. Lucia Mikušová |
| BP | Bc. Filip Rosskopf Distribution temperatures in refrigeration chain and hygienic legislation of EU | doc. Ing. Ľubomír Valík, PhD. |
| BP | Bc. Júlia Štofirová A Coeliac disease and Gluten-free Foods | Ing. Eva Hybenová, PhD. |
| BP | Bc. Livia Žofajová Importance of β-glucan Presence in the Foods | Ing. Mária Kováčová, PhD. |
| DP | Ing. Andrea Holubková The Health Benefits Of Products With Whole Grain Fractions | Ing. Lucia Mikušová |
| DP | Ing. Natália Juríková The sourdough microflora: interactions between lactobacilli and yeasts | Ing. Petra Gereková |
| DP | Ing. Jana Máleková Quantitative Analysis of Growth of <i>Mucor circinelloides</i> van Tieghem, Depending on Salt Concentration and Temperature | Ing. Denisa Liptáková, PhD. |
| DP | Ing. Jana Pelikánová Growth Dynamics of <i>Geotrichum Candidum</i> in Presence of Lactic Acid Bacteria | Ing. Denisa Liptáková, PhD. |
| DP | Ing. Michal Porubiak Analysis of Volatile Components of Plant Food Matrices | RNDr. Peter Fodran |
| DP | Ing. Adriana Studeničová Quantitative analysis of environmental factors on <i>Staphylococcus aureus</i> growth | Ing. Alžbeta Medveďová, PhD. |
| DizP | Ing. Jana Minarovičová, PhD. Pathogenic parasitic microorganism <i>Cryptosporidium parvum</i> in food | doc. Ing. Ľubomír Valík, PhD. |

Selected publications

Journals

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- ADC1 **Birošová, Lucia [70%]** - Mikulášová, Mária [30%]: Development of triclosan and antibiotic resistance in *Salmonella enterica* serovar Typhimurium. - , 2009.
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- AFG1 Gregová, Edita [45%] - **Šramková, Zuzana** [35%] - Mihálik, Daniel [10%] - Šliková, Svetlana [10%]: Genetic erosion of wheat diversity in Slovak Republic : Book of abstracts, 24-27 September 2008. - , 2009.
In: 7. Plant Genomics European Meetings : Book of Abstracts, 24-27 September 2008. - S. 122
- AFG2 **Hudecová, Anna** [45%] - **Liptáková, Denisa** [25%] - **Valík, Ľubomír** [25%] - **Pelikánová, Jana** [5%]: Effect of lactic acid bacteria on *Geotrichum candidum* growth in milk co-culture. - 1 s.
In: Food Micro 2010, 22nd International ICFMH Symposium. - , 2010. - nestr.
- AFG3 Jurovatá, Jana [40%] - Gago, František [20%] - Kraic, Filip [25%] - **Šramková, Zuzana** [10%] - **Šturdík, Ernest** [5%]: Chemometric analysis of wheat as a feedstock for biofuel pruduction.
In: 3rd IFSDAA International Seminar on Crop Science For Food Security, 2010, Szeged, Hungary : Book of Abstracts. - : Cereal Research Ltd., 2010. - S. 33
- AFG4 Jurovatá, Jana [30%] - Gago, František [10%] - **Šramková, Zuzana** [30%] - Kraic, Filip [20%] - **Šturdík, Ernest** [10%]: Content of Selected Nutrition and Health Benefit Components in the Wheat Varieties.
In: 14th International Biotechnology Symposium and Exhibition, September 14-18, 2010, Rimini-Italy. - : Oxford Abstracts, 2010. - P-F61
- AFG5 **Liptáková, Denisa** [35%] - **Medvedčová, Alžbeta** [25%] - **Valík, Ľubomír** [20%] - **Píšová, Zuzana** [15%] - **Máleková, Jana** [5%]: Quantitative analysis of *Mucor circinelloides* growth in dependance on the temperature, pH and water activity. - 1 s.
In: Food Micro 2010, 22nd International ICFMH Symposium. - , 2010. - nestr.
- AFG6 **Medvedčová, Alžbeta** [50%] - **Valík, Ľubomír** [30%] - **Liptáková, Denisa** [10%] - **Studeničová, Adriana** [10%]: Modelling the effect of temperature, water activity and pH value on the growth of *Staphylococcus aureus*. - 1 s.
In: Food Micro 2010, 22nd International ICFMH Symposium. - , 2010. - nestr.
- AFG7 **Monošík, Rastislav** [50%] - Stredanský, Miroslav [25%] - **Šturdík, Ernest** [25%]: Optimization and designing of biosensors for wine analysis.
In: The FEBS Journal. - : Wiley Blackwell. - ISSN 1742-464X. - Vol. 277, Supl. 1. - , 2010, s. 248
- AFG8 Šliková, Svetlana [20%] - Gregová, Edita [35%] - **Šramková, Zuzana** [35%] - Mihálik, Daniel [5%] - **Šturdík, Ernest** [5%]: Seed Seed storage protein diversity in wheat (*Triticum aestivum* L.) varieties.
In: 2nd International Symposium on Genomics of Plant Genetic Resources, Bologna - Italy, 24-27 April, 2010. - : University of Bologna, 2010. - S. 246
- AFG9 **Šramková, Zuzana** [50%] - Gregová, Edita [20%] - Šliková, Svetlana [3%] - Kraic, Filip [14%] - **Šturdík, Ernest** [10%] - Hauptvogel, Pavol [3%]: Bread-making quality of common wheat cultivars in relationship to high molecular weight glutenin subunit composition.
In: 3rd IFSDAA International Seminar on Crop Science For Food Security, 2010, Szeged, Hungary : Book of Abstracts. - : Cereal Research Ltd., 2010. - S. 71
- AFG10 **Valík, Ľubomír** [45%] - **Medvedčová, Alžbeta** [30%] - **Liptáková, Denisa** [15%] - **Hudecová, Anna** [10%]: Application of predictive microbiology and risk-based metrics in production of ewes lump cheese: A.S. aureus case. - 1 s.
In: Food Micro 2010, 22nd International ICFMH Symposium. - , 2010. - nestr.
- AFH1 **Bírošová, Lucia** [25%] - Letašiová, Silvia [25%] - Jantová, Soňa [25%] - Rumí, Tomáš [25%]: Antimutagenic potential of berberine evaluated by Ames test, HGPRT gene-mutation assay and comet assay.
In: Interdisciplinary Toxicology. - ISSN 1337-6853. - Vol. 3, No. 3. - , 2010, A34
- AFH2 **Bírošová, Lucia** [50%] - **Václavíková, Monika** [25%] - Vaverková, Štefánia [25%]: Biologické účinky extraktov z *Echinacea angustifolia*.
In: Mikroorganizmy a kvalita života, 25.kongres ČSSM, Stará Lesná, 15.-18.9.2010. - : Československá společnost mikrobiologická, 2010. - ISBN 978-80-970477-8-8. - S. 110
- AFH3 **Bírošová, Lucia** [30%] - Olejníková, Petra [20%] - Kaliňáková, Barbora [20%] - **Šaková, Nikoleta** [20%] - Valachovičová, Martina [10%]: Štúdium korelácie výskytu lecitinázo-pozitívnych klostridií v črevnom trakte vegetariánov a potenciálnej mutagenity.
In: Mikroorganizmy a kvalita života, 25.kongres ČSSM, Stará Lesná, 15.-18.9.2010. - : Československá společnost mikrobiologická, 2010. - ISBN 978-80-970477-8-8. - S. 248

- AFH4 Breierová, Emília [20%] - Márová, Ivana [20%] - Čertík, Milan [20%] - **Mikušová, Lucia** [20%] - Antalová, Mariana [20%]: Bioaccumulation and uptake of iron ions by red yeasts.
In: 38th Annual Conference on Yeasts, Smolenice, Slovak Republic, 11-14 May, 2010 : Book of Abstracts. - , 2010. - ISBN 1336-4839. - S. 89
- AFH5 Breierová, Emília [20%] - Čertík, Milan [20%] - Márová, Ivana [20%] - **Mikušová, Lucia** [20%] - Antalová, Mariana [20%]: Vplyv železitých iónov na kartenoïdné druhy kvasiniek.
In: Mikroorganizmy a kvalita života, 25.kongres ČSSM, Stará Lesná, 15.-18.9.2010. - : Československá společnost mikrobiologická, 2010. - ISBN 978-80-970477-8-8. - S. 141
- AFH6 Olejníková, Petra [30%] - Kaliňáková, Barbora [20%] - **Bírošová, Lucia** [20%] - Hudecová, Daniela [10%] - Olejník, Pavol [10%] - Valachovičová, Martina [10%]: Kvantitatívne a kvalitatívne zastúpenie črevnej mikroflóry vegetariánov.
In: Mikroorganizmy a kvalita života, 25.kongres ČSSM, Stará Lesná, 15.-18.9.2010. - : Československá společnost mikrobiologická, 2010. - ISBN 978-80-970477-8-8. - S. 271
- AFH7 **Valík, Ľubomír** [60%] - **Medveďová, Alžbeta** [30%] - **Liptáková, Denisa** [10%]: Aplikácia konceptu zdravotnej neškodnosti potravín:mikrobiológia ovčieho hrudkového syra.
In: Mikroorganizmy a kvalita života, 25.kongres ČSSM, Stará Lesná, 15.-18.9.2010. - : Československá společnost mikrobiologická, 2010. - ISBN 978-80-970477-8-8. - S. 55
- AFH8 **Valík, Ľubomír** [100%]: Ku konceptu zdravotnej neškodnosti potravín založených na analýze rizika. - , 2010.
In: Bezpečnosť a kvalita surovín a potravín, V. vedecká konferencia s medzinárodnou účasťou, 3.-4. február 2010, Nitra. - : Slovenská poľnohospodárska univerzita v Nitre, 2010. - ISBN 978-80-552-0327-0. - S. 119

INSTITUTE OF BIOTECHNOLOGY AND FOOD SCIENCE

Head of Institute

Prof. Ján Šajbidor, DSc.



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Foreword

The institute consists of the Department of Biochemical Technology and the Department of Food Science and Technology. It offers undergraduate and graduate courses as well as PhD studies in the fields: *Biotechnology* and *Food Science and Technology*.

Teaching activities

Biotechnology courses: Biochemical and Biotechnological Information; Fundamentals of Fermentation Technology; Food Biotechnology; Bioanalytical Methods; Pharmaceutical Biotechnology; Fundamentals of Recombinant Technology; Gene Engineering, Enzymology and Enzyme Engineering; Biosynthesis and Transformation of Metabolites; Environmental Biotechnology; Malting and Brewing; Chemistry and Microbiology of Wine; Chemistry and Technology of non alcoholic drinks; Xenobiochemistry; Fundamentals of Biotechnology.

Food Science and Technology courses: Hygiene and Health Protection; Information Technologies in Food Industry; Food and Biotechnological Raw Materials; Fundamentals of Food Technology; Packaging and Distribution of Foods; Food Safety; Food Engineering; Cosmetic and Household Chemistry; Chemistry and Technol. of Sacharides; Dairy Technology; Cereal Chemistry and Technology; Sugar technology; Preserved and Frozen Food Technology; Meat and Poultry Technology; Fats, Detergents and Oleochemistry; Microbiology of Milk, Fats and Cosmetics; Chemistry and Technology of Cosmetics; By-products in Food Industry.

Research profile

Department of Biochemical Technology: microbiology, biochemistry and bioengineering of beer, wine, ethanol and microbial biomass production and technology, environmental biotechnology with emphasis on microbial degradation of pollutants, fermentative production of organic acids, lipids, pigments and biotransformation of carbohydrates, overproduction of secondary metabolites used in pharmacy and medicine, bioengineering.

Department of Food Science and Technology: chemistry and analysis of lipids, technology of edible oils and technical fats, technology hygiene and sanitation, cosmetic and household chemistry, cereal chemistry and technology, technology and microbiology of milk and milk products, meat chemistry and technology, biopreservation of vegetable products, sugar-making technology.

Department of Biochemical Technology

Head of Department **Assoc. Prof. Daniela Šmogrovičová, PhD.**



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Projects

Slovak Research and Development Agency Projects

APVV

Project Code: APVV-0310-06
 Title (sl.): Výskum a vývoj funkčných potravín.
 Title (eng.): Study and development of functional foods.
 Project duration: 08.02.2007 - 30.06.2010
 Responsible person: **Ján Šajbidor, DSc., Prof.**

APVV

Project Code: APVV-0488-07
 Title (sl.): Čisté kultúry kvasiniek verzus senzorické a antioxidačné vlastnosti vína.
 Title (eng.): Pure cultures of yeasts versus sensory and antioxidant properties of wine.
 Project duration: 01.06.2008 - 31.12.2010
 Responsible person: **Fedor Malík, DSc., Prof.**

APVV

Project Code: APVV-0681-07
 Title (sl.): Kvasinky ako nástroj pre produkciu biotechnologicky hodnotných steroidov: biochemický a genetický prístup.
 Title (eng.): Yeast as a tool for producing biotechnologically valuable sterols: the biochemical and genetic approach.
 Project duration: 17.07.2008 - 31.12.2010
 Responsible person: RNDr. Ivan Hapala, PhD., **Milan Čertík, PhD., Assoc. Prof.**

APVV

Project Code: APVV-0043-07
 Title (sl.): Produkcia konjugovanej linolovej kyseliny ovplyvňovaním diét u prežúvavcov.
 Title (eng.): The production of conjugated linoleic acid by influencing of diets in ruminants.
 Project duration: 16.09.2008 - 31.12.2010
 Responsible person: MVDr. Dušan Jalč, PhD., **Milan Čertík, PhD., Assoc. Prof.**

APVV

Project Code: APVV LPP-0079-09
 Title (sl.): Prototyp laboratória biotechnologického výskumu pre rozvoj experimentálnych schopností študentov stredných škôl.
 Title (eng.): Prototype of Biotechnology Laboratory Research for Development of Experimental Skills of High School Students.
 Project duration: 01.09.2009 - 31.08.2012
 Responsible person: **Daniela Šmogrovičová, PhD., Assoc. Prof.**

Project Code: VVCE-0064-07
 Title (sl.): Biomembrány: Štruktúra a dynamika biologických membrán vo vzťahu k bunkovým funkciám.
 Title (eng.): Biomembranes: Membrane structure and dynamics in relation to cell functions.
 Project duration: 28.08.2008 - 30.06.2011
 Responsible person: RNDr. Ivan Hapala, PhD., **Milan Čertík, PhD., Assoc. Prof.**

VEGA

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| Project Code: | VEGA 1/0399/10 |
| Title (sl.): | Bioremediácia pôd a sedimentov kontaminovaných organickými polutantmi - polychlórovanými bifenylmi (PCB). |
| Title (eng.): | Bioremediation of soils and sediments contaminated with persistent organic pollutants - polychlorinated biphenyls (PCBs). |
| Project duration: | 01.01.2010-31.12.2011 |
| Responsible person: | Katarína Dercová, PhD., Assoc. Prof. |

VEGA

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| Project Code: | VEGA 1/0335/10 |
| Title (sl.): | Integrácia progresívnych techník imobilizácie pre vývoj robustných oxido-redukčných biokatalyzátorov, umožňujúcich efektívnu produkciu bioaktívnych látok. |
| Title (eng.): | Integration of progressive techniques of immobilization for development of robust oxido-reductive biocatalysts allowing effective production of bioactive compounds. |
| Project duration: | 2010-2011 |
| Responsible person: | Rosenberg Michal, PhD., Assoc. Prof. |

VEGA

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| Project Code: | VEGA 1/0747/08 |
| Title (sl.): | Biotechnologické zhodnotenie domácich obnoviteľných zdrojov na biologicky aktívne produkty využiteľných v potravinárstve, farmácií a veterinárnej praxi. |
| Title (eng.): | Biotechnological evaluation of national renewable resources to biologically active products applied for food, agriculture, pharmacy and veterinary uses. |
| Project duration: | 01.01.2008 - 31.12.2010 |
| Responsible person: | Milan Čertík, PhD., Assoc. Prof. |

VEGA

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| Project Code: | VEGA 1/0786/08 |
| Title (sl.): | Vývoj nových kmeňov mikroorganizmov a fermentačných systémov pre efektívnu produkciu bio-ethanolu a fermentovaných nápojov špecifických vlastností. |
| Title (eng.): | Development of new strains of microorganisms and fermentative systems for effective bio-ethanol production and beverages of specific properties. |
| Project duration: | 01.01.2008 - 31.12.2010 |
| Responsible person: | Daniela Šmogrovičová, PhD., Assoc. Prof. |

EU Structural fond projects

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| Project Code: | 26240220057 |
| Title (sl.): | Vybudovanie experimentálnej overovacej jednotky zameranej na biotechnologickú produkciu špeciálnych chemikalií. |
| Title (eng.): | Developing of experimental verification unit focused on biotechnological production of special chemicals. |
| Project duration: | 11/2010 - 10/2013 |
| Responsible person: | Polakovič, Milan, PhD., Assoc. prof.; Rosenberg, Michal, PhD., Assoc. Prof. |

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| Project Code: | 262202220085 |
| Title (sl.): | Priemyselný výskum biologicky aktívnych látok s ohľadom na vývoj nových aplikácií a ich implementácie do výroby. |
| Title (eng.): | Industrial research of biologically active substances - developing of new applications and their implementation to industry. |
| Project duration: | 06/2010 - 05/2014 |
| Responsible person: | Bakoš, Dušan, DSc., Prof., Šimon, Peter, DSc., Prof, Rosenberg, Michal, PhD., Assoc. Prof. |

International commercial project

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| Project Code: | 28035 |
| Title (sl.): | Štúdium faktorov ovplyvňujúcich oxidáciu olejov používaných na vyprážanie a v nich vyprážaných produktov. |
| Title (eng.): | Investigations of factors affecting oxidation of frying oils and fried products. |
| Project duration: | 28.02.2008 - 31.12.2010 |
| Responsible person: | Čertík Milan, PhD., Assoc. Prof. |
| Project Code: | 21020, |
| Title (sl.): | Príprava nitrifikačných a denitrifikačných baktérií. |
| Title (eng.): | Cultivation nitrificants and denitrificants bacteria. |
| Project duration: | 07.02.2010 – 22.12.2010 |
| Responsible person: | Rosenberg Michal, PhD., Assoc. Prof. |
| Project Code: | 21032, |
| Title (sl.): | Príprava biobutanolu z obnoviteľných zdrojov s využitím imobilizovaných biokatalyzátorov. |
| Title (eng.): | Preparation of biobutanol from the renewable resources using immobilised biocatalysts. |
| Project duration: | 07.02.2010 – 22.12.2010 |
| Responsible person: | Rosenberg Michal, PhD., Assoc. Prof. |

National commercial projects

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| Project Code: | 21002 |
| Title (sl.): | Príprava a charakterizácia bakteriálneho preparátu ROPSTOP SB. |
| Title (eng.): | Preparation and characterisation of the ROPSTOP SB bacterial prepartate. |
| Project duration: | 07.01.2010 - 31.12.2010 |
| Responsible person: | Rosenberg Michal, PhD., Assoc. Prof. |
| Project Code: | 21033 |
| Title (sl.): | Verifikácia kultivačných a izolačných postupov pri príprave ketokyselín. |
| Title (eng.): | Examination of cultivating and isolation procedures during keto-acids preparation. |
| Project duration: | 02.03.2010 – 15.05.2010 |
| Responsible person: | Rosenberg Michal, PhD., Assoc. Prof. |
| Project Code: | 29044 |
| Title (sl.): | Verifikácia amylázovej aktivity práškových a tekutých komerčných vzorkách. |
| Title (eng.): | Amylase activity verification in liquid and powder commercial samples. |
| Project duration: | 15.05.2009 - 30.04.2010 |
| Responsible person: | Rosenberg Michal, PhD., Assoc. Prof. |
| Project Code: | 21069 |
| Title (sl.): | Príprava cis-epoxyjantárovej kyseliny. |
| Title (eng.): | Preparation of cis-epoxysuccinic acid |
| Project duration: | 20.9.2010 – 20.10.2010 |
| Responsible person: | Rosenberg Michal, PhD., Assoc. Prof. |
| Project Code: | 21070 |

Title (sl.): Príprava bakteriálnej biomasy.
 Title (eng.): Preparation of bacterial biomass.
 Project duration: 24.8.2010 – 22.12.2010
 Responsible person: **Rosenberg Michal, PhD., Assoc. Prof.**

Central European Exchange Program for University Studies Project

Project Code: CEEPUS CII-HR-0306
 Title (sl.): Pre zdravé a bezpečné potraviny v Strednej Európe.
 Title (eng.): For Safe and Healthy Food in Middle-Europe.
 Project duration: 01.01.2008 - 31.08.2010
 Responsible person: Partner co-ordinator: **Daniela Šmogrovičová, PhD., Assoc. Prof.**

European Cooperation in Science and Technology Project

Project Code: COST Action FA0907
 Title (sl.): Produkcia aromatických látok kvasinkami – nové biokatalyzátory a nové molekulové mechanizmy.
 Title (eng.): Yeast flavour production - New Biocatalysts and Novel Molecular Mechanisms.
 Project duration: 20.01.2010 - 06.06.2014
 Responsible person: **Daniela Šmogrovičová, PhD., Assoc. Prof.**

List of bachelor (BT), diploma (DT) and dissertation (DissT) theses

| Type | Final thesis | Supervisor |
|------|---|---|
| BT | Bc. Marta Állóová Effect of Cultivation Conditions on Yeast Glycoprotein Production | doc. Ing. Milan Čertík, PhD. |
| BT | Bc. Lucia Bačová Biotechnological Production of 2-Phenylethanol | doc. Ing. Michal Rosenberg, CSc. |
| BT | Bc. Dušan Bachár Characterisation of Beer Produced Using Genetically Modified Yeasts | doc. Ing. Daniela Šmogrovičová, CSc. |
| BT | Bc. Alena Gallová Effect of Metabolic Inhibitors on the Production of Cytotoxic Metabolites of <i>Streptomyces</i> sp. | doc. Ing. Mária Šturdíková, PhD. |
| BT | Bc. Magdaléna Havelková Effect of Yeast Strain on Beer Volatile Profile | doc. Ing. Daniela Šmogrovičová, CSc. |
| BT | Bc. Katarína Holbová Effect of Metals on Polyunsaturated Fatty Acids Biosynthesis in Fungi | doc. Ing. Milan Čertík, PhD. |
| BT | Bc. András Huszegyi Secondary Metabolites of Epiphytic Microorganism <i>Streptomyces</i> sp. | doc. Ing. Mária Šturdíková, PhD. |
| BT | Bc. Zdenka Janegová The Study of Ecotoxicity and Mutagenicity of the Sediments Contaminated with Polychlorinated Biphenyls | doc. Ing. Katarína Dercová, PhD. |
| BT | Bc. Lukáš Kňaz Characterization of Sediments Contaminated with Polychlorinated Biphenyls | doc. Ing. Katarína Dercová, PhD. |
| BT | Bc. Zuzana Krivošíková Optimization of Biotechnological Production of Microbial Pigments | doc. Ing. Milan Čertík, PhD. |
| BT | Bc. Kristína Mániková | Ing. Martin Rebroš, PhD. |

| | | |
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| | Bacterial Production of Biobutanol from Renewable Sources | |
| BT | Bc. Kristína Markošová Use Of Oxido-Reductive Systems in Modern Biotransformations | Ing. Martin Rebroš, PhD. |
| BT | Bc. Tamás Sipos Medium Optimization for the Production of Secondary Metabolites by Actinomycetes Isolated from Yew | doc. Ing. Mária Šturdiková, PhD. |
| BT | Bc. Silvia Tokošová Microbial Production of Malic Acid by Bacteria Nocardia sp. | Ing. Helena Hronská, PhD. |
| BT | Bc. Kinga Tomašíková The Effect of Terpenes on Biodegradation of Polychlorinated Biphenyls | doc. Ing. Katarína Dercová, PhD. |
| DT | Ing. Tomáš Augustovič Bioconversion of Malic Acid to Lactic Acid | Ing. Martin Rebroš, PhD. |
| DT | Ing. Ildikó Bénes Effect of Cultivation Conditions of Mutant <i>Streptomyces</i> sp. AC37 on Polyketide Metabolite Production | doc. Ing. Mária Šturdiková, PhD. |
| DT | Ing. Štefan Belický Use of Oxidoreductive Systems in Modern Biotransformations | Ing. Martin Rebroš, PhD. |
| DT | Ing. Tomáš Bertók Glycerol – Substrate for Modern Biotechnology | Ing. Martin Rebroš, PhD. |
| DT | Ing. Eva Buchtová Optimization of Nutritional Requirements of Cytotoxic Metabolites Production by <i>Streptomyces spp. Isolate</i> | doc. Ing. Mária Šturdiková, PhD. |
| DT | Ing. Michal Cirják Regulation of lipid biosynthesis in <i>Pichia pastoris</i> | doc. Ing. Milan Čertík, PhD. |
| DT | Ing. Ivana Dokupilová Amplification of DNA encoding Type I Polyketid Synthase Domains from isolates of <i>Streptomyces spp.</i> | doc. Ing. Mária Šturdiková, PhD. |
| DT | Ing. Igor Dolejš Acetone Butanol Fermentation with <i>Clostridium acetobutylicum</i> | Ing. Martin Rebroš, PhD. |
| DT | Ing. Adam Kučera Characterization Autochthonous Culture of <i>Saccharomyces cerevisiae</i> and Their Applications in The Wine Practice | prof. Ing. Fedor Malík, DrSc. |
| DT | Ing. Jana Lakatošová Effect of Yeast and Fermentation Conditions on Beer Sensory Active Metabolites | doc. Ing. Daniela Šmogrovičová, CSc. |
| DT | Ing. Jana Majeríková Biotechnological Production of Alkylgalactosides | Ing. Helena Hronská, PhD. |
| DT | Ing. Lucia Mikušová Effect of Meststals on Metabolisms of Pigment-forming Ye | doc. Ing. Milan Čertík, PhD. |
| DT | Ing. Eva Petrášíková Study of yeast glycoprotein properties | doc. Ing. Milan Čertík, PhD. |
| DT | Ing. Martin Sák Antioxidant and Sensory Characterisation of Fermented Alcoholic Beverages | doc. Ing. Daniela Šmogrovičová, CSc. |
| DT | Ing. Jozef Ševcech Influence of Autochthonous Cultures <i>Saccharomyces Cerevisiae</i> on Sensory Profile of Wine | prof. Ing. Fedor Malík, DrSc. |
| DT | Ing. Petra Zajkoska Selected pharmaceuticals and pesticides as environmental pollutants | doc. Ing. Katarína Dercová, PhD. |
| DT | Ing. Slavomíra Zorádová Biodegradation of Polychlorinated Biphenyls and their Effects on the Cell Membrane of the Bacterial Degraders | doc. Ing. Katarína Dercová, PhD. |
| DisT | Ing. Katarína Furdíková, PhD. | prof. Ing. Fedor Malík, DrSc. |

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| | Axenic cultures of wine yeasts vs. originality of wine | |
| DisT | Mgr. Miroslav Horník, PhD. Biotechnological principles of toxic metals removal from environment | prof. Ing. Jozef Augustín, DrSc. |
| DisT | Ing. Tomáš Lobpreis Development and application of passive sampling methods for monitoring of bioavailability and ecotoxicity of organic contaminants in the environment | doc. Ing. Katarína Dercová, PhD. |
| DisT | Ing. Marianna Vítková, PhD. The Effect of Humic Substances on Biodegradation and Bioremediation of Chloroaromatics in Soils | doc. Ing. Katarína Dercová, PhD. |

Selected publications

Journals

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Projects

APVV

| | |
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| Project Code: | APVV-0158-07 |
| Title (sl.): | Využitie potenciálu kyslomliečnych baktérií v ekosystéme syrov za účelom zvýšenia zdravotnej bezpečnosti. |
| Title (eng.): | Exploitation of potential of lactic acid bacteria in cheese ecosystem for improvement of health safety |
| Project duration: | 01.09.2008 - 31.12.2010 |
| Responsible person: | doc. Ing. Mária Greifová, PhD. |

VEGA

| | |
|---------------------|---|
| Project Code: | 1/0438/08 |
| Title (sl.): | In vitro hodnotenie prestupu kožou a účinnosti antioxidačných a UV fotoprotectorívnych látok. |
| Title (eng.): | In vitro assesment of skin penetration and efficacy of antioxidants and UV protectives |
| Project duration: | 01.01.2008 - 31.12.2010 |
| Responsible person: | doc. Ing. Jarmila Hojerová, PhD. |

VEGA

| | |
|---------------------|---|
| Project Code: | 1/0570/08 |
| Title (sl.): | Predĺženie trvanlivosti a zvýšenie nutričnej hodnoty pekárenských výrobkov. |
| Title (eng.): | Prolongation of shelf-life and enhancing nutritional value of baked goods |
| Project duration: | 01.01.2008 - 31.12.2010 |
| Responsible person: | Ing. Zlatica Kohajdová, PhD. |

VEGA

| | |
|---------------------|---|
| Project Code: | 1/0746/08 |
| Title (sl.): | Štúdium vplyvu rizikových faktorov na bezpečnosť požívateľstva a kozmetických prípravkov. |
| Title (eng.): | Study of the risk factors influence on the safety of food and cosmetic products. |
| Project duration: | 01.01.2008 - 31.12.2010 |
| Responsible person: | prof. Ing. Štefan Schmidt, PhD. |

VEGA

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|---------------------|--|
| Project Code: | 1/0234/09 |
| Title (sl.): | Štúdium vlastností vybraných potravín a ich vplyv na kvalitu a bezpečnosť potravín a zdravie obyvateľstva. |
| Title (eng.): | Study of selected food components and their influence on foods quality and population health. |
| Project duration: | 01.01.2009 - 31.12.2011 |
| Responsible person: | Ing. Ladislav Staruch, PhD. |

List of bachelor (BT), diploma (DT) and dissertation (DissT) theses

| Type | Final thesis | Supervisor |
|------|---|---------------------------------------|
| BT | Bc. Michal Bončík Yogurt our daily | doc. Ing. Mária Greifová, PhD. |
| BT | Bc. Tatiana Cimermanová Advantages and disadvantages of microwave heating of food | doc. Ing. Stanislav Sekretár, CSc. |
| BT | Bc. Petronela Iglarčíková Potatoes – source of antioxidant in people diet | Ing. Gabriel Greif, PhD. |
| BT | Bc. Lucia Kovačičová Ecology of Lactobacilli in the Human Body | doc. Ing. Mária Greifová, PhD. |
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| DT | Ing. Ivana Kolesárová The Protective Effect of Antioxidants During Microwave Heating of Fats | doc. Ing. Stanislav Sekretár, CSc. |
| DT | Ing. Michal Macák Influence of application rosemary and probiotics cultures on the stability fermented meat products | Ing. Ladislav Staruch, CSc. |
| DT | Ing. Michal Magala Significance of Legumes in Bakery Technology | Ing. Zlatica Kohajdová, PhD. |
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| DT | Ing. Eszter Pálsová Application and influence of lactic acid bacteria on the quality and safety of cheeses | doc. Ing. Mária Greifová, PhD. |
| DT | Ing. Matej Poláčko In Vitro Study the Antimicrobial Activity of Selected Substances Against Paenibacillus larvae, Causal Agent of American Foulbrood | doc. Ing. Mária Greifová, PhD. |

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| DT | Ing. Andrea Romančáková Sensory evaluation of meat products | Ing. Ladislav Staruch, CSc. |
| DT | Ing. Lucia Szeifová The oxidative Stability of Linseed Oil and Lipid Extract of Soya Spread with Added Linseeds | prof. Ing. Štefan Schmidt, CSc. |
| DT | Ing. Lenka Vrbíková Determination of Selected Analytical Parameters in Sheep Cheese | Ing. Zlatica Kohajdová, PhD. |
| DisT | Ing. Ľubomír Daško, PhD. Analysis and presence of mycotoxins in foods | Ing. Milan Kováč, CSc. |
| DisT | Ing. Jarmila Lehkoživová, PhD. The Physical-Chemical Methods in Quality and Authenticity Evaluation of the Food Products | doc. Ing. Jolana Karovičová, PhD. |
| DisT | Ing. Ivana Šimonová, PhD. Quality – the nutritional value of lactic acid fermented vegetable juices | doc. Ing. Jolana Karovičová, PhD. |

Selected publications

Journals

Current Contents Publications

- ADC1 **Bilaničová, Dagmar [20%]** - Mastihuba, Vladimír [20%] - Mastihubová, Mária [20%] - Bálešová, Jana [20%] - **Schmidt, Štefan** [20%]: Improvements in enzymatic preparation of alkyl glycosides. - , 2010.
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- ADC2 Marcinčák, Slavomír [16%] - Buleca, Ján, Jr. [14%] - Popelka, Peter [14%] - Marcinčáková, Dana [14%] - **Staruch, Ladislav** [14%] - Zöldág, László [14%] - Maťa, Pavel [14%]: Influence of dietary linseed and probiotics on oxidative stability and sensory properties of pork.
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- ADC3 Pipek, Petr [30%] - Rohlík, Bo-Anne [30%] - Lojková, Anna [10%] - **Staruch, Ladislav** [30%]: Suppression of Mould Growth on Dry Sausages.
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- ADE1 **Kohajdová, Zlatica** [70%] - **Karovičová, Jolana** [30%]: Chemical characterisation and pasting properties of commercial Slovak common and spelt wheat flours. - , 2009.
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- ADE3 **Staruch, Ladislav** [60%] - **Mati, Marcel** [40%]: Nutričné postavenie mäsa vo výžive V - Mäso vodnej hydiny.
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- AEC1 **Staruch, Ladislav** [60%] - Pipek, Petr [30%] - Jaworska, Gražina [10%]: Dry sausages and growth of the moulds on their surface.
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- AED3 Kalafiová, A. [10%] - **Staruch, Ladislav** [10%] - Kováčik, Jaroslav [10%] - Capcarová, Marcela [10%] - Massányi, Peter [10%] - Kolesárová, Adriana [10%] - Lukáč, Norbert [10%] - Schneidgenová, Monika [10%] - Čupka, Peter [10%] - Jurčík, Rastislav [10%]: Koncentrácie vápnika, sodíka a horčíka v svalovom tkanive králikov po experimentálnom podaní niklu a zinku.
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- AED4 **Kreps, František** [50%] - **Schmidt, Štefan** [20%] - **Sekretár, Stanislav** [20%] - **Hlášniková, Jarmila** [10%]: Vplyv syntetického antioxidantu BHT na oxidované rastlinné oleje.
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- AED5 Pouštková, Ivana [70%] - Babička, Luboš [10%] - Peterková, I. [10%] - **Staruch, Ladislav** [10%]: Profil mastných kyselin v netradičných rostlinných olejoch.
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- AED8 **Sekretár, Stanislav** [50%] - **Hlášniková, Jarmila** [20%] - **Schmidt, Štefan** [10%] - **Kolesárová, Ivana** [10%] - **Kreps, František** [10%]: Aktívne a inteligentné balenie potravín.
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- AED9 **Sekretár, Stanislav** [50%] - **Hlášniková, Jarmila** [20%] - **Schmidt, Štefan** [10%] - **Kolesárová, Ivana** [10%] - **Kreps, František** [10%]: Novodobé funkcie potravinárskych obalov.
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- AED10 **Staruch, Ladislav** [80%] - Šajbidor, Ján [20%]: Fermentované mäsové výrobky s aplikáciou probiotických kultúr.
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- AED11 **Staruch, Ladislav** [80%] - **Mati, Marcel** [20%]: Vplyv antioxidantov -tokoferolov na stabilitu fermentovaných mäsových výrobkov.
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- AED13 Šajbidor, Ján [80%] - **Staruch, Ladislav** [20%]: Netradičné zdroje polynenasýtených mastných kyselín.
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- AFC1 **Greif, Gabriel** [35%] - **Greifová, Mária** [30%] - **Sopčáková, Zuzana** [20%] - **Karovičová, Jolana** [10%] - Tomaška, Martin [5%]: Produkcia organických kyselín a biogénnych amínov baktériami NSLAB izolovanými z bryndze.
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- AFC2 **Greifová, Mária** [50%] - **Greif, Gabriel** [35%] - **Krajčová, Eva** [15%]: Potenciál laktobacilov prirodzene prítomných v surovom ovčom mlieku.
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- AFC3 **Greifová, Mária** [60%] - **Schmidt, Štefan** [20%] - **Hojerová, Jarmila** [10%] - **Sekretár, Stanislav** [10%]: Sanitácia v potravinárskom priemysle a kozmetike.
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- AFC4 **Greifová, Mária** [30%] - **Greif, Gabriel** [20%] - **Krajčová, Eva** [10%] - **Smetanková, Jana** [20%] - Kontová, Marcela [20%]: Štúdium antimikrobiálnych vlastností laktobacilov izolovných zo surového mlieka.
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- AFC5 Kontová, Marcela [20%] - Drončovský, Maroš [20%] - Slottová, Anna [10%] - **Greif, Gabriel** [10%] - **Greifová, Mária** [10%] - Kološta, Miroslav [10%] - Tomaška, Martin [20%]: Aktivita lactobacillus rhamnosus študovaná v modelových polotvrdých syroch.
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- AFC7 Marcinčáková, Dana [50%] - Čertík, Milan [10%] - Marcinčák, Slavomír [10%] - Šimková, Jana [10%] - **Staruch, Ladislav** [10%] - Popelka, Peter [10%]: Účinok skrmovania klinčeka a ľanového semena na kvalitu mäsa brojlerových kurčiat.
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- AFC8 **Medovčíková, Andrea** [40%] - **Hojerová, Jarmila** [30%] - **Lucová, Marianna** [10%] - **Klimová, Zuzana** [10%] - Dragúňová, Jana [10%]: Riziká prestupu UV filtrov do kože.
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- AFC9 Mikušová, Lucia [60%] - Petruláková, Zuzana [5%] - Valachovičová, Martina [15%] - Duchoňová, Lenka [5%] - Mošovská, Silvia [5%] - Brindzová, Lucia [2%] - **Staruch, Ladislav** [2%] - Šturdík, Ernest [6%]: Effect of white-rye bread with enhanced fibre and antioxidant content on glycemic response.
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- AFC10 **Pažoureková, Silvia** [50%] - **Hojerová, Jarmila** [30%] - **Lucová, Marianna** [20%]: Does Coenzyme Q10 (Ubiquinone 10) have the Potential to Permeate into the Skin Structures?

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- AFC11 **Sekretár, Stanislav** [50%] - **Hlásníková, Jarmila** [20%] - **Schmidt, Štefan** [10%] - **Kolesárová, Ivana** [10%] - **Kreps, František** [10%]: Úloha obalu a skladovania pri antioxidačnej ochrane tukov.
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- AFC12 **Smetanková, Jana** [35%] - **Sopčáková, Zuzana** [20%] - **Greif, Gabriel** [25%] - **Greifová, Mária** [20%]: Charakteristika technologických a ochranných vlastností novoizolovaných laktobacilov.
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- AFC13 **Sopčáková, Zuzana** [35%] - **Smetanková, Jana** [10%] - **Greifová, Mária** [25%] - **Greif, Gabriel** [20%] - **Pálosová, Eszter** [10%]: Význam a aplikácia ochranných kysomliečnych baktérií voči Staphylococcus aureus in vitro.
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- AFD3 **Bělková, Bo-Anne** [30%] - **Pipek, Petr** [40%] - **Staruch, Ladislav** [30%]: Vliv rozmarínového extraktu na barvu trvanlivých salámú.
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- AFD7 **Greifová, Mária** [30%] - **Greif, Gabriel** [15%] - **Smetanková, Jana** [15%] - **Sopčáková, Zuzana** [15%] - **Kontová, Marcela** [10%] - **Tomaška, Martin** [10%] - **Kološta, Miroslav** [5%]:

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- AFD8 **Greifová, Mária [30%]** - **Krajčová, Eva [20%]** - **Karovičová, Jolana [10%]** - **Kohajdová, Zlatica [10%]** - **Greif, Gabriel [30%]**: Separácia produktov metabolizmu *Lactobacillus reuteri* : Laboralim 2009.
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- AFD10 Jaworska, Gražina [40%] - Walczycka, M. [30%] - **Dandár, Alexander [30%]**: Adulterations of fruit juices and drinks and methodsof their detecting.
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- AFD11 **Karovičová, Jolana [35%]** - **Kohajdová, Zlatica [35%]** - **Greifová, Mária [15%]** - **Greif, Gabriel [15%]**: Fermentácia zeleninových šťav s využitím mliečnych baktérií a kvasiniek.
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Projects

National project

Project Code: 28160
 Title (sl.): Výskum technológie prípravy derivátov difenylamínu, ako stabilizátora polymérov a olejov.
 Title (eng.): Applied research aimed at the preparation of oil and polymer stabilizers based on diphenylamine derivatives.
 Project duration: 01.12.2008 - 31.12.2010
 Responsible person: **Šimon Peter, prof. DSc.**

APVV

Project Code: APVV-0055-07
 Title (sl.): Spektroskopická analýza prírodných a syntetických derivátov chinolínov s fotochemickými a fotobiologickými vlastnosťami.
 Title (eng.): Spectroscopic analysis of natural and synthetic quinoline derivatives with photochemical and photobiological properties.
 Project duration: 01.06.2008 - 31.12.2010
 Responsible person: **Vlasta Brezová, prof. DSc.**

APVV

Project Code: APVV-0093-07
 Title (sl.): Molekulový dizajn modelových systémov "modrých" meďnatých proteínov ako zdrojov energie.
 Title (eng.): Molecular design of "blue" copper protein model systems as power resources.
 Project duration: 01.09.2008 - 31.12.2010
 Responsible person: **Stanislav Biskupič, prof. DSc.**

VEGA

Project Code: 1/0575/08

Annual Report 2010

| | |
|---------------------|--|
| Title (sl.): | Syntéza, spektroskopické vlastnosti a biologická aktivita komplexných zlúčenín prechodných prvkov s SOD aktivitou. |
| Title (eng.): | Synthesis, spectral properties and biological activity of metal-dependent SOD mimetic compounds |
| Project duration: | 01.01.2008 - 30.12.2010 |
| Responsible person: | Marián Valko, prof. DSc. |

VEGA

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| Project Code: | 1/0817/08 |
| Title (sl.): | Extrakcia chemických a fyzikálnochemických vlastností z difrakčných dát. |
| Title (eng.): | The extraction of chemical and physico-chemical properties from diffraction data. |
| Project duration: | 01.01.2008 - 31.12.2010 |
| Responsible person: | Jozef Kožíšek, assoc. prof. PhD. |

VEGA

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| Project Code: | 1/0018/09 |
| Title (sl.): | Štúdium indukovaného prenosu elektrónu v prírodných a syntetických systémoch. |
| Title (eng.): | Study on induced electron transfer in natural and synthetic systems. |
| Project duration: | 01.01.2009 - 31.12.2011 |
| Responsible person: | Vlasta Brezová, prof. DSc. |

VEGA

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| Project Code: | 1/0091/09 |
| Title (sl.): | Využitie opotrebovaných fritovacích olejov vo výrobe metylesterov mastných kyselín. |
| Title (eng.): | Utilization of used frying oils in the fatty acid methyl esters production. |
| Project duration: | 01.01.2009 - 31.12.2011 |
| Responsible person: | Ján Cvengroš, assoc. prof. DSc. |

VEGA

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| Project Code: | 1/0127/09 |
| Title (sl.): | Vývoj a aplikácia metód na štúdium systémov s neobvyklou elektrónovou štruktúrou. |
| Title (eng.): | Development and application of the methods for the study of the systems with unusual electron structure. |
| Project duration: | 01.01.2009 - 31.12.2011 |
| Responsible person: | Stanislav Biskupič, prof. DSc. |

VEGA

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| Project Code: | 1/0660/09 |
| Title (sl.): | Materiály – fyzikálnochemické metódy štúdia ich stability a degradácie. |
| Title (eng.): | Materials – physicochemical methods of their stability and degradation. |
| Project duration: | 01.01.2009 - 31.12.2011 |
| Responsible person: | Peter Šimon, prof. DSc. |

KEGA

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| Project Code: | 3/6285/08 |
| Title (sl.): | Vzdelávanie stredoškolských učiteľov chémie a biológie zamerané na |

| | |
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| Title (eng.): | osvojenie si nových poznatkov z oblasti prírodných vied, chemických a potravinárskych technológií a ekológie a na výučbu prírodovedných predmetov na stredných školách pomocou integrovaných laboratórnych aktivít v rámci kurikulárnej transformácie |
| Project duration: | Further education of secondary school teachers focused on current knowledge in the field of science, chemical and food technology and ecology and teaching of science at secondary schools employing integrated laboratory practices in the framework of curricular transformation. |
| Responsible person: | 01.01.2008 - 31.12.2010 |
| | Pavel Kovařík, assoc. prof. PhD. |

Intergovernmental agreement

| | |
|---------------------|---|
| Project Code: | SK-AT-0016-08 |
| Title (eng.): | Electron-transfer induced processes in technology and biology. Reactivity and structural aspects. |
| Title (sl.): | Procesy indukovaného prenosu elektrónu v technológii a biológií. Vzťahy medzi reaktivitou a štruktúrou. |
| Project duration: | 01.02.2009 - 31.12.2010 |
| Responsible person: | Dana Dvoranová, assoc. prof. PhD. |

Intergovernmental agreement

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| Project Code: | SK-AT-0018-08 |
| Title (eng.): | Electronic structure of coordination compounds |
| Title (sl.): | Elektrónová štruktúra koordinačných zlúčenín |
| Project duration: | 01.02.2009 - 31.12.2010 |
| Responsible person: | Jozef Kožíšek, assoc. prof. PhD. |

List of bachelor (BT), diploma (DT) and dissertation (DisT) theses

| Type | Final thesis | Supervisor |
|------|---|----------------------------------|
| BT | Bc. Michaela Belovičová EPR Spektroscopy of Cu(II) Complexes in Solid State | prof. Ing. Marián Valko, DrSc. |
| BT | Bc. Jana Bošiaková UV-Vis spectroelectrochemistry of natural antioxidants in aqueous and non-aqueous environments | doc. Ing. Peter Rapta, DrSc. |
| BT | Bc. Sandra Dorotíková Photochemical Reactions of Drug Irinotecan in Non-aqueous Systems in the Presence of Iron Ions (EPR and UV/Vis Study) | doc. Ing. Dana Dvoranová, PhD. |
| BT | Bc. Andrea Kramárová Spectroscopic Study on Photochemical Reactions of Drug Irinotecan in Non-aqueous Systems in the Presence of Cobalt Ions | doc. Ing. Dana Dvoranová, PhD. |
| BT | Bc. Michal Lendel Study of Quinolone Derivatives by Infrared Spectroscopy | doc. Ing. Dana Dvoranová, PhD. |
| BT | Bc. Ľudmila Sekeráková EPR Investigation of Radical Intermediates in Titania Suspensions | prof. Ing. Vlasta Brezová, DrSc. |
| BT | Bc. Peter Škorňa Theoretical Study of Antioxidant Potention of Sterols | doc. Ing. Erik Klein, PhD. |
| BT | Bc. Michal Štujber Imaging Techniques in Magnetic Resonance | prof. Ing. Marián Valko, DrSc. |
| DT | Ing. Miroslava Bobeničová Spectroscopic Study of Biologically Active Drug Irinotecan | doc. Ing. Dana Dvoranová, PhD. |
| DT | Ing. Andrea Černá | Ing. Zuzana Cibulková, PhD. |

| | | |
|------|---|--------------------------------------|
| | Thermooxidative stability of styrene-butadiene rubber with addition of several antioxidants studied by DSC method | |
| DT | Ing. Lukáš Gaňa NMR spectroscopy of grape must, „burčiak“, „rampáš“ and new wine | doc. RNDr. Milan Mazúr, DrSc. |
| DT | Ing. Mariana Slováková Spectroelectrochemistry of Wines | doc. Ing. Peter Raptá, DrSc. |
| DT | Ing. Adam Vágánek Thermodynamics Study of Antioxidant Action of Natural Polyphenolic Substances | doc. Ing. Erik Klein, PhD. |
| DisT | RNDr. Štefan Boor, PhD. Použitie neurónových sietí ku korelácií štruktúry a vlastností molekúl Application of Neural Networks in Quantitative Structure-Property Correlation of Molecules | prof. Ing. Vladimír Kvasnička, DrSc. |
| DisT | Ing. Andrea Kleinová, PhD. Preparation and properties of chemically modified higher fatty acids and their esters | doc. Ing. Ján Cvengroš, DrSc. |
| DisT | Ing. Katarína Matuszná, PhD. Study of Electro-optical Properties of Conjugated Hydrocarbons Imaging Techniques in Magnetic Resonance | doc. Ing. Martin Breza, CSc. |

Selected publications

Journals

Current Contents Publications

- ADC1 Bella, Maroš [30%] - Schultz, Marcel [20%] - Milata, Viktor [20%] - Koňáriková, Katarína [15%] - **Breza, Martin** [15%]: Application of the Gould-Jacobs reaction to 4-amino-2,1,3-benzoselenadiazole.
In: Tetrahedron. - ISSN 0040-4020. - Vol. 66, Iss. 41 (2010), s. 8169-8174
- ADC2 **Bellovičová, Lenka** [30%] - **Kožíšek, Jozef** [30%] - Doháňšová, Jana [20%] - Lásiková, Angelika [10%] - Gracza, Tibor [10%]: Rac-(3aR,6aR)-(E)-Methyl 2-(3a-methylperhydrofuro[3,2-b]furan-2-ylidene)acetate.
In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E66 (2010), O2381-U930
- ADC3 Boča, Roman [25%] - Šalitroš, Ivan [25%] - **Kožíšek, Jozef** [20%] - Linares, Jorge [5%] - Moncol', Ján [20%] - Renz, Franz [5%]: Spin crossover in a heptanuclear mixed-valence iron complex. - , 2010.
In: Dalton Transactions. - ISSN 1477-9226. - Vol. 39, Iss. 9 (2010), s. 2198-2200
- ADC4 **Breza, Martin** [60%] - Bučinský, Lukáš [20%] - **Šoralová, Stanislava** [15%] - **Biskupič, Stanislav** [5%]: On the origin of the hemidirected geometry of tetracoordinated lead(II) compounds. - , 2010.
In: Chemical Physics. - ISSN 0301-0104. - Vol. 368, Iss. 1-2. - , 2010, s. 14-19
- ADC5 **Brezová, Vlasta** [25%] - Billik, Peter [25%] - Vrecková, Zuzana [25%] - Plesch, Gustav [25%]: Photoinduced formation of reactive oxygen species in suspensions of titania mechanochemically synthesized from TiCl4. - , 2010.
In: Journal of Molecular Catalysis A-Chemical. - ISSN 1381-1169. - Vol. 327, Iss. 1-2 (2010), s. 101-109
- ADC6 Chen, Ning [20%] - Klod, Sabrina [20%] - **Rapta, Peter** [20%] - Popov, A.Alexej [20%] - Dunsch, Lothar [20%]: Direct Arc-Discharge Assisted Synthesis of C60H2(C3H5N): A cis-1-Pyrrolino C-60 Fullerene Hydride with Unusual Redox Properties. - , 2010.
In: Chemistry of Materials. - ISSN 0897-4756. - Vol. 22, Iss. 8 (2010), s. 2608-2615
- ADC7 **Cibulková, Zuzana** [50%] - **Šimon, Peter** [20%] - Lehocký, Peter [10%] - Kosár, Karol [10%] -

- Uhlár, Ján [10%]: DSC study of the influence of p-substituted diphenyl amines on the thermooxidative stability of styrene-butadiene rubber.
In: Journal of Thermal Analysis and Calorimetry. - ISSN 1388-6150. - Vol. 101, Iss. 2 (2010), s. 679-684
- ADC8 Gowda, Thimme D. [30%] - Tokarčík, Miroslav [30%] - Rodrigues, Vinola Zeena [15%] - **Kožíšek, Jozef** [15%] - Fuess, Hartmut [10%]: N,N'-Bis(2-chlorophenyl)propanediamide.
In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E66 (2010), o3038
- ADC9 Gowda, Thimme D. [30%] - Tokarčík, Miroslav [30%] - Rodrigues, Vinola Zeena [15%] - **Kožíšek, Jozef** [15%] - Fuess, Hartmut [10%]: N,N'-Bis(3-methylphenyl)propanediamide.
In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E66 (2010), o3037
- ADC10 Gowda, Thimme D. [30%] - Tokarčík, Miroslav [30%] - Rodrigues, Vinola Zeena [10%] - **Kožíšek, Jozef** [20%] - Fuess, Hartmut [10%]: N,N'-Diphenylsuberamide. - , 2010.
In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E66 (2010), o1363
- ADC11 Gowda, Thimme D. [30%] - Tokarčík, Miroslav [30%] - Shakuntala, K. [15%] - **Kožíšek, Jozef** [15%] - Fuess, Hartmut [10%]: N-(2-Methylphenyl)maleamic acid. - , 2010.
In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E66 (2010), s. 1554
- ADC12 Gowda, Thimme D. [30%] - Tokarčík, Miroslav [30%] - **Kožíšek, Jozef** [25%] - Shakuntala, K. [10%] - Fuess, Hartmut [5%]: N-(2,4,5-Trichlorophenyl)maleamic acid. - , 2010.
In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E66. - , 2010, s. 182-183
- ADC13 Gowda, Thimme D. [30%] - Tokarčík, Miroslav [30%] - **Kožíšek, Jozef** [25%] - Shakuntala, K. [10%] - Fuess, Hartmut [5%]: N-(2,4,6-Trimethylphenyl)maleamic acid. - , 2010.
In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E65 (2009), o2945
- ADC14 Gowda, Thimme D. [30%] - Tokarčík, Miroslav [30%] - **Kožíšek, Jozef** [25%] - Rodrigues, Vinola Zeena [10%] - Fuess, Hartmut [5%]: N-(2,5-Dimethylphenyl)-2-methylbenzamide. - , 2010.
In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E66 (2010), o815
- ADC15 Gowda, Thimme D. [30%] - Tokarčík, Miroslav [30%] - Shakuntala, K. [15%] - **Kožíšek, Jozef** [15%] - Fuess, Hartmut [10%]: N-(3-Chlorophenyl)maleamic acid. - , 2010.
In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E66 (2010), o1643
- ADC16 Gowda, Thimme D. [30%] - Tokarčík, Miroslav [30%] - Shakuntala, K. [15%] - **Kožíšek, Jozef** [15%] - Fuess, Hartmut [10%]: N-(3-Nitrophenyl)maleamic acid. - , 2010.
In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E66 (2010), o1671-o1672
- ADC17 Gowda, Thimme D. [30%] - Tokarčík, Miroslav [30%] - Shakuntala, K. [15%] - **Kožíšek, Jozef** [15%] - Fuess, Hartmut [10%]: N-(3,4-Dichlorophenyl)maleamic acid. - , 2010.
In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E66 (2010), o1642
- ADC18 Gowda, Thimme D. [30%] - Tokarčík, Miroslav [30%] - **Kožíšek, Jozef** [25%] - Shakuntala, K. [10%] - Fuess, Hartmut [5%]: N-(3,4-Dimethylphenyl)maleamic acid. - , 2010.
In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E65 (2009), o2874
- ADC19 Gowda, Thimme D. [30%] - Tokarčík, Miroslav [30%] - **Kožíšek, Jozef** [25%] - Shakuntala, K. [10%] - Fuess, Hartmut [5%]: N-(3,5-Dichlorophenyl)maleamic acid. - , 2010.
In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E66. - , 2010, s. 51
- ADC20 Gowda, Thimme D. [30%] - Tokarčík, Miroslav [30%] - **Kožíšek, Jozef** [25%] - Rodrigues, Vinola Zeena [10%] - Fuess, Hartmut [5%]: N-(3,5-Dimethylphenyl)-2-methylbenzamide. - , 2010.
In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN

- 1600-5368. - E66 (2010), o843
- ADC21 Gowda, Thimme D. [25%] - Tokarčík, Miroslav [25%] - Shakuntala, K. [20%] - **Kožíšek, Jozef** [20%] - Fuess, Hartmut [10%]: N-(4-Methoxyphenyl)maleamic acid. - , 2010.
In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E66 (2010), o1529
- ADC22 Gowda, Thimme D. [30%] - Tokarčík, Miroslav [30%] - Rodrigues, Vinola Zeena [15%] - **Kožíšek, Jozef** [15%] - Fuess, Hartmut [10%]: 2-Chloro-N-(2,3-dimethylphenyl)benzamide.
In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E66 (2010), o1897
- ADC23 Gowda, Thimme D. [30%] - Tokarčík, Miroslav [30%] - Rodrigues, Vinola Zeena [15%] - **Kožíšek, Jozef** [15%] - Fuess, Hartmut [10%]: 3-Methyl-N-(2-methylphenyl)benzamide. - , 2010.
In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E66 (2010), o1849
- ADC24 Gróf, Martin [30%] - **Gatial, Anton** [30%] - Milata, Viktor [10%] - Prónayová, Nadežda [10%] - **Kožíšek, Jozef** [5%] - **Breza, Martin** [5%] - Matějka, Pavel [10%]: Conformational and isomerizational studies of 3-N,N-dimethylhydrazino-2-acetyl propenenitrile using X-ray analysis, NMR and vibrational spectra, and ab initio calculations.
In: Journal of Molecular Structure. - ISSN 0022-2860. - Vol. 938, Iss. 1-3 (2009), s. 97-110
- ADC25 Hrabárová, Eva [25%] - Valachová, Katarína [25%] - **Rapta, Peter** [25%] - Šoltés, Ladislav [25%]: An alternative standard for Trolox-equivalent antioxidant-capacity estimation based on thiol antioxidants. Comparative 2,2'-azinobis[3- ethylbenzothiazoline-6-sulfonic zcid] decolorization and rotational viscometry study regarding hyaluronan degradation.
In: Chemistry & Biodiversity. - ISSN 1612-1872. - Vol. 7, Iss. 9 (2010), s. 2191-2200
- ADC26 Hrabárová, Eva [15%] - Valachová, Katarína [15%] - Rychlý, Jozef [14%] - **Rapta, Peter** [14%] - Sasinková, Vlasta [14%] - Malíková, Marta [14%] - Šoltés, Ladislav [14%]: High-molar-mass hyaluronan degradation by Weissberger's system: Pro-and anti-oxidative effects of some thiol compounds. - , 2009.
In: Polymer Degradation and Stability. - ISSN 0141-3910. - Vol. 94, Iss. 10. - , 2009, s. 1867-1875
- ADC27 Hricovíniová, Zuzana [40%] - **Zalibera, Michal** [30%] - Hricovíni, Miloš [30%]: Microwave-assisted regioselective synthesis and isomerization of 6-O-vanillyl- and 6-O-iso-vanillyl hexoses and studies of their activities as radical scavengers by EPR spectroscopy.
In: Tetrahedron: Asymmetry. - ISSN 0957-4166. - Vol. 21, Iss. 6 (2010), s. 756-761
- ADC28 Hudák, Martin [10%] - Jayatilaka, Dylan [30%] - **Perašínová, Lucia** [10%] - **Biskupič, Stanislav** [10%] - **Kožíšek, Jozef** [10%] - Bučinský, Lukáš [30%]: X-ray constrained unrestricted Hartree-Fock and Douglas-Kroll-Hess wavefunction.
In: Acta crystallographica. Section A. Foundations of crystallography. - ISSN 0108-7673. - Vol. 66, Part 1 (2010), s. 78-92
- ADC29 Idzik, Krzysztof [20%] - **Rapta, Peter** [20%] - Cywinski, Piotr J. [20%] - Beckert, Rainer [20%] - Dunsch, Lothar [20%]: Synthesis and electrochemical characterization of new optoelectronic materials based on conjugated donor-acceptor system containing oligo-tri(heteroaryl)-1,3,5-triazines.
In: Electrochimica Acta. - ISSN 0013-4686. - Vol. 55, Iss. 17 (2010), s. 4858-4864
- ADC30 Jomová, Klaudia [50%] - Zelenický, Ľubomír [10%] - Morris, H. [10%] - **Mazúr, Milan** [10%] - **Valko, Marián** [20%]: Chemo-mechanical coupling in molecular motors interpreted through the uncertainty relations.
In: Chemical Physics. - ISSN 0301-0104. - Vol. 372, Iss. 1-3 (2010), s. 13-16
- ADC31 **Matis, Martin** [20%] - **Rapta, Peter** [20%] - Lukeš, Vladimír [20%] - Hartmann, Horst [20%] - Dunsch, Lothar [20%]: Highly Charged Cations from N,N,N',N'-Tetrakis(4-aminophenyl)benzidine and Its N,N,N',N'-Tetrakis(4-methoxyphenyl)-Substituted Homologue Studied by Thin-Layer in Situ Electron Spin Resonance/UV-Vis-NIR Spectroelectrochemistry. - , 2010.
In: Journal of Physical Chemistry B. - ISSN 1520-6106. - Vol. 114, Iss. 13 (2010), s. 4451-4460
- ADC32 Medvecká, Jana [15%] - Vasková, Zuzana [15%] - Maroszová /Macková, Jaroslava [15%] - Moncoľ, Ján [15%] - Koman, Marián [10%] - Lis, Tadeusz [5%] - **Mazúr, Milan** [10%] - Valigura,

- Dušan [15%]: One-Dimensional and Two-Dimensional Coordination Polymers of Copper(II) Nitrobenzoate with Bridging 3-Pyridylmethanol Ligand. - , 2010.
In: Zeitschrift für anorganische und allgemeine Chemie. - ISSN 0044-2313. - Vol. 636, Iss. 3-4 (2010), s. 589-594
- ADC33 Mikulec, Jozef [10%] - **Cvengroš, Ján** [40%] - Joríková, Ľudmila [5%] - Banič, Marek [5%] - **Kleinová, Andrea** [40%]: Second generation diesel fuel from renewable sources. - , 2010.
In: Journal of Cleaner Production. - ISSN 0959-6526. - Vol. 18, Iss. 9 (2010), s. 917-926
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Projects

APVV

Project Code: LPP-0230-09
 Title (sl.): Fyzika a chémia v našom živote dnes a zajtra.
 Title (eng.): Physics and chemistry in our life today and tomorrow.
 Project duration: 01.09.2009 - 01.09.2012
 Responsible person: **Oľga Holá, assoc. prof. PhD.**

VEGA

Project Code: 1/0774/08
Title (sl.): Transportné vlastnosti vodivých polymérov a sietí z uhlíkových nanotrubíc.
Title (eng.): Transport properties of conducting polymers and carbon nanotube networks.
Project duration: 01.01.2008 - 31.12.2010
Responsible person: **Pavol Fedorko, assoc. prof. PhD.**

VEGA

Project Code: 1/0137/09
Title (sl.): Štúdium vzťahov medzi fyzikálnymi vlastnosťami, energetikou a štruktúrou aromatických zlúčenín s potenciálnymi antioxidačnými účinkami.
Title (eng.): The study of relationships between the physical properties, energetics and structure of aromatic compounds with potential antioxidant action.
Project duration: 01.01.2009 - 31.12.2011
Responsible person: **Vladimír Lukeš, assoc. prof. PhD.**

Intergovernmental agreement

Project Code: SK-AT-0002-08
Title (eng.): Semiempirical molecular dynamics study of pi-conjugated systems
Title (sl.): Štúdium pi-konjugovaných systémov semiempirickou molekulovou dynamikou
Project duration: 01.02.2009 - 31.12.2010
Responsible person: **Vladimír Lukeš, assoc. prof. PhD.**

List of bachelor (BT) and diploma (DT) theses

| Type | Final thesis | Supervisor |
|------|--|--------------------------------|
| BT | Bc. Tibor Veselý The DFTB Calculations of Reaction Enthalpies Related to Antioxidant Action of Phenols | doc. Ing. Vladimír Lukeš, PhD. |
| DT | Ing. Vladimír Sládek Theoretical Study on Structural and Physical Properties of Model Dimethylsulfoxide Complexes with Lithium, Copper and Camptothecin | doc. Ing. Vladimír Lukeš, PhD. |

Selected publications

Journals

Current Contents Publications

- ADC1 Breza, Martin [60%] - **Bučinský, Lukáš** [20%] - Šoralová, Stanislava [15%] - Biskupič, Stanislav [5%]: On the origin of the hemidirected geometry of tetracoordinated lead(II) compounds. - , 2010.
In: Chemical Physics. - ISSN 0301-0104. - Vol. 368, Iss. 1-2. - , 2010, s. 14-19
- ADC2 **Fedorko, Pavol** [50%] - Trznadel, M. [10%] - Pron, Adam [10%] - Djurado, D. [10%] - Planes, J. [10%] - Travers, J.P. [10%]: New analytical approach to the insulator-metal transition in conductive polyaniline.

- In: Synthetic Metals. - ISSN 0379-6779. - Vol. 160, Iss. 15-16 (2010), s. 1668-1671
- ADC3 Gowrys, Paweł [10%] - Djurado, D. [10%] - **Rimarcík, Ján** [10%] - Kornet, Aleksandra [10%] - Boudinet, Damien [10%] - Verilhac, Jean-Marie [10%] - **Lukeš, Vladimír** [10%] - Wielgus, Ireneusz [10%] - Zagorska, Małgorzata [10%] - Pron, Adam [10%]: Effect of N-Substituents on Redox, Optical, and Electronic Properties of NaphthaleneBisimides Used for Field-Effect Transistors Fabrication. - , 2010.
In: Journal of Physical Chemistry B. - ISSN 1520-6106. - Vol. 114, Iss. 5. - , 2010, s. 1803-1809
- ADC4 Gowda, Thimme D. [30%] - **Tokarčík, Miroslav** [30%] - Rodrigues, Vinola Zeena [15%] - Kožíšek, Jozef [15%] - Fuess, Hartmut [10%]: N,N'-Bis(2-chlorophenyl)propanediamide.
In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E66 (2010), o3038
- ADC5 Gowda, Thimme D. [30%] - **Tokarčík, Miroslav** [30%] - Rodrigues, Vinola Zeena [15%] - Kožíšek, Jozef [15%] - Fuess, Hartmut [10%]: N,N'-Bis(3-methylphenyl)propanediamide.
In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E66 (2010), o3037
- ADC6 Gowda, Thimme D. [30%] - **Tokarčík, Miroslav** [30%] - Rodrigues, Vinola Zeena [10%] - Kožíšek, Jozef [20%] - Fuess, Hartmut [10%]: N,N'-Diphenylsüberamide. - , 2010.
In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E66 (2010), o1363
- ADC7 Gowda, Thimme D. [30%] - **Tokarčík, Miroslav** [30%] - Shakuntala, K. [15%] - Kožíšek, Jozef [15%] - Fuess, Hartmut [10%]: N-(2-Methylphenyl)maleamic acid. - , 2010.
In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E66 (2010), s. 1554
- ADC8 Gowda, Thimme D. [30%] - **Tokarčík, Miroslav** [30%] - Kožíšek, Jozef [25%] - Shakuntala, K. [10%] - Fuess, Hartmut [5%]: N-(2,4,5-Trichlorophenyl)maleamic acid. - , 2010.
In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E66. - , 2010, s. 182-183
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In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E65 (2009), o2945
- ADC10 Gowda, Thimme D. [30%] - **Tokarčík, Miroslav** [30%] - Kožíšek, Jozef [25%] - Rodrigues, Vinola Zeena [10%] - Fuess, Hartmut [5%]: N-(2,5-Dimethylphenyl)-2-methylbenzamide. - , 2010.
In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E66 (2010), o815
- ADC11 Gowda, Thimme D. [30%] - **Tokarčík, Miroslav** [30%] - Shakuntala, K. [15%] - Kožíšek, Jozef [15%] - Fuess, Hartmut [10%]: N-(3-Chlorophenyl)maleamic acid. - , 2010.
In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E66 (2010), o1643
- ADC12 Gowda, Thimme D. [30%] - **Tokarčík, Miroslav** [30%] - Shakuntala, K. [15%] - Kožíšek, Jozef [15%] - Fuess, Hartmut [10%]: N-(3-Nitrophenyl)maleamic acid. - , 2010.
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- ADC13 Gowda, Thimme D. [30%] - **Tokarčík, Miroslav** [30%] - Shakuntala, K. [15%] - Kožíšek, Jozef [15%] - Fuess, Hartmut [10%]: N-(3,4-Dichlorophenyl)maleamic acid. - , 2010.
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- ADC19 Gowda, Thimme D. [30%] - **Tokarčík, Miroslav** [30%] - Rodrigues, Vinola Zeena [15%] - Kožíšek, Jozef [15%] - Fuess, Hartmut [10%]: 3-Methyl-N-(2-methylphenyl)benzamide. - , 2010.
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- ADC20 Haydary, Juma [70%] - Jelemenský, Ľudovít [10%] - Markoš, Jozef [10%] - **Annus, Július** [10%]: A laboratory set-up with a flow reactor for waste tire pyrolysis. - , 2009.
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- ADC21 Hudák, Martin [10%] - Jayatilaka, Dylan [30%] - Perašínová, Lucia [10%] - Biskupič, Stanislav [10%] - Kožíšek, Jozef [10%] - **Bučinský, Lukáš** [30%]: X-ray constrained unrestricted Hartree-Fock and Douglas-Kroll-Hess wavefunction.
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- ADC22 **Ilčin, Michal** [40%] - **Holá, Ol'ga** [20%] - Bakajová, Barbora [20%] - Kučerík, Jiří [20%]: FT-IR study of gamma-radiation induced degradation of polyvinyl alcohol (PVA) and PVA/humic acids blends. - , 2010.
In: Journal of Radioanalytical and Nuclear Chemistry. - ISSN 0236-5731. - Vol. 283, Iss. 1 (2010), s. 9-13
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- ADC24 **Lukeš, Vladimír** [30%] - **Šolc, Roland** [30%] - Lischka, Hans [20%] - Kauffmann, Harald-Friedrich [20%]: Theoretical study of the relations between structure and photophysical properties of model oligofluorescences with central keto defect. - , 2009.
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In: Journal of Theoretical and Computational Chemistry. - ISSN 0219-6336. - Vol. 9, Iss. 1 (2010), s. 249-263
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- ADC27 Matis, Martin [20%] - Rapta, Peter [20%] - **Lukeš, Vladimír** [20%] - Hartmann, Horst [20%] - Dunsch, Lothar [20%]: Highly Charged Cations from N,N,N',N'-Tetrakis(4-aminophenyl)benzidine and Its N,N,N',N'-Tetrakis(4-methoxyphenyl)-Substituted Homologue Studied by Thin-Layer in Situ Electron Spin Resonance/UV-Vis-NIR Spectroelectrochemistry. - , 2010.
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- ADC29 Nemeth, Alexandra [30%] - Milota, Franz [20%] - Mančal, Tomáš [10%] - **Lukeš, Vladimír** [10%] - Hauer, Jurgen [10%] - Kauffmann, Harald-Friedrich [10%] - Sperling, Jaroslaw [10%]: Vibrational wave packet induced oscillations in two-dimensional electronic spectra. I. Experiments. In: Journal of Chemical Physics. - ISSN 0021-9606. - Vol. 132, Iss. 18 (2010), s. 84514-84514
- ADC30 Ponec, Robert [70%] - **Bučinský, Lukáš** [15%] - Gatti, Carlo [15%]: Relativistic Effects on Metal-Metal Bonding: Comparison of the Performance of ECP and Scalar DKH Description on the Picture of Metal-Metal Bonding in Re₂Cl₈ 2-. In: Journal of chemical theory and computation. - ISSN 1549-9618. - Vol. 6, Iss. 10 (2010), s. 3113-3121
- ADC31 Raptá, Peter [20%] - Idzik, Krzysztof [20%] - **Lukeš, Vladimír** [20%] - Beckert, Rainer [20%] - Dunsch, Lothar [20%]: Alternative charge stabilization and different reactivities of 1,3,5-triazine based starburst compounds as studied by in situ ESR-UV/Vis/NIR spectroelectrochemistry. - , 2010. In: Electrochemistry Communications. - ISSN 1388-2481. - Vol. 12, Iss. 4 (2010), s. 513-516
- ADC32 Rimarčík, Ján [16%] - **Lukeš, Vladimír** [14%] - Klein, Erik [14%] - Kelterer, Anne-Marie [14%] - Milata, Viktor [14%] - Vrecková, Zuzana [14%] - Brezová, Vlasta [14%]: Photoinduced processes of 3-substituted 6-fluoro-1,4-dihydro-4-oxoquinoline derivatives: A theoretical and spectroscopic study. - , 2010. In: Journal of Photochemistry and Photobiology A: Chemistry. - ISSN 1010-6030. - Vol. 211, Iss. 1 (2010), s. 47-58
- ADC33 Rimarčík, Ján [25%] - **Lukeš, Vladimír** [25%] - Klein, Erik [25%] - Ilčín, Michal [25%]: Study of the solvent effect on the enthalpies of homolytic and heterolytic N-H. - , 2010. In: Journal of Molecular Structure (Theochem). - ISSN 0166-1280. - Vol. 952, Iss. 1-3 (2010), s. 25-30
- ADC34 Rodrigues, Vinola Zeena [30%] - **Tokarčík, Miroslav** [30%] - Gowda, Thimme D. [20%] - Kožíšek, Jozef [20%]: N-(2-Chlorophenyl)-3-methylbenzamide. - , 2010. In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E66 (2010), o891
- ADC35 Rodrigues, Vinola Zeena [30%] - **Tokarčík, Miroslav** [30%] - Gowda, Thimme D. [20%] - Kožíšek, Jozef [20%]: N-(2,4-Dimethylphenyl)-4-methylbenzamide. - , 2010. In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E66 (2010), o1116
- ADC36 Rodrigues, Vinola Zeena [30%] - **Tokarčík, Miroslav** [30%] - Gowda, Thimme D. [20%] - Kožíšek, Jozef [20%]: N-(2,6-Dimethylphenyl)-3-methylbenzamide. - , 2010. In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E66 (2010), o991
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- ADC38 Shakuntala, K. [25%] - Gowda, Thimme D. [25%] - **Tokarčík, Miroslav** [25%] - Kožíšek, Jozef [25%]: N-(2,5-Dichlorophenyl)maleamic acid. - , 2010. In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E65 (2009), o3119
- ADC39 Šolc, Roland [20%] - **Lukeš, Vladimír** [20%] - Ilčín, Michal [20%] - Raptá, Peter [15%] - Zalibera, Michal [15%] - Dunsch, Lothar [10%]: Semiempirical Molecular Dynamics Study of Empty C₂(3)-C₈₂ Fullerene in Neutral and Charged Forms: Geometrical and Spectroscopic Characterization. - , 2009. In: Journal of Physical Chemistry C. - ISSN 1932-7447. - Vol. 113. - , 2009, s. 19658-19663
- ADC40 Šolc, Roland [20%] - **Lukeš, Vladimír** [20%] - Ilčín, Michal [10%] - Raptá, Peter [20%] - Zalibera, Michal [20%] - Dunsch, Lothar [10%]: Semiempirical molecular dynamics study of

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- ADC41 **Valach, Fedor** [40%] - Grobelny, Roman [20%] - Glowiacz, Tadeusz [10%] - Mrozinski, Jerzy [10%] - **Lukeš, Vladimír** [10%] - Blahová, Zuzana [10%]: Structural study of semi-coordination in a seven-coordinate copper(II) complex: distortion isomerism of [Cu(CH₃COO)₂(4-aminopyridine)₂(H₂O)].
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- ## Other Publications
- ADE1 Bulko, Martin [28%] - Holý, Karol [28%] - Müllerová, Monika [28%] - Polášková, Anna [8%] - **Holá, Oľga** [8%]: Radón vo vonkajšej atmosfére rôznych lokalít Slovenska.
In: Bezpečnosť jaderné energie. - ISSN 1210-7085. - Roč. 18, č. 1/2 (2010), s. 26-29
- ADE2 Omastová, Mária [20%] - Mičušík, Matej [20%] - **Fedorko, Pavol** [20%] - Chehimi, Mohamed M. [20%] - Pionteck, Jurgen [20%]: Effect of Surface Modification of Multiwall Carbon Nanotubes on their Electrical and Surface Properties. - , 2010.
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- ADF1 Klein, Erik [30%] - **Rimarcík, Ján** [40%] - **Lukeš, Vladimír** [30%]: DFT/B3LYP Study of the O?H Bond Dissociation Enthalpies and Proton Affinities of para- and meta-Substituted Phenols in Water and Benzene. - , 2009.
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- ## Published Conference Contributions
- AFC1 Foldesová, Mária [65%] - Hudec, Pavol [5%] - **Holá, Oľga** [30%]: Vplyv kalcinácie na zeolity klinoptilolitového a mordenitového typu. - , 2010.
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- AFC2 Haydary, Juma [60%] - Jelemenský, Ľudovít [10%] - Markoš, Jozef [10%] - **Annus, Július** [20%]: A Laboratory Unit for Waste and Biomass Pyrolysis : Srní - Šumava - Česká Republika, 19.-22.10.2009.
In: CHISA 2009 : Sborník 56. konference chemického a procesního inženýrstva. Srní, Česká Republika, 19.-22.10.2009. - Praha : Česká společnost chemického inženýrství, 2009. - ISBN 978-80-86059-51-8. - nestr.
- AFC3 **Holá, Oľga** [70%] - **Lukeš, Vladimír** [20%] - **Ilčin, Michal** [10%]: Integration of ICT in Teaching Physics and Radiation Protection at the Faculty of Chemical and Food Technology of STU.
In: Information and Communication technology in Education, 13.-16.September, 2010, ČR. - : University of Ostrava, 2010. - ISBN 978-80-7368-775-5. - S. 93-97
- AFC4 **Ilčin, Michal** [30%] - Matis, Martin [20%] - **Lukeš, Vladimír** [25%] - Klein, Erik [10%] - **Holá, Oľga** [15%]: Utilization of Moodle e-learning System in Teaching Physics.
In: Information and Communication technology in Education, 13.-16.September, 2010, ČR. - : University of Ostrava, 2010. - ISBN 978-80-7368-775-5. - S. 99-102
- AFC5 Klein, Erik [50%] - **Lukeš, Vladimír** [15%] - **Rimarcík, Ján** [15%] - **Rottmannová, Lenka** [10%] - **Holá, Oľga** [10%]: Applicability of Coachlab Laboratory Measurement System in Physical Chemistry.
In: Information and Communication technology in Education, 13.-16.September, 2010, ČR. - : University of Ostrava, 2010. - ISBN 978-80-7368-775-5. - S. 107-109
- AFC6 Klein, Erik [25%] - Kovařík, Pavel [25%] - **Rimarcík, Ján** [25%] - **Lukeš, Vladimír** [25%]: Innovation of Equipment for Laboratory Practice in Physical Chemistry and Courses for Secondary-School Teachers. - , 2010.
In: 10th Workshop of Physical Chemists and Electrochemists (X. Pracovní setkání fyzikálních chemiků a elektrochemiků). - , 2010 ; : Masarykova univerzita. - ISBN 978-80-7375-396-2. -

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- AFC7 Kleinová, Andrea [25%] - **Rimarčík, Ján** [25%] - Cvengrošová, Zuzana [20%] - Mikulec, Jozef [5%] - Cvengroš, Ján [25%]: Opotrebované fritovacie oleje ako zdroj biopalív. - , 2010.
In: Aprochem 2010, 19.-21.4.2010, Kouty nad Desnou, ČR. - : Vysoká škola chemicko-technologická v Praze, 2010. - ISBN 978-80-02-02212-1. - S. 1363-1370
- AFC8 Lengyel, Jozef [25%] - **Rimarčík, Ján** [25%] - **Rottmannová, Lenka** [25%] - Klein, Erik [25%]: Thermodynamics of Potential Antioxidant Action of Phytosterols. - , 2010.
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- AFC9 **Rottmannová, Lenka** [20%] - **Rimarčík, Ján** [20%] - Klein, Erik [20%] - **Lukeš, Vladimír** [20%] - **Ilčin, Michal** [20%]: O-H Bond Dissociation Enthalpies of Phenolic Compounds. - , 2010.
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- AFD1 **Bučinský, Lukáš** [40%] - Kožíšek, Jozef [15%] - Biskupič, Stanislav [15%] - Jayatilaka, Dylan [15%] - Gall, Marián [15%]: Relativistic effects vs. X-ray constrained Hartree Fock.
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- AFD2 **Holá, Oľga** [70%] - Foldesová, Mária [30%]: Rádioaktivita a jej vplyv na životné prostredie v predmetoch štúdia na FCHPT. - , 2010.
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- AFD3 **Holá, Oľga** [60%] - Holý, Karol [40%]: Význam ionizujúceho žiarenia pre človeka a radiačná ochrana.
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- AFD4 **Lukeš, Vladimír** [16%] - **Rimarčík, Ján** [14%] - Klein, Erik [14%] - Punyain, Kraiwan [14%] - Kelterer, Anne-Marie [14%] - Milata, Viktor [14%] - Brezová, Vlasta [14%]: Theoretical Study of Electronic Structure of Ethyl 1,4-Dihydro-6-Fluoro-8-Nitro-4-Oxoquinoline-3-Carboxylate in Neutral and Anion Radical Forms. - , 2010.
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- AFD5 **Rimarčík, Ján** [25%] - **Rottmannová, Lenka** [25%] - **Lukeš, Vladimír** [25%] - Klein, Erik [25%]: Energetics of Homolytic O?H Bond Cleavage in Sterically Hindered Phenols. - , 2010.
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- AFD6 **Rimarčík, Ján** [20%] - **Ilčin, Michal** [20%] - **Rottmannová, Lenka** [20%] - Klein, Erik [20%] - **Lukeš, Vladimír** [20%]: Quantum Chemical Study of the Energetics of Phenolic Compounds.
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- AFD7 **Rimarčík, Ján** [16%] - Punyain, Kraiwan [14%] - **Lukeš, Vladimír** [14%] - Klein, Erik [14%] - Milata, Viktor [14%] - Brezová, Vlasta [14%] - Kelterer, Anne-Marie [14%]: Theoretical Study on the IR Spectra and the Photophysics of Substituted Quinolones. - , 2010.
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- AFD9 **Veselý, Tibor** [20%] - **Rottmannová, Lenka** [16%] - **Rimarčík, Ján** [16%] - **Ilčin, Michal** [16%] - **Lukeš, Vladimír** [16%] - Klein, Erik [16%]: The dftb+ Calculations of Bond Dissociation Enthalpies of Para- and Meta-Substituted Phenols. - , 2010.
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- AFG1 **Bučinský, Lukáš** [40%] - Jayatilaka, Dylan [30%] - Biskupič, Stanislav [30%]: Electron and spin

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- AFG2 **Bučinský, Lukáš** [80%] - Jayatilaka, Dylan [10%] - Biskupič, Stanislav [10%]: Picture change effect correction in electron and spin densities and X-ray structure factors, calculated at Douglas-Kroll Hess and Infinite order two component level. - 1 s.
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- AFG3 **Bučinský, Lukáš** [40%] - Jayatilaka, Dylan [30%] - Biskupič, Stanislav [30%]: Picture change effect correction of quasirelativistic (IOTC/DKH2) total and orbital electron densities of radon atom. - 1 s.
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- AFG4 Dvoranová, Dana [25%] - Brezová, Vlasta [25%] - Valko, Marián [25%] - **Bučinský, Lukáš** [25%]: Spectroscopic study on the photochemical processes of the anticancer drug Irinotecan (CPT-11). - 1 s.
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- AFG5 **Holá, Oľga** [60%] - Holý, Karol [40%]: Ionizing Radiation, its Effects and Protection against it.
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- AFG6 **Holá, Oľga** [60%] - Holý, Karol [40%]: Subject "Radiation protection" in Environmental Study Programmes.
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- AFG7 Holý, Karol [15%] - Povinec, Pavol [15%] - Šivo, Alexander [10%] - Sýkora, Ivan [10%] - Ješkovský, Miroslav [10%] - Richtáriková, Marta [10%] - Bulko, Martin [10%] - Müllerová, Monika [10%] - **Holá, Oľga** [8%] - Šimon, Ján [2%]: Atmospheric Radioactivity Monitoring in Slovakia. - 2 s.
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- AFG8 Matis, Martin [20%] - Raptá, Peter [20%] - **Lukeš, Vladimír** [20%] - Hartmann, Horst [20%] - Dunsch, Lothar [20%]: In situ ESR-UV/Vis/NIR spectroelectrochemistry of N,N,N?,N?-tetrakis(4-aminophenyl)benzidine and its N,N,N?,N?-tetra-(4-methoxyphenyl)-substituted quarterphenyl homologue. - , 2009.
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- AFH1 **Bučinský, Lukáš** [40%] - Gall, Marián [20%] - Kožíšek, Jozef [20%] - Biskupič, Stanislav [20%]: Relativistic Effects in Transition Metal Complexes of Copper and Ruthenium.
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INSTITUTE OF CHEMICAL AND ENVIRONMENTAL ENGINEERING

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Foreword

The Institute has a unique position among academic institutions in Slovakia being the only one in the country providing full three-stage university education and academic research in the field of chemical engineering. It is organized into two departments – Department of Chemical and Biochemical Engineering and Department of Environmental Engineering that carry out education and research in the areas of chemical, biochemical, food, safety and environmental engineering.

Teaching activities

The institute guarantees Bachelor Study Program of Chemical Engineering, Master Study Programs of Chemical Engineering and of Environmental Chemistry and Technology and PhD. Study Programs of Chemical Engineering and of Environmental Engineering. The teachers of the institute provide most study program courses on the master and PhD level and about half of the courses on the bachelor level. Besides, they provide courses for other study programs at the Faculty which include Chemical Engineering I and II, Material (and Energy) Balances, Equipment in Chemical and Food Industry, Chemical Engineering Thermodynamics, Reaction Engineering, Biochemical Engineering, and Safety Engineering.

Research profile

The research at the Institute is carried out within seven research groups: Bioprocess Engineering, Diffusional and Separation Processes, Reactor and Safety Engineering, Membrane Processes, Momentum and Heat Transfer, Environmental Engineering: Water Treatment and Purification, and Chemical Waste Disposal and Environmental Risk Assessment. Besides usual research and technical projects, publication activities, the Institute co-organizes together with the Slovak Society of Chemical Engineering and Association of Water Treatment of Slovak annual international conferences of chemical engineering and biannual conferences on wastewater treatment.

Department of Chemical and Biochemical Engineering

Head of Department Assoc. prof. Milan Polakovič, PhD.



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Projects

Bilaterálna spolupráca

Project Code: EC 2007/147-063
 Title (sl.): Európsko-ázijské partnerstvo v rozvoji potenciálu ľudských zdrojov v inžinierskom vzdelávaní v Afganistane
 Title (eng.): A Euro-Asia partnership for development human resource capacity of engineering education in Afghanistan
 Project duration: 01. 01. 2008 - 30. 06. 2011
 Responsible person: **doc. Ing. Juma Haydary, PhD.**

Project Code: SAMRS 2009/02/09
 Title (sl.): Rozvoj potenciálu ľudských zdrojov na Kábulskej technickej univerzite
 Title (eng.): Development of Human Resource Capacity of Kabul Polytechnic University
 Project duration: 01. 01. 2010 - 31. 12. 2011
 Responsible person: **doc. Ing. Juma Haydary, PhD.**

SR - Bulharsko

Project Code: SK-BG-0042-08
 Title (sl.): Nové extraktívne metódy získavania organických kyselín z biotechnologických a odpadových roztokov
 Title (eng.): A new extractive methods for recovery of organic acids from biotechnological and waste solutions.
 Project duration: 01. 02. 2009 - 31. 12. 2010
 Responsible person: **Ing. Štefan Schlosser, CSc.**

VEGA

Project Code: 1/0876/08
 Title (sl.): Afinitné mikročastice, nanočastice a micely a ich použitie na uskutočnenie separácií a reakcií v sústavách s membránami

| | |
|---------------------|--|
| Title (eng.): | Affinity microparticles, nanoparticles and micelles and their use in separations and reactions employing membranes |
| Project duration: | 01. 01. 2008 - 31. 12. 2010 |
| Responsible person: | Ing. Štefan Schlosser, CSc. |

VEGA

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| Project Code: | 1/0796/10 |
| Title (sl.): | Katalytická transformácia dechtov zo splyňovania prírodných (biomasy) a syntetických (odpadov) polymérov |
| Title (eng.): | Catalytic transformation of tars from gasification of natural (biomass) and synthetic (waste) polymers |
| Project duration: | 2010 - 2011 |
| Responsible person: | doc. Ing. Ľudovít Jelemenský, CSc. |

VEGA

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| Project Code: | 1/0526/10 |
| Title (sl.): | Matematické a experimentálne modelovanie hybridných reakčno-separačných systémov na biochemickú produkciu chemických špecialít |
| Title (eng.): | Mathematical and experimental modeling of hybrid reaction-separation systems for biochemical production of chemical specialities |
| Project duration: | 2010 - 2011 |
| Responsible person: | prof. Ing. Jozef Markoš, DrSc. |

VEGA

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| Project Code: | 1/0655/09 |
| Title (sl.): | Modelovanie a scale-up membránovej chromatografie pre separácie proteínov |
| Title (eng.): | Modelling and scale-up of membrane chromatography for separation of proteins |
| Project duration: | 2009 - 2011 |
| Responsible person: | doc. Ing. Milan Polakovič, CSc. |

VEGA

| | |
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| Project Code: | 1/0553/10 |
| Title (sl.): | Tvorka databázy parametrov ternárnej korekcie rovníc pre výpočet aktivitných koeficientov zložiek v roztoku a jej použitie v modelových výpočtoch separácie viacložkových viacfázových systémov |
| Title (eng.): | Elaboration of the ternary correction parameters database for calculation of the components activity coefficients in the liquid-phase and its application in simulations of multiphase multicomponent mixture separation |
| Project duration: | 2010 - 2011 |
| Responsible person: | doc. Ing. Elena Graczová, CSc. |

APVV

| | |
|---------------------|---|
| Project Code: | APVV-0518-07 |
| Title (sl.): | Integrované reakčné systémy na biokatalytickú redukciu prochirálnych karbonylových zlúčenín |
| Title (eng.): | Integrated reaction system for biocatalytic reduction of prochiral carbonyl compounds |
| Project duration: | 01. 06. 2008 - 31. 12. 2010 |
| Responsible person: | prof. Ing. Jozef Markoš, DrSc. |

APVV

Project Code: APVV-0355-07
Title (sl.): Modelovanie membránových reaktorov
Title (eng.): Modelling of membrane reactors
Project duration: 01. 09. 2008 - 31. 12. 2010
Responsible person: **Ing. Zuzana Švandová, PhD.**

APVV

Project Code: LPP-0258-09
Title (sl.): Rovnováha a kinetika adsorpcie proteínov na iónomeničových chromatografických membránach s vrúbľovanou polymérnou vrstvou
Title (eng.): Equilibrium and kinetics of protein adsorption on ion-exchange chromatographic membranes with a grafted polymer layer
Project duration: 01. 09. 2009 - 30. 08. 2013
Responsible person: **doc. Ing. Milan Polakovič, CSc.**

APVV

Project Code: LPP-0230-07
Title (sl.): Štúdium kinetiky splyňovania biomasy na procesný plyn
Title (eng.): Kinetic study of biomass gasification to process gas
Project duration: 01. 07. 2008 - 30. 06. 2012
Responsible person: **doc. Ing. Ľudovít Jelemenský, CSc.**

APVV

Project Code: LPP-0221-07
Title (sl.): Transportné a kinetické javy v membránovej chromatografii
Title (eng.): Transport and kinetic phenomena in membrane chromatography
Project duration: 01. 07. 2008 - 30. 06. 2012
Responsible person: **doc. Ing. Milan Polakovič, CSc.**

Structural Funds of EU

Project Code: ITMS 26240120016
Title (sl.): Národné centrum pre výskum a aplikácie obnoviteľných zdrojov energie
Title (eng.): National center for research and application of renewable energy sources
Project duration: 5.2010-04.2011
Responsible person: **doc. Ing. Ľudovít Jelemenský, CSc.**

Structural Funds of EU

Project Code: ITMS 26240120028
Title (sl.): Dobybudovanie národného centra pre výskum a aplikácie obnoviteľných zdrojov energie
Title (eng.): Finalization of national center for research and application of renewable energy sources
Project duration: 1.2010-12.2012
Responsible person: **doc. Ing. Ľudovít Jelemenský, CSc.**

Structural Funds of EU

Project Code: ITMS 26240220057

Title (sl.): Vybudovanie experimentálnej overovacej jednotky zameranej na biotechnologickú produkciu špeciálnych chemikálií
 Title (eng.): Elaboration of the ternary correction parameters database for calculation of the components activity coefficients in the liquid-phase and its application in simulations of multiphase multicomponent mixture separation
 Project duration: 2010 - 2013
 Responsible person: **doc. Ing. Milan Polakovič, CSc.**

List of bachelor (BT), diploma (DT) and dissertation (DissT) theses

| Type | Final thesis | Supervisor |
|------|--|------------------------------------|
| BT | Bc. Alena Dolanská Simulation of dual-pressure heat recovery steam generator and following steam condensation electricity production with consideration of seasonal effects | Ing. Miroslav Variny |
| BT | Milota Fáberová Separation of Styrene-Ethylbenzene Mixture | doc. Ing. Juma Haydary, PhD. |
| BT | Bc. Peter Fecko Preparation of Synthesis Gas by Biomass Gasification - Technology Design | doc. Ing. Ľudovít Jelemenský, CSc. |
| BT | Bc. Dominik Gibala Design of rectification columns for separation of three component mixture | prof. Ing. Jozef Markoš, DrSc. |
| BT | Bc. Anna Hanusová Optimization of rectification column for extractive distillation | Ing. Pavol Steltenpohl, PhD. |
| BT | Bc. Helena Chovancová Estimation of coke layer, formed in tubes during the transportation of oil products | doc. Ing. Juma Haydary, PhD. |
| BT | Bc. Ladislav Keszán Design for a line of production of dry milk | doc. Ing. Otto Mierka, CSc. |
| BT | Bc. Gábor Kovács Production of Chlorotoluene by Chlorination of Toluene in the Liquid Phase - Technology Project | Ing. Juraj Labovský, PhD. |
| BT | Bc. Csaba Makky Design of Propylene Glycol Production by Hydrolysis of Propylene Oxide | Ing. Zuzana Švandová, PhD. |
| BT | Bc. Lenka Nemsilová Design of equipment for material evaluations of waste oils | doc. Ing. Pavel Timár, CSc. |
| BT | Bc. Róbert Pavlovič The Production of Biodiesel from Waste Oil in Bioreactor with Immobilized Enzyme | Ing. Michal Gramblička |
| BT | Bc. Ivana Pijáková Design of Dialysis Unit | doc. Ing. Ján Stopka, CSc. |
| BT | Bc. Erik Posilný Intensification of Evaporator Line Performance | doc. Ing. Pavel Timár, CSc. |
| BT | Bc. Andrea Snopková Production of Galactooligosaccharides by Lactose Hydrolysis in a Bioreactor with Immobilised Enzyme | Ing. Michal Gramblička |
| BT | Bc. Adam Turan Coal power plant repowering parameters calculation utilizing the technology of combined cycle | Ing. Miroslav Variny |
| BT | Bc. Gabriel Závodský Production of ascorbic acid | Ing. Viera Illeová, PhD. |
| BT | Bc. Mária Zigová Application of Gasification for Energy Evaluation | doc. Ing. Ľudovít Jelemenský, CSc. |

| | | |
|------|--|------------------------------------|
| BT | Bc. Jozef Zoček Design of Two Rectification Columns for the Separation of a Benzene-Toluene-Xylene Mixture | Ing. Zuzana Švandová, PhD. |
| DT | Bc. Veronika Bottová Modeling of the fluidized bed reactor for production of polypropylene | doc. Ing. Ján Stopka, CSc. |
| DT | Ing. Peter Csontos Audit of the cooling system in Heineken a.s. Hurbanovo and proposals for improvement | doc. Ing. Otto Mierka, CSc. |
| DT | Ing. Janka Helcová Simulation of Crude Oil Distillation and Its Experimental Verification | doc. Ing. Juma Haydary, PhD. |
| DT | Ing. Ivan Hrablay Thermal decomposition kinetic of sewage sludge from anaerobic stabilization process of biomass by TGA/DSC method | doc. Ing. Ľudovít Jelemenský, CSc. |
| DT | Ing. Michal Kebísek Methanol Separation from Stripper Off-Gases on BU Recovery Line, Mondi SCP, a.s., Ružomberok | doc. Ing. Otto Mierka, CSc. |
| DT | Ing. Michal Kuchta Modelling of Hybrid Reactive-Separation Processes Using the Simulation Program Aspen Plus | Ing. Zuzana Švandová, PhD. |
| DT | Ing. Miroslava Madliaková Optimization of Operating Two Systems of Cooling Water for Making Air to Cool Fibers and Optimization of Climatization in Fibrocheme, a.s. Svit | doc. Ing. Otto Mierka, CSc. |
| DT | Ing. Juraj Moravčík Preparative Chromatographic Separation of Galactooligosaccharides by Using Ion-exchange Adsorbents | Ing. Michal Gramblička |
| DT | Ing. Mária Petková Mathematical and experimental modeling evaporator with laminar film | doc. Ing. Ján Stopka, CSc. |
| DT | Ing. Juraj Sághy Pyrolysis of solid fuels | doc. Ing. Juma Haydary, PhD. |
| DT | Ing. Martin Szijjarto Separation of Aromatics from Hydrocarbons Mixture Using Extractive Distillation: Design, Control and Optimization | Ing. Pavol Steltenpohl, PhD. |
| DT | Ing. Tomáš Szvitek Complex balance of fuel gases in Slovnaft a.s., Bratislava | doc. Ing. Otto Mierka, CSc. |
| DT | Ing. Ivan Šimko Production of 2-Phenylethanol in Integrated System with In Situ Product Adsorption | Ing. Viera Illeová, PhD. |
| DT | Ing. Lýdia Šišková Experimental Study of Catalytic Pyrolysis of Tars | prof. Ing. Jozef Markoš, DrSc. |
| DT | Ing. Veronika Trnková The possibilities of reducing the energy severity during compressor's operation at the ethylene production unit | doc. Ing. Ján Stopka, CSc. |
| DT | Ing. Faridullah Hashim Mechanism of Thermal Inactivation of Invertase | Ing. Viera Illeová, PhD. |
| DT | Ing. Abdul Wasim Noori Design of a batch stirred fermentor for citric acid production | Ing. Pavel Ačai, CSc. |
| DT | Ing. Mohammad Jafar Royen Design of a batch stirred fermentor for gluconic acid production | Ing. Pavel Ačai, CSc. |
| DT | Ing. Mohammad Emal Quazizada Design of a batch stirred fermentor for ethanol production | Ing. Pavel Ačai, CSc. |
| DisT | Ing. Michal Gramblička Textural and transport properties of adsorbents designed for separation of monoclonal antibodies | doc. Ing. Milan Polakovič, CSc. |
| DisT | Ing. Zdenka Onderková, PhD. Design of immobilized biocatalyst to fructooligosaccharides production | doc. Ing. Milan Polakovič, CSc. |

Selected publications

Journals

Current Contents Publications

- ADC1 **Blahušiak, Marek** [50%] - **Schlosser, Štefan** [30%] - **Marták, Ján** [20%]: Simulation of a hybrid fermentation-separation process for production of butyric acid.
In: Chemical Papers. - ISSN 0366-6352. - Vol. 64, Iss. 2 (2010), s. 213-222
- ADC2 **Gašparovič, Lukáš** [34%] - Vojteková, Zuzana [33%] - **Jelemenšký, Ľudovít** [33%]: Kinetic study of wood chips decomposition by TGA. - , 2010.
In: Chemical Papers. - ISSN 0366-6352. - Vol. 64, Iss. 2 (2010), s. 174-181
- ADC3 **Haydary, Juma** [25%] - **Jelemenšký, Ľudovít** [25%] - **Markoš, Jozef** [25%] - Annus, Július [25%]: A laboratory set-up with a flow reactor for waste tire pyrolysis. - , 2009.
In: Kautschuk Gummi Kunststoffe. - ISSN 0948-3276. - Vol. 62, Iss. 12. - , 2009, s. 661-665
- ADC4 **Jakób, Alina** [17%] - Bryjak, Jolanta [16%] - Wojtowicz, Halina [16%] - **Illeová, Viera** [17%] - Annus, Július [17%] - **Polakovič, Milan** [17%]: Inactivation kinetics of food enzymes during ohmic heating.
In: Food Chemistry. - ISSN 0308-8146. - Vol. 123, Iss. 2 (2010), s. 369-376
- ADC5 **Labovský, Juraj** [50%] - **Jelemenšký, Ľudovít** [50%]: CFD simulations of ammonia dispersion using "dynamic" boundary conditions. - , 2010.
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- ADC6 **Laššák, Pavol** [40%] - **Labovský, Juraj** [30%] - **Jelemenšký, Ľudovít** [30%]: Influence of parameter uncertainty on modelling of industrial ammonia reactor for safety and operability analysis. - , 2010.
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- ADC7 **Marták, Ján** [50%] - **Kubišová, Ľubica** [25%] - **Schlosser, Štefan** [25%]: Liquid-liquid equilibria of 5-methyl-2-pyrazinecarboxylic and sulfuric acids for solvents with trioctylamine.
In: Journal of Chemical and Engineering Data. - ISSN 0021-9568. - Vol. 55, Iss. 9 (2010), s. 3578-3589
- ADC8 **Mihal', Mário** [34%] - **Švandová, Zuzana** [33%] - **Markoš, Jozef** [33%]: Steady state and dynamic simulation of a hybrid reactive separation process. - , 2010.
In: Chemical Papers. - ISSN 0366-6352. - Vol. 64, Iss. 2 (2010), s. 193-202
- ADC9 **Onderková, Zdenka** [25%] - Bryjak, Jolanta [25%] - **Vaňková, Katarína** [25%] - **Polakovič, Milan** [25%]: Kinetics of thermal inactivation of free Aureobasidium pullulans fructosyltransferase.
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- ADC10 **Steltenpohl, Pavol** [60%] - **Graczová, Elena** [40%]: Application of extended NRTL equation for ternary liquid-liquid and vapor-liquid-liquid equilibria description. - , 2010.
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- ADC11 **Vaňková, Katarína** [34%] - **Ačai, Pavel** [33%] - **Polakovič, Milan** [33%]: Modelling of fixed-bed adsorption of mono-, di-, and fructooligosaccharides on a cation-exchange resin.
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- ADC14 **Variny, Miroslav** [50%] - **Mierka, Otto** [50%]: Implementation of marginal quantities in management of cogeneration units operating in liberal market environment. - , 2010.
In: Chemical Papers. - ISSN 0366-6352. - Vol. 64, Iss. 2 (2010), s. 163-173
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In: Chemical Papers. - ISSN 0366-6352. - Vol. 64, Iss. 4 (2010), s. 409-540
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- ADF1 **Jelemenský, Ľudovít** [33%] - **Gašparovič, Lukáš** [34%] - **Markoš, Jozef** [33%]: Výroba elektrickej energie a chemických látok termochemickým spracovaním lignocelulózovej biomasy I. časť. - , 2010.
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- ADF2 **Jelemenský, Ľudovít** [33%] - **Gašparovič, Lukáš** [34%] - **Markoš, Jozef** [33%]: Výroba elektrickej energie a chemických látok termochemickým spracovaním lignocelulózovej biomasy II. časť. - , 2010.
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- AEC1 **Graczová, Elena** [70%] - **Steltenpohl, Pavol** [10%] - **Chlebovec, Matúš** [10%] - **Labovský, Juraj** [10%]: Correlation of Isothermal and Isobaric Ternary Vapor?Liquid Equilibrium Data by the Extended NRTL Equation : Santiago de Compostela 27. 6. ? 1. 7. 2009, cd. - , 2009.
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- AEC2 **Schlosser, Štefan** [50%] - **Blahušiak, Marek** [25%] - **Marták, Ján** [25%]: Extractive separations by ionic liquids and related processes.
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- AEC3 **Steltenpohl, Pavol** [70%] - **Graczová, Elena** [30%]: Application of the NRTL Model Extended by Ternary Contribution in Prediction of Four-Component Isobaric Vapor?Liquid Equilibrium : Santiago de Compostela, 27. 6. ? 1. 7. 2009, cd.
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Published Conference Contributions

- AFA1 Hudec, Ivan [55%] - Feranc, Jozef [30%] - Šurina, Igor [10%] - **Haydary, Juma** [5%]: Piroliza odpadów gumowych. - , 2009.
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- AFC1 **Blahušiak, Marek** [60%] - **Schlosser, Štefan** [30%] - **Marták, Ján** [10%]: DESIGN OF HYBRID FERMENTATION-PERTRACTION UNIT FOR PRODUCTION OF BUTYRIC ACID : supplement.
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- Matúš** [10%]: New Electronic Database of Ternary Contribution Parameters to the Common GE Equations : Santiago de Compostela, 27. 6. - 1. 7. 2009, cd.
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- AFC4 **Graczová, Elena** [60%] - **Steltenpohl, Pavol** [20%] - **Chlebovec, Matúš** [20%]: Prediction of Isobaric Vapor - Liquid Equilibrium Data of Quaternary Systems : EQUIFASE 2009, 17-21 October 2009, Praia da Rocha, Algarve, Portugal.
In: VIII Iberoamerican Conference on Phase Equilibria and Fluid Properties for Process Design : EQUIFASE 2009, 17-21 October 2009, Praia da Rocha, Algarve, Portugal. - : LSRE/LCM, Faculdade de Engenharia da Universidade do Porto, 2009. - ISBN 978-989-20-1694-8. - nestr.
- AFC5 **Haydary, Juma** [60%] - **Jelemenský, Ľudovít** [10%] - **Markoš, Jozef** [10%] - Annus, Július [20%]: A Laboratory Unit for Waste and Biomass Pyrolysis : Srní - Šumava - Česká Republika, 19.-22.10.2009.
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- AFC7 **Haydary, Juma** [100%]: Heat Transfer in Building Constructions.
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- AFC9 **Labovský, Juraj** [80%] - **Jelemenský, Ľudovít** [20%]: Appropriate initial and boundary condition for CFD dispersion modelling for emergency preparedness. - , 2010.
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- AFC10 **Marták, Ján** [65%] - **Schlosser, Štefan** [35%]: MECHANISM OF PERTRACTION OF BUTYRIC ACID THROUGH LIQUID MEMBRANE WITH PHOSPHONIUM IONIC LIQUID.
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- AFC11 **Marták, Ján** [65%] - **Schlosser, Štefan** [35%]: Pertraction of Butyric Acid through Liquid Membrane with Phosphonium Ionic Liquid : abstracts on CD ROM.
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- AFC12 **Schlosser, Štefan** [65%] - **Blahušiak, Marek** [25%] - **Marták, Ján** [10%]: HYBRID PROCESSES WITH MEMBRANES IN WATER TREATMENT AND BIOTECHNOLOGY.
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- AFC13 **Schlosser, Štefan** [40%] - **Marták, Ján** [50%] - **Blahušiak, Marek** [10%]: Mechanism of Extraction and Pertraction of Organic Acids by Ionic Liquids and Influence of Anion Structure on it : abstract on CS ROM.
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- AFC14 **Timár, Pavel** [50%] - Štibrányi, Ladislav [50%]: Ekologická technológia na regeneráciu odpadových olejov : 4. ročník česko-slovenského symposia, .
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- AFC15 **Variny, Miroslav** [70%] - **Mierka, Otto** [30%]: Realistiký pohľad na aplikáciu tepelných čerpadiel v priemysle disponujúcim kogeneračnou výrobou elektrickej energie a tepla : Srní -

- Šumava - Česká Republika, 19.-22.10.2009.
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- AFC16 **Báleš, Vladimír** [50%], **Derco, Ján** [50%] Sustainable use of water, 7th EU-CHINA Round Table, Changguing, Lecture and full text, China, 2010.
- AFD1 **Báleš, Vladimír** [50%] - Bobrík, Miroslav [50%]: Význam športu v príprave budúcej inteligencie. - , 2009.
 In: Slovenský školský šport. Národná konferencia o školskom športe 2009, Štrbské pleso, 5.-6.11.2009. - : Ministerstvo školstva Slovenskej republiky, 2009. - S. 43-48
- AFD2 **Blahušiak, Marek** [45%] - **Schlosser, Štefan** [30%] - **Marták, Ján** [25%]: Extraction of butyric acid by a solvent impregnated resin containing ionic liquid.
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- AFD3 **Blahušiak, Marek** [60%] - **Schlosser, Štefan** [40%]: Flux decline analysis in cross-flow microfiltration of suspensions of microparticulate adsorbents.
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- AFD4 **Blahušiak, Marek** [70%] - **Schlosser, Štefan** [30%]: Hybrid process involving extraction into ionic liquid impregnated microparticles and microfiltration.
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- AFD5 **Blahušiak, Marek** [40%] - **Schlosser, Štefan** [25%] - Cvengroš, Ján [25%] - **Marták, Ján** [10%]: New approach to regeneration of the solvent with ionic liquid from membrane based solvent extraction.
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- AFD6 **Chlebovec, Matúš** [30%] - **Graczová, Elena** [60%] - **Steltenpohl, Pavol** [10%]: Correlation of Isobaric Vapor - Liquid Equilibrium Data of Ternary Systems by the Extended GE equations : Tatranské Matliare, Slovakia, 25.-30.5.2009, full text on CD.
 In: Proceedings of the 36th International Conference of Slovak Society of Chemical Engineering, 25.-29.5.2009, Tatranské Matliare. - , 2009. - ISBN 978-80-227-3072-3. - 163-1 ? 163-13
- AFD7 **Drevenák, Peter** [34%] - **Gramblička, Michal** [33%] - **Polakovič, Milan** [33%]: Effects of mass transfer kinetics and liquid phase conditions on the breakthrough performance of bovine serum albumin on a strong cation-exchange membrane adsorbent.
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- AFD8 **Gašparovič, Lukáš** [25%] - Hrablay, Ivan [25%] - Vojteková, Zuzana [25%] - **Jelemenský, Ľudovít** [25%]: Kinetic study of sludge pyrolysis from waste water treatment plant. - , 2010.
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 In: Power Engineering 2010, 1st International Scientific Conference OZE, Renewable Energy Resources 2010. - : STU v Bratislave, 2010. - ISBN 978-80-89402-21-2. - nestr.
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- AFD15 **Koreňová, Zuzana [25%] - Haydary, Juma [25%] - Markoš, Jozef [25%] - Jelemenský, Ľudovít [25%]**: Detail study of tire pyrolysis : Tatranské Matliare, Slovakia, May 2009. In: Proceedings of the 36th International Conference of Slovak Society of Chemical Engineering, 25.-29.5.2009, Tatranské Matliare. - , 2009. - ISBN 978-80-227-3072-3. - 228-1 ? 228-28
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- AFD18 **Labovský, Juraj [80%] - Jelemenský, Ľudovít [20%]**: Critical validation and possibilities of utilization of CFD modeling of atmospheric dispersion. - , 2010. In: 37th International Conference of Slovak Society of Chemical Engineering : Tatranské Matliare, 24.-28.máj, 2010. - Bratislava : STU v Bratislave, 2010. - ISBN 978-80-227-3290-1. - S. 1515-1522
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- AFH6 **Polakovič, Milan [40%] - Antošová, Monika [20%] - Onderková, Zdenka [20%] - Vandáková, Marcela [20%]**: Biocatalysis Production of Fructooligosaccharides: process Development from Enzyme Production by Cell Cultivation to Saccharide Separation by Simulated Moving Bed Chromatography.
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Books

- ABC1 **Schlosser, Štefan [50%] - Marták, Ján [50%]**: Separation of mixtures by pertraction or membrane based solvent extraction and new extractants.
In: Membrany teoria i praktyka. - : Uniwersytet Mikolaja Kopernika, 2009. - ISBN 978-83-231-2431-3. - S. 123-152
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Head of Department

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Projects

Program VMSP

| | |
|---------------------|---|
| Project Code: | VMSP-P-0101-09 |
| Title (sl.): | Čistenie odpadových vôd vo vidieckych sídlach v súbehu s využitím biomasy ako obnoviteľného zdroja |
| Title (eng.): | Wastewater treatment in rural areas in coordination with biomass utilisation as renewable energy source |
| Project duration: | 01. 09. 2009 - 31. 07. 2011 |
| Responsible person: | doc. Ing. Igor Bodík, CSc. |

VEGA

| | |
|---------------------|---|
| Project Code: | 1/0866/08 |
| Title (sl.): | Využitie progresívnych oxidačných postupov na rozklad prioritných, nebezpečných a rezistentných látok a minimalizáciu produkcie prebytočného kalu |
| Title (eng.): | Utilisation of advanced oxidation processes for degradation of priority, hazardous and biologically resistant substances and minimisation of excess sludge production |
| Project duration: | 01. 01. 2008 - 31. 12. 2010 |
| Responsible person: | doc. Ing. Ján Dérco, CSc. |

VEGA

| | |
|---------------------|---|
| Project Code: | 1/0145/08 |
| Title (sl.): | Využitie vedľajších produktov výroby bionafty s cieľom produkcie bioplynu a odstraňovania nutrientov z odpadových vôd |
| Title (eng.): | Use of by-products of biodiesel production for purpose of biogas production and nutrients removal from wastewater |
| Project duration: | 01. 01. 2008 - 31. 12. 2010 |
| Responsible person: | doc. Ing. Miroslav Hutňan, CSc. |

APVV

| | |
|---------------------|---|
| Project Code: | APVV-0417-07 |
| Title (sl.): | Denitrifikácia v reaktoroch s anoxickej granulovanou biomاسou |
| Title (eng.): | Denitrification in reactors with anoxic granulated biomass |
| Project duration: | 01. 06. 2008 - 31. 12. 2010 |
| Responsible person: | prof. Ing. Miloslav Drtil, PhD. |

APVV

| | |
|---------------------|--|
| Project Code: | APVV-0491-07 |
| Title (sl.): | Príprava chemického povlaku na povrchu sklených vláken |
| Title (eng.): | Chemical coating on glass fiber surface |
| Project duration: | 01. 06. 2008 - 31. 12. 2010 |
| Responsible person: | prof. Ing. Gabriel Čík, CSc. |

APVV

| | |
|---------------------|--|
| Project Code: | LPP-0019-09 |
| Title (sl.): | Produkcia bioplynu z biologicky rozložiteľných odpadov |
| Title (eng.): | Biogas production from biodegradable waste |
| Project duration: | 01. 09. 2009 - 31. 08. 2013 |
| Responsible person: | doc. Ing. Igor Bodík, CSc. |

Iný domáci

| | |
|---------------------|--|
| Project Code: | SK0023 |
| Title (sl.): | Vytvorenie centra excelentnosti pre využívanie obnoviteľných zdrojov energie na Slovensku |
| Title (eng.): | Establishment of a Slovak centre of excellence for utilization of renewable energy sources |
| Project duration: | 01. 03. 2008 - 30. 04. 2011 |
| Responsible person: | doc. Ing. Igor Bodík, CSc. |

Finančný mechanizmus EHP a Nórsky finančný mechanizmus

| | |
|---------------------|--|
| Project Code: | SK0023 |
| Title (sl.): | Vytvorenie centra excelentnosti pre využívanie obnoviteľných zdrojov energie na Slovensku |
| Title (eng.): | Establishment of a Slovak centre of excellence for utilization of renewable energy sources |
| Project duration: | 01. 03. 2008 - 30. 04. 2011 |
| Responsible person: | doc. Ing. Igor Bodík, CSc. |

Štrukturálne fondy EÚ – Operačný program Výskum a vývoj

| | |
|---------------------|--|
| Project Code: | ITMS 26240120004 |
| Title (sl.): | Centrum excelentnosti integrovanej protipovodňovej ochrany územia |
| Title (eng.): | Centre of excellence on integrated flood protection of the territory |
| Project duration: | 01. 05. 2009 – 30. 04. 2011 |
| Responsible person: | prof. Ing. Miloslav Drtil, PhD. |

List of bachelor (BT), diploma (DT) and dissertation (DissT) theses

| Type | Final thesis | Supervisor |
|------|--|---------------------------------|
| BT | Bc. Juan José Chávez Fuentes Organic Waste as Potencial Energy Source for Biogas Production | doc. Ing. Igor Bodík, CSc. |
| BT | Hajnalka Pongráczová Design of High-Rate Reactor for Anaerobic Treatment of Cheese Whey | doc. Ing. Miroslav Hutňan, CSc. |
| BT | Bc. Younis Y.M.A.T. Alenezi Granulometry of Some Inorganic Materials | prof. Ing. Miloslav Drtil, PhD. |
| BT | Bc. Ahmad A.SH.M. Alshammary Metallocenes - Preparation, Properties, Structures, Reaction and Applications | prof. Ing. Miloslav Drtil, PhD. |
| BT | Bc. Hassan J.S.S.SH. Alshammary Ferrates (VI) - Electrochemical Synthesis in Molten Salts | prof. Ing. Miloslav Drtil, PhD. |
| BT | Bc. Mohammad J.S.S.SH. Alshammary Ferrates (VI) - Electrochemical Synthesis in Alkali Solutions | prof. Ing. Miloslav Drtil, PhD. |
| DT | Ing. Róbert Ambrozy Selected results from start-up and operation of urban wastewater treatment | prof. Ing. Miloslav Drtil, PhD. |
| DT | Ing. Renáta Belasová Determination of surface and sorption properties of calcinated zeolites - volumetric and radioindicator method | RNDr. Mária Foldesová |
| DT | Ing. Zuzana Brezovická Change of Heating Plant Fuel and its Influence on Environment | prof. Ing. Gabriel Čík, CSc. |
| DT | Ing. Štefan Gyuricsek Monitoring of anoxic granulation in denitrification USB reactor | prof. Ing. Miloslav Drtil, PhD. |
| DT | Ing. Peter Kinder Benchmarking Decisive Parameters Communal Waste Water Treatment Plants | prof. Ing. Miloslav Drtil, PhD. |
| DT | Ing. Zuzana Kulichová Optimalisation of the Determination Requirements of Radionuclides by Liquid Scintillation Spectrometry | RNDr. Mária Foldesová |

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| DT | Ing. Soňa Lehotská Possibilities of Food Waste Application on Increasing Biogas Production on Municipal Wastewater Treatment Plants | doc. Ing. Igor Bodík, CSc. |
| DT | Ing. Csilla Lipková Denitrification in USB reactor with granulated biomass | prof. Ing. Miloslav Drtil, PhD. |
| DT | Ing. Veronika Matyšáková Use of Membrane Filtration in Industrial Wastewater Treatment | doc. Ing. Igor Bodík, CSc. |
| DT | Ing. Michal Mosný Optimisation Process of Membrane Modules Regeneration in the Biological Wastewater Treatment | doc. Ing. Igor Bodík, CSc. |
| DT | Ing. Eva Štefanková Oxidation of Selected Pollutants in Wastewater by Ozonem | doc. Ing. Ján Derce, CSc. |
| DT | Ing. Róbert Uhrecký Photodegradation of Selected Environmental Pollutant by Ferric Complexes | doc. Ing. Jozef Prousek, CSc. |
| DT | Ing. Tibor Tricko Anaerobic utilization of biodiesel production by-products | doc. Ing. Miroslav Hutňan, CSc. |
| DisT | Ing. Peter Chnapko, PhD. Management of ra-waste from NPP A-1 with respect to remelting of metal ra-waste and safety assessment of soil management | prof. Ing. Vasil Koprda, DrSc. |
| DisT | Ing. Angelika Kassai, PhD. Utilization of oxidation processes for removal of resistant compounds from water | doc. Ing. Ján Derce, CSc. |

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- AFD50 **Mackuľák, Tomáš** [40%] - **Ševčík, Peter** [10%] - **Olejníková, Petra** [25%] - **Prousek, Jozef** [25%]: Toxicity Change Before and After Fenton Reaction Treatment of 2-(5-Nitrofuryl)Acrylic Acid Measured by Means of Escherichia Coli Assay : June 16-18, 2009, Svit, Slovak Republic. In: 29-th International Symposium "Industrial Toxicology 09", June 16-18 2009, Svit, Slovak Republik. - : ZSVTS, 2009. - ISBN 978-80-969710-3-9. - S. 138-142
- AFD51 **Mackuľák, Tomáš** [60%] - **Prousek, Jozef** [40%]: Využitie drevokazných húb pri predúprave lignocelulózového substrátu na produkciu bioplynu. - , 2010.
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- AFD52 **Mackuľák, Tomáš** [50%] - **Prousek, Jozef** [50%]: Využitie polymérneho odpadu po predúprave Fentonovou reakciou ako biologický substrát.
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- AFD53 Matulová, Zuzana [40%] - Pagáčová, Petra [15%] - **Drtík, Miloslav** [15%] - **Bodík, Igor** [15%] - Hlavínek, Petr [15%]: LAB-SCALE RESEARCH OF MBR WITH COMBINED BIOMASS.
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- AFD54 Matulová, Zuzana [40%] - **Drtík, Miloslav** [30%] - **Bodík, Igor** [30%]: What we learnt during the real operation of a single household MBR plant.
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- AFD55 **Melicher, Michal** [40%] - **Derco, Ján** [40%] - **Kassai, Angelika** [20%]: Oxidácia benzotiazolových zlúčenín ozónom.
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- AFD57 **Melicher, Michal** [40%] - **Derco, Ján** [40%] - **Drtík, Miloslav** [10%] - **Černochová, Lenka** [10%]: Využitie ozónu pri znižovaní zaťaženia vodných zdrojov rezistentnými a toxickými látkami.
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- AFD58 Pagáčová, Petra [30%] - Matulová, Zuzana [20%] - **Drtík, Miloslav** [20%] - **Bodík, Igor** [20%] - Hlavínek, Petr [10%]: Laboratórne modelovanie aktivácie s kombinovanou biomasou a membránovou filtriáciou : Podbanské, 21.-23.10.2009.
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- AFD59 Pikorová, Tina [60%] - Matulová, Zuzana [10%] - Hlavínek, Petr [10%] - **Drtík, Miloslav** [10%] - Rusnák, Dušan [10%]: Technológia domových ČOV s membránovou separáciou kalu.
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- AFD60 **Sedláček, Stanislav** [50%] - **Kubaská, Miroslava** [25%] - **Bodík, Igor** [25%]: Biologicky rozložiteľné odpady a ich využiteľnosť na výrobu bioplynu.

- In: Odpadové vody 2010, 6. bienálna konferencia s medzinárodnou účasťou, 20.- 22. október 2010, Štrbské Pleso. - : Asociácia čistiarenských expertov SR, 2010. - ISBN 978-80-89088-94-2. - S. 104-109
- AFD61 **Sedláček, Stanislav [30%]** - **Kubaská, Miroslava [30%]** - **Lehotská, Soňa [10%]** - **Bodík, Igor [30%]**: Fermentačný zvyšok a jeho vplyv na čistiareň odpadových vôd. - , 2010.
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- AFD62 **Smolinská, Miroslava [60%]** - **Čík, Gabriel [40%]**: Photodynamic inactivation: The influence of photocatalyst ZSM-5-MB on the cell growth of bacteria.
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- AFD63 **Smolinská, Miroslava [60%]** - **Čík, Gabriel [40%]**: The influence of methylene blue incorporated in ZSM-5 zeolite channels on *Staphylococcus aureus* and *Escherichia coli*. - , 2010.
In: Priemyselná toxikológia 2010, 30. vedecké sympózium, 16.-18.júna 2010, Svit, SR. - : Slovenská spoločnosť priemyselnej chémie, 2010. - ISBN 978-80-969710-6-0. - S. 115-124
- AFD64 **Špalková, Viera [50%]** - **Hutňan, Miroslav [20%]** - **Kolesárová, Nina [10%]** - **Lazor, Michal [10%]** - **Bodík, Igor [10%]**: Anaeróbna degradácia vybraných poľnohospodárskych substrátov.
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- AFD65 **Špalková, Viera [40%]** - **Hutňan, Miroslav [40%]** - **Lazor, Michal [10%]** - **Kolesárová, Nina [10%]**: Možnosti zvyšovania obsahu metánu v bioplyne. - , 2010.
In: Produkcia bioplynu, pyrolýza a splyňovanie - efektívny spôsob zhodnotenia biomasy ako obnoviteľného zdroja energie, január 2010. - : FCHPT STU, 2010. - ISBN 978-80-89088-88-1. - S. 91-95
- AFD66 **Špalková, Viera [40%]** - **Hutňan, Miroslav [30%]** - **Lazor, Michal [15%]** - **Kolesárová, Nina [15%]**: Selected problems of anaerobic treatment of maize silage.
In: Proceedings of the 36th International Conference of Slovak Society of Chemical Engineering, 25.-29.5.2009, Tatranské Matliare. - , 2009. - ISBN 978-80-227-3072-3. - S. 157-1 - 157-9
- AFD67 **Špalková, Viera [50%]** - **Hutňan, Miroslav [30%]** - **Kolesárová, Nina [10%]** - **Lazor, Michal [10%]**: Utilization of isotachophoresis for control of anaerobic digestion.
In: 37th International Conference of Slovak Society of Chemical Engineering : Tatranské Matliare, 24.-28.máj, 2010. - Bratislava : STU v Bratislave, 2010. - ISBN 978-80-227-3290-1. - S. 1388-1398
- AFD68 Vilím, Daniel [30%] - Németh, Peter [30%] - **Bodík, Igor [30%]** - Buday, Mikuláš [10%]: Operation of MBR pilot plant - industrial wastewater treatment in Duslo Šaľa.
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- AFG1 **Pikorová, Tina [60%]** - **Matulová, Zuzana [10%]** - **Hlavínek, Petr [10%]** - **Drtíl, Miloslav [10%]** - Rusnák, Dušan [10%]: Operation of household MBR wastewater treatment plant equipped with membrane module (abstract).
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- AFG2 **Šalinger, Suzana [20%]** - **Nakrst, Jana [5%]** - **Bistan, Mirjana [5%]** - **Tišler, Tatjana [5%]** - **Zagorc-Končan, Jana [5%]** - **Derco, Ján [30%]** - **Gotvajn Zgajnar, Andreja [30%]**: Ozonation for removal of endocrine disrupting chemicals from aqueous solution. - , 2010.
In: VIII. susret mladih kemijskih inženjera 2010, Zagreb. - : Printera grupa, d.o.o., 2010. - ISBN 978-953-6470-48-8. - S. 30

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Foreword

Our institute was established in 1.1.2006 from two departments: Department of Information Engineering and Process Control and Department of Mathematics. It offers interesting undergraduate and graduate courses as well as PhD studies.

Teaching activities

Department of Information Engineering and Process Control guarantees three study programs: bachelor study program Information Engineering, Automation and Management in Chemical and Food Industry, master study program Information Engineering, Automation and Management in Chemical and Food Industry and PhD study program Process Control.
Department of Mathematics provides basic and advanced courses of Mathematics, Informatics, Mathematical Statistics and Numerical Mathematics in all study programs.

Research profile

Our research has focused on the following areas: modelling, identification, optimisation and process control in chemical and food industries, design and projection, measurement and data processing, process automation and visualisation, mathematical statistics, fuzzy sets and fuzzy logic, ordered algebraic structures.

Department of Information Engineering and Process Control

Head of Department prof. Miroslav Fikar, DSc.



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Projects

APVV

| | |
|---------------------|---|
| Project Code: | APVV-0029-07 |
| Title (sl.) | Algoritmy pre optimálne riadenie procesov prestupu tepla a látky s hybridnou dynamikou |
| Title (eng.) | Algorithms for optimal control of heat and mass transfer processes with hybrid dynamics |
| Project duration: | 01. 09. 2008 - 30. 6. 2011 |
| Responsible person: | prof. Dr. Ing. Miroslav Fikar, DrSc. |

APVV

| | |
|---------------------|---|
| Project Code: | LPP-0092-07 |
| Title (sl.) | Prediktívne riadenie hybridných systémov |
| Title (eng.) | Model Predictive Control of Hybrid Systems |
| Project duration: | 01. 06. 2008 - 30. 11. 2011 |
| Responsible person: | prof. Dr. Ing. Miroslav Fikar, DrSc. |

VEGA

| | |
|---------------------|---|
| Project Code: | 1/0071/09 |
| Title (sl.) | Pokročilé metódy optimálneho riadenia chemických a biochemických procesov |
| Title (eng.) | Advanced methods of optimal control of chemical and biochemical processes |
| Project duration: | 01. 01. 2009 - 31. 12. 2011 |
| Responsible person: | prof. Dr. Ing. Miroslav Fikar, DrSc. |

| | |
|---------------------|--|
| Project Code: | 1/0537/10 |
| Title (sl.) | Riadenie chemických a biochemických procesov s neurčitosťami |
| Title (eng.) | Control of Chemical and Biochemical Processes with Uncertainties |
| Project duration: | 2010 - 2011 |
| Responsible person: | doc. Ing. Monika Bakošová, CSc. |

KEGA

| | |
|---------------------|---|
| Project Code: | 3/7245/09 |
| Title (sl.) | Budovanie virtuálnych a vzdialených experimentov pre sieť on-line laboratórií |
| Title (eng.) | Development of Virtual and Remote Experiments for a Network of on-line Laboratories |
| Project duration: | 2009 - 2011 |
| Responsible person: | prof. Dr. Ing. Miroslav Fikar, DrSc. (partner) |

SR - Maďarsko

| | |
|---------------------|---|
| Project Code: | SK-HU-0023-08 |
| Title (sl.) | Moderné metódy optimalizácie a riadenia v procesoch s úsporou energie |
| Title (eng.) | Advanced Optimization and Control Strategies in Energy Saving Processes |
| Project duration: | 01. 02. 2009 - 30. 6. 2011 |
| Responsible person: | prof. Ing. Alojz Mészáros, CSc. |

Structural funds

| | |
|---------------|---|
| Project Code: | ITMS: 26240120005 |
| Title (sl.) | Podpora budovania Centra excelentnosti pre Smart technológie, systémy a |

služby
 Title (eng.) Support for Establishment of Centre of Excellence for Smart Technologies, Systems, and Services
 Project duration: 2009 - 2011
 Responsible person: **prof. Dr. Ing. Miroslav Fikar, DrSc.** (partner)

Project Code: ITMS: 26240120029
 Title (sl.) Podpora dobudovania Centra excelentnosti pre Smart technológie, systémy a služby II
 Title (eng.) Support for Finalisation of Centre of Excellence for Smart Technologies, Systems, and Services II
 Project duration: 2010 - 2013
 Responsible person: **prof. Dr. Ing. Miroslav Fikar, DrSc.** (partner)

Project Code: ITMS: 26240120018
 Title (sl.) Tvorba softvérového prototypu pre online vzdelávanie verejnej správy, podpora diseminácie výsledkov aplikovaného výskumu
 Title (eng.) Development of a software prototype for online learning in public policy, support for dissemination of results in applied research
 Project duration: 2009 - 2012
 Responsible person: **prof. Dr. Ing. Miroslav Fikar, DrSc.** (partner)

List of bachelor (BT), diploma (DT) and dissertation (DissT) theses

| Type | Final thesis | Supervisor |
|------|---|---------------------------------|
| BT | Bc. Ján Drgoňa Convex optimization and model predictive control | Ing. Michal Kvasnica, PhD. |
| BT | Bc. Juraj Holaza LEGO Robot Control | Ing. Michal Kvasnica, PhD. |
| BT | Bc. Martin Jelemenský Optimal Process Control | Ing. Radoslav Paulen |
| BT | Bc. Martin Klaučo Development of GUI for Synthesis of Robust PI Controllers | Ing. Katarína Matejčková |
| BT | Bc. Jana Mičáková System control with time delay | Ing. Anna Vasičkaninová |
| BT | Bc. Ľuboš Mičenec Modeling of hybrid systems | Ing. Michal Kvasnica, PhD. |
| BT | Bc. Lívia Petáková Optimal Process Control | Ing. Radoslav Paulen |
| BT | Katarína Peterková Modelling and Stability Analysis of Systems with Parametric Uncertainty | doc. Ing. Monika Bakošová, CSc. |
| BT | Slavomír Piatka Static web pages | Ing. Ľuboš Čirka, PhD. |
| BT | Bc. Monika Polačková Control of Technological Process Using Frequency Criteria | Ing. Mária Karšaiová, CSc. |
| BT | Bc. Ján Rusnák Control of System with Transport Delay by Industrial Controlling System SIMATIC | Ing. Katarína Matejčková |
| BT | Igor Stupavský Web application for processing and analysis | Ing. Ľuboš Čirka, PhD. |
| BT | Bc. Andrea Szakálová E-learning system for subject Optimization | doc. Ing. Ján Dvoran, CSc. |
| BT | Milan Šugár Control of the laboratory model by control system SIMATIC | Ing. Katarína Matejčková |
| BT | Bc. Bálint Takács Lego robot control | Ing. Michal Kvasnica, PhD. |

| | | |
|----|--|--------------------------------------|
| BT | Bc. Róbert Tomčík Control of a Laboratory Hot-air Process | doc. Ing. Monika Bakošová, CSc. |
| DT | Ing. Katarína Bangová System for identification and design of controllers using frequency characteristics | Ing. Mária Karšaiová, CSc. |
| DT | Ing. Mário Briš Technological process controlling in FOXBORO system | Ing. Katarína Matejčková |
| DT | Ing. Veronika Csizmadiaová Continuous Control of a Laboratory Device PCT40 | Ing. Ľuboš Čirka, PhD. |
| DT | Ing. Katarína Černá Creation of Graphical User Interface for Global Optimization | Ing. Radoslav Paulen |
| DT | Ing. Peter Danko Control of Technological processes with disturbances | Ing. Mária Karšaiová, CSc. |
| DT | Ing. Radka Doležalová Control of distillation column in FOXBORO control system | Ing. Katarína Matejčková |
| DT | Ing. Richard Dvoran Neuro-fuzzy Process Control of Water Tank | Ing. Lenka Blahová |
| DT | Ing. Ján Dzurov Internet Module for Process Modelling and Simulation | doc. Ing. Monika Bakošová, CSc. |
| DT | Ing. Soňa Gibaštíková A Redesign of Stabilizing Conditions for Model Predictive Control | Ing. Michal Kvasnica, PhD. |
| DT | Ing. Marián Harajdič Virtualization in System Solaris 10 | prof. Dr. Ing. Miroslav Fikar, DrSc. |
| DT | Ing. Zuzana Jakubcová Control of Selected Technological Proces in Contol System FOXBORO | Ing. Katarína Matejčková |
| DT | Ing. Martin Kalúz Virtual laboratory | Ing. Ľuboš Čirka, PhD. |
| DT | Ing. Jana Kmeťová CONFIS - conference information system | Ing. Ľuboš Čirka, PhD. |
| DT | Ing. Tibor Kórka Wind Turbine Control for Reducing Tower Oscillations | doc. Ing. Monika Bakošová, CSc. |
| DT | Ing. Jozef Krivák Testimonials - Module for Information system ÚIAM | Ing. Ľuboš Čirka, PhD. |
| DT | Ing. Jaroslav Kuzma Publications - Information System Module, UIAM | Ing. Ľuboš Čirka, PhD. |
| DT | Ing. Jozef Merčák GUI creating for design of robust controllers | Ing. Jana Závacká |
| DT | Ing. Ladislav Miklovitz Control of the selected process in control system FOXBORO | Ing. Katarína Matejčková |
| DT | Ing. Pavel Mištec Robust Control of a Chemical Continuous Stirred Tank Reactor | doc. Ing. Monika Bakošová, CSc. |
| DT | Ing. Mária Mušáková Administration of E-shop | prof. Dr. Ing. Miroslav Fikar, DrSc. |
| DT | Ing. Juraj Oravec Design of a Program System for Controller Tuningv | doc. Ing. Monika Bakošová, CSc. |
| DT | Ing. Lídia Pavúková Opportunities for Technological Processes Using Simplified Models | Ing. Mária Karšaiová, CSc. |
| DT | Ing. Ivana Rauová Evaluation of Different Bilevel Optimization Algorithms with Applications to Control | Ing. Michal Kvasnica, PhD. |
| DT | Ing. Ivana Repčíková Global and Dynamic Optimization of Processes | Ing. Radoslav Paulen |
| DT | Ing. Martin Struhár Virtual private network of the insitute | prof. Dr. Ing. Miroslav Fikar, DrSc. |
| DT | Ing. Andrea Szabová Discrete Control of Laboratory Equipment PCT40 | Ing. Ľuboš Čirka, PhD. |
| DT | Ing. Erika Szakálová Neural Network Predictive Control of a Chemical Reactor | Ing. Anna Vasičkaninová |
| DT | Ing. Alexander Szűcs | Ing. Michal Kvasnica, PhD. |

| | | |
|----|---|---------------------------------|
| DT | Software for automatic mulitple linearization Ing. Renáta Švardová Control of Time-delay Systems Using Complex Control Structures | doc. Ing. Monika Bakošová, CSc. |
| DT | Ing. Robert Taraba Systematic Method for Analysis of Performance Loss when Using Simplified MPC Formulations | Ing. Michal Kvasnica, PhD. |
| DT | Ing. Eva Turayová Optimal Control of Liquid Tanks System | Ing. Radoslav Paulen |
| DT | Ing. Lenka Vlková Virtual laboratory | Ing. Ľuboš Čirka, PhD. |

Selected publications

Journals

Current Contents Publications

- ADC1 **Fikar, Miroslav** [34%] - Kovács, Zoltan [33%] - Czermak, Peter [33%]: Dynamic Optimization of Batch Diafiltration Processes. - , 2010.
In: Journal of Membrane Science. - ISSN 0376-7388. - Vol. 355 (2010), s. 168-174
- ADC2 **Kvasnica, Michal** [70%] - **Herceg, Martin** [10%] - **Čirka, Ľuboš** [10%] - **Fikar, Miroslav** [10%]: Model predictive control of a CSTR: A hybrid modeling approach.
In: Chemical Papers. - ISSN 0366-6352. - Vol. 64, Iss. 3 (2010), s. 301-309

Other Publications

- ADE1 Kovács, Zoltan [50%] - **Fikar, Miroslav** [20%] - Czermak, Peter [30%]: Mathematical modelling of diafiltration. - , 2009.
In: Hungarian journal of industrial chemistry. - ISSN 0133-0276. - Vol. 37, Iss. 2 (2009), s. 159-164
- ADE2 Matušů, Radek [25%] - Prokop, Roman [25%] - **Matejíčková, Katarína** [25%] - **Bakošová, Monika** [25%]: Robust Stabilization of Interval Plants using Kronecker Summation Method.
In: WSEAS Transactions on Systems. - ISSN 1109-2777. - Vol. 9, Iss. 9. - , 2010, s. 917-926
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| doc. RNDr. Štefan Varga, CSc. | Assoc. Prof. PhD. | +421 252 495 177 +421 918 674 296 296 | stefan.varga@stuba.sk |

Projects

VEGA

Project Code: 1/0374/08
Title (sl.): Viachodnotové logiky v rozhodovacích procesoch
Title (eng.): Many valued logics in decision making
Project duration: 01. 01. 2008 - 31. 12. 2010
Responsible person: **doc. RNDr. Michal Šabo, CSc.**

VEGA

Project Code: 1/0198/09
Title (sl.): Zúplňovanie čiastočných informácií v prostredí neurčitosti
Title (eng.): Completion of partial information under uncertainty
Project duration: 01. 01. 2009 - 31. 12. 2011
Responsible person: **prof. RNDr. Anna Kolesárová, CSc.**

List of bachelor (BT), diploma (DT) and dissertation (DissT) theses

| Type | Final thesis | Supervisor |
|------|---|-------------------------------|
| BT | Ján Karško Modelling discrete and continuous datas | doc. RNDr. Štefan Varga, CSc. |

Selected publications

Journals

Current Contents Publications

- ADC1 Klement, Erich Peter [10%] - **Kolesárová, Anna** [30%] - Mesiar, Radko [30%] - Stupňanová, Andrea [30%]: Lipschitz continuity of discrete universal integrals based copulas.
In: International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems. - ISSN 0218-4885. - Vol. 18, No. 1 (2010), s. 39-52
- ADC2 **Kolesárová, Anna** [50%] - Mesiar, Radko [50%]: Lipschitzian De Morgan triplets of fuzzy connectives.
In: Information Sciences. - ISSN 0020-0255. - Vol. 180, Iss. 18 (2010), s. 3488-3496

Other Publications

- ADE1 **Baláž, Vladimír** [34%] - Nagasaka, K. [33%] - Strauch, O. [33%]: Zakon benforda i funkcii raspredelenija posledovateľnosti na $(0,1)$.
In: Matematičeskie zametki. - ISSN 0025-567X. - Tom. 88, v. 4 (2010), s. 485-501
- ADF1 **Garaj, Ivan** [50%] - Janiga, Ivan [50%]: Obojstranné tolerančné intervaly normálneho rozdelenia v stratéhii 6-sigma.
In: Forum Statisticum Slovacum. - ISSN 1336-7420. - Roč. 6, č. 4 (2010), s. 50-56
- AEC1 **Jasem, Milan** [100%]: Weak relatively uniform convergence in Riesz groups.
In: Contributions to general algebra 19, 25th Conference of Young Algebraists. - : Verlag

- Johanes Heyn, 2010. - ISBN 978-3-7084-0407-3. - S. 127-138
- ADE2 **Takáč, Z.**: MRP Tasks, Critical Thinking and Intrinsic Motivation to Proving. Teaching Mathematics and Computer Science, č. 1, zv. 8, str. 149–168, 2010
- ADE3 **Takáč, Z.**: How to Change Students' (Grade 6) View of the Proof?. Usta ad Albim BOHEMICA, č. 1, zv. X, str. 91–96, 2010
- ADE4 **Baláž V.**, P. Liardet, O. Strauch "Distribution Functions Of Sequence $\varphi(M)/M$,
 $M \in (K, K + N]$ As K,N Go To Infinity" INTEGERS **10** (2010), 705-732

Published Conference Contributions

- AFC1 **Babinec, Štefan** [100%]: Použitie kombinácie FIR neurónových sietí pri predikcií časových radov. - , 2010.
 In: Kognice a umělý život X. - : Slezská universita v Opavě, 2010. - ISBN 978-80-7248-589-5. - S. 29-35
- AFC2 **Babinec, Štefan** [50%] - Pospíchal, Jiří [50%]: Using combination of FIR neural networks in time series prediction.
 In: Mendel 2010: 16th International Conference on Soft Computing, June 23-25, Brno, Czech Republic : Evolutionary Computation, Genetic Programming, Fuzzy Logic, Rough Sets, Neural Networks, Fractals, Bayesian Methods. - : Brno University of Technology, 2010. - ISBN 978-80-214-4120-0. - S. 286-292
- AFD1 Janiga, Ivan [60%] - **Garaj, Ivan** [40%]: On two-sided statistical tolerance intervals for normal distributions with unknown parameters.
 In: Measurement 2009 : Proceedings. 7th International Conference on Measurement. Smolenice, Slovak Republic, 20.-23.5.2009. - Bratislava : Institute of Measurement Science Slovak Academy of Sciences, 2009. - ISBN 978-80-969672-1-6. - S. 57-60
- AFD2 **Jasem, Milan** [100%]: Relatively Uniform Convergence in Riesz Groups. - , 2010.
 In: Aplimat 2010 : 9th International Conference, February 2-5, 2010, Bratislava. - Bratislava : STU v Bratislavě, 2010. - ISBN 978-80-89313-47-1. - S. 57-61
- AFD3 **Varga, Š.**: Fuzzy predictions in regression models. V Aplimat 2010, STU, str. 451–458, 2010
- AFG1 **Gyürki, Štefan** [90%] - Štupáková, Beáta [10%]: A generalization of Kyš's and Plesník's construction of goal-minimally k-diametric graphs. - , 2010.
 In: 45. česko-slovenská konference GRAFY 2010 : Zborník abstraktov. Lednice, Czech Republic, 31.5.-4.6.2010. - Brno : University of Defence, 2010. - ISBN 978-80-7231-723-3. - S. 24
- AFH1 Klement, Erich Peter [5%] - **Kolesárová, Anna** [10%] - Stupňanová, Andrea [85%]: Chebyshev stability of discrete universal integrals based on copulas. - , 2010.
 In: FSTA 2010 : Tenth International Conference on Fuzzy Set Theory and Applications, February 1-5, Liptovský Ján. - Liptovský Mikuláš : Armed Forced Academy of General M.R.Štefánik, 2010. - ISBN 978-80-8040-391-1. - S. 78
- AFH2 **Kolesárová, Anna** [50%] - Mordelová, Juliana [35%] - Stupňanová, Andrea [15%]: Aggregation functions as extensions of fuzzy measures. - , 2010.
 In: FSTA 2010 : Tenth International Conference on Fuzzy Set Theory and Applications, February 1-5, Liptovský Ján. - Liptovský Mikuláš : Armed Forced Academy of General M.R.Štefánik, 2010. - ISBN 978-80-8040-391-1. - S. 80
- AFH3 **Šabo, Michal** [100%]: Self-Reversibility and Some Other Properties of Binary Operations. - , 2010.
 In: FSTA 2010 : Tenth International Conference on Fuzzy Set Theory and Applications, February 1-5, Liptovský Ján. - Liptovský Mikuláš : Armed Forced Academy of General M.R.Štefánik, 2010. - ISBN 978-80-8040-391-1. - S. 120-121

INSTITUTE OF ORGANIC CHEMISTRY, CATALYSIS AND PETROCHEMISTRY

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Foreword

Institute of Organic Chemistry, Catalysis and Petrochemistry consists of three departments: Department of Organic Chemistry, Department of Organic Technology and Department of Petroleum Technology and Petrochemistry. It covers wide area of theoretic and applied organic chemistry and offers interesting undergraduate and graduate courses as well as PhD studies in this field.

Teaching activities

The institute guarantees the Dipl. Eng. study programs and PhD study programs in the field of organic chemistry, organic technology and petroleum technology from theoretical point of view through laboratory practice and analysis to industrial realisations and design.

Research profile

Stereospecific syntheses and chiral compounds, chemistry of natural compounds and drugs.
Research in the field of industrial chemicals with the main accent on modern catalytic systems and green technologies.
Chemical specialities (so called fine chemistry – antioxidants, pigments).
Fuel, refinery technologies and technologies for deep processing of crude oil products.

Department of Organic Chemistry

Head of Department prof. Tibor Gracza, DSc.



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Projects

Program VMSP

Project Code: VMSP-P-0130-09
 Title (sl.): Efektívna syntéza čistých beta-aminokyselín a ich funkčných derivátov
 Title (eng.): Efficient synthesis of beta-amino acids and their derivatives
 Project duration: 01. 09. 2009 - 31. 08. 2011
 Responsible person: **doc. Ing. Peter Szolcsányi, PhD.**

APVV

Project Code: APVV-0210-07
 Title (sl.): Nové efektívne stratégie pre stereoselektívne syntézy analógov biologicky aktívnych indolizídínových alkaloidov z aminokyselín
 Title (eng.): New effective strategies for stereoselective syntheses of analogues of biologically active indolizidine alkaloids from amino acids.
 Project duration: 01. 09. 2008 - 31. 12. 2010
 Responsible person: **prof. Ing. Štefan Marchalín, DrSc.**

APVV

Project Code: APVV-0164-07
 Title (sl.): Nové paládium katalyzované transformácie v totálnej syntéze biologicky aktívnych prírodných látok a ich analógov
 Title (eng.): Novel palladium catalysed transformations in total syntheses of biologically active natural products and their analogues
 Project duration: 01. 09. 2008 - 31. 12. 2010
 Responsible person: **doc. Ing. Peter Szolcsányi, PhD.**

APVV

Project Code: LPP-0071-09
 Title (sl.): Stereoselektívne Pd(II)-katalyzované cyklizácie v syntéze prírodných látok
 Title (eng.): Stereoselective Pd(II)-catalysed cyclisations in natural product synthesis
 Project duration: 01. 09. 2009 - 31. 08. 2013
 Responsible person: **prof. Ing. Tibor Gracza, DrSc.**

VEGA

Project Code: 1/0340/10

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| Title (sl.): | Kombinácia kryštalizáciou indukovanej asymetrickej transformácie a kovom katalyzovaných transformácií ako efektívneho spôsobu využitia syntetického potenciálu aminokyselín v príprave biologicky účinných prírodných látok a ich funkčných analógov |
| Title (eng.): | The combination of crystallization-induced asymmetric transformation and metal catalyzed transformations as an efficient way of utilization of the synthetic potential of amino acids in the preparation of biologically active natural substances |
| Project duration: | 2010 - 2011 |
| Responsible person: | Ing. Andrej Kolarovič, PhD. |

VEGA

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| Project Code: | 1/0225/08 |
| Title (sl.): | Príprava, biologické a fyzikálnochemické vlastnosti nových heterocyklických zlúčenín s potenciálnym využitím v medicíne, nanotechnológiach, ochrane dreva a papiera a iných aplikáciách |
| Title (eng.): | Preparation, biological and physical properties of new heterocyclic compounds with application in medicine, nanotechnologies. |
| Project duration: | 01. 01. 2008 - 30. 11. 2010 |
| Responsible persons: | prof. Ing. Viktor Milata, DrSc. |

VEGA

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| Project Code: | 1/0161/08 |
| Title (sl.): | Stereoselektívna syntéza indolizidinolov a ich analógov. |
| Title (eng.): | Stereoselective synthesis of indolizidines and their analogues |
| Project duration: | 01. 01. 2008- 31. 12. 2010 |
| Responsible person: | prof. Ing. Štefan Marchalín, DrSc. |

VEGA

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| Project Code: | 1/0115/10 |
| Title (sl.): | Stereoselektívne paládiom katalyzované cyklizácie a "cross-coupling" reakcie v syntéze prírodných látok |
| Title (eng.): | Stereoselective palladium catalysed cyclisations and cross-coupling reactions in natural product synthesis |
| Project duration: | 2010 - 2011 |
| Responsible person: | prof. Ing. Tibor Gracza, DrSc. |

VEGA

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|---------------------|---|
| Project Code: | 1/0629/08 |
| Title (sl.): | Syntetické štúdie modifikovaných oxoaminokyselín a ich derivátov |
| Title (eng.): | Synthetic studies of substituted oxoamino acids and their derivatives |
| Project duration: | 01. 01. 2008 - 31. 12. 2010 |
| Responsible person: | doc. Ing. Dušan Berkeš, CSc. |

VEGA

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| Project Code: | 1/0236/09 |
| Title (sl.): | Syntéza bioaktívnych prírodných látok a ich analógov |
| Title (eng.): | Synthesis of biologically active natural compounds and their analogues |
| Project duration: | 01. 01. 2009 - 31. 12. 2011 |
| Responsible persons: | prof. Ing. Ľubor Fišera, DrSc. |

VEGA

Project Code: 2/0109/10
 Title (sl.): História chemického priemyslu na Slovensku
 Title (eng.): The History of Chemical Industry in Slovakia
 Project duration: 01. 01. 2009 - 31. 12. 2011
 Responsible persons: **prof. Ing. Viktor Milata, DrSc.**

KEGA

Project Code: 014-013STU-4
 Title (sl.): Chemický priemysel v zrkadle dejín Slovenska
 Title (eng.): Chemical industry like mirror of history of Slovakia
 Project duration: 01. 01. 2010 - 31. 12. 2011
 Responsible persons: **prof. Ing. Viktor Milata, DrSc.**

List of bachelor (BT), diploma (DT) and dissertation (DissT) theses

| Type | Final thesis | Supervisor |
|------|---|----------------------------------|
| BP | Bc. Gabriela Bitterová Polysubstituted oxoprolines. Synthesis and transformations | doc. Ing. Dušan Berkeš, CSc. |
| BP | Bc. Alexandra Filipová Chiral Nitrones in the Synthesis of Naturally Occuring Substrates | prof. Ing. Ľubor Fišera, DrSc. |
| BP | Bc. Valéria Hamadová Utilization of Chiral Cyclic Nitrones in Synthesis | prof. Ing. Ľubor Fišera, DrSc. |
| BP | Bc. Daniela Javoreková Preparation of chiral cyclic nitrones and using in synthesis | prof. Ing. Ľubor Fišera, DrSc. |
| BP | Bc. Beáta Kandriková Pd(II)-Catalysed Transformations of Unsaturated Polyols: New Type of Cyclocyanation | Ing. Matej Babjak, PhD. |
| BP | Bc. Milan Laurenčík The Synthesis of Isoxazolidines by 1,3-Dipolar Cycloaddition of Chiral Nitrones and their Utilization in the Synthesis of Natural Products | prof. Ing. Ľubor Fišera, DrSc. |
| BP | Bc. Lívia Lépesová Cyklotrimerization of Thiophene and Pyrrolic Ketones for Preparation of New Photo- and Electroactive Amorphous Materials and Thin Layer Solar Cells | Ing. Daniel Végh, DrSc. |
| BP | Bc. Monika Minarechová PDPP Homologues. Study of Chemoselective N-acylation | doc. Ing. Dušan Berkeš, CSc. |
| BP | Bc. Adam Smolka Substituted Indolyloxobutenoic Acids in Synthesis of Dipeptides | RNDr. Anna Koreňová, CSc. |
| BP | Bc. Boris Stanko Using of Transition Elements in Synthesis of Isoxazolidinyl Nucleosides | Ing. Róbert Fischer, PhD. |
| BP | Bc. Matej Šomodík Stereoselective Synthesis of Indolizidinediols | Ing. Peter Šafař, CSc. |
| BP | Bc. Monika Tomanová Clopidogrel. Study of Crystallization - Induced Asymmetric Transformation (CIAT) | doc. Ing. Dušan Berkeš, CSc. |
| DP | Ing. Katarína Čamborová Homologues PDMP - Synthesis and Properties | doc. Ing. Dušan Berkeš, CSc. |
| DP | Ing. Veronika Ďurišová | doc. Ing. Peter Szolcsányi, PhD. |

| | | |
|------|---|---------------------------------|
| | Total Synthesis of (Epi)pinidinol | |
| DP | Ing. Marianna Ďuranová Synthetic study of pallavicinine and neopallavicinine | prof. Ing. Tibor Gracza, DrSc. |
| DP | Ing. Kristína Illésová Utilization of Isoxazolidine Derivates in the Synthesis of Natural Analogs | prof. Ing. Ľubor Fišera, DrSc. |
| DP | Ing. Daniela Lackovičová Synthesis of Varitriol Analogues | Ing. Angelika Lásiková, PhD. |
| DP | Ing. Martin Markovič Stereoselective Pd-catalyzed cyclization of unsaturated polyols and aminoalcohols | Ing. Angelika Lásiková, PhD. |
| DP | Ing. Kristína Plevová Study of Reaction of 3-Fluoroaniline with Activated Enolethers | prof. Ing. Viktor Milata, DrSc. |
| DP | Ing. Milica Sabolová Using of chiral cyclic nitrones in the synthesis of modified nucleosides | prof. Ing. Ľubor Fišera, DrSc. |
| DP | Ing. Peter Tisovský Synthesis of New pi-conjugated Pyrrole Type Heterocyclic Compounds for Preparation of New Foto- and Electroactive Materials | Ing. Daniel Végh, DrSc. |
| DP | Ing. Martina Uhrinová CIAT of aminoketones. Applications in the synthesis of intermediate of Tramadol | doc. Ing. Dušan Berkeš, CSc. |
| DizP | Ing. Anita Andicsová, PhD. Utilization of Vilsmeier reaction on the preparation of pi-conjugated oligoheterocyclic compounds with high grade of structural homogeneity | Ing. Daniel Végh, DrSc. |
| DizP | Ing. Zsolt Végh, PhD. New methods for synthesis of pi-conjugated thiophene oligomers with high level of structural homogeneity | Ing. Daniel Végh, DrSc. |

Selected publications

Journals

Current Contents Publications

- ADC1 **Bella, Maroš** [30%] - Schultz, Marcel [20%] - **Milata, Viktor** [20%] - Koňariková, Katarína [15%] - Breza, Martin [15%]: Application of the Gould-Jacobs reaction to 4-amino-2,1,3-benzoselenadiazole.
In: Tetrahedron. - ISSN 0040-4020. - Vol. 66, Iss. 41 (2010), s. 8169-8174
- ADC2 Bellovičová, Lenka [30%] - Kožíšek, Jozef [30%] - **Doháňšová, Jana** [20%] - **Lásiková, Angelika** [10%] - **Gracza, Tibor** [10%]: Rac-(3aR,6aR)-(E)-Methyl 2-(3a-methylperhydrofuro[3,2-b]furan-2-ylidene)acetate.
In: ACTA CRYSTALLOGRAPHICA SECTION E-STRUCTURE REPORTS ONLINE. - ISSN 1600-5368. - E66 (2010), O2381-U930
- ADC3 Fargašová, Agáta [40%] - Ondrejkovičová, Iveta [20%] - Kramarová, Zuzana [20%] - **Fáberová, Zuzana** [20%]: Changes in physiological activity of algae Desmodesmus quadricauda after active bioaccumulation of newly prepared and characterized Fe(III) complexes with pyridine-3-carboxamide (pca) by living algal cells. - , 2010.
In: Bioresource Technology. - ISSN 0960-8524. - Vol. 101, Iss. 16 (2010), s. 6410-6415
- ADC4 Gróf, Martin [30%] - Gatial, Anton [30%] - **Milata, Viktor** [10%] - Prónayová, Nadežda [10%] - Kožíšek, Jozef [5%] - Breza, Martin [5%] - Matějka, Pavel [10%]: Conformational and isomerizational studies of 3-N,N-dimethylhydrazino-2-acetyl propenenitrile using X-ray analysis, NMR and vibrational spectra, and ab initio calculations.

- In: Journal of Molecular Structure. - ISSN 0022-2860. - Vol. 938, Iss. 1-3 (2009), s. 97-110
- ADC5 **Jakubec, Pavol** [25%] - **Petráš, Pavel** [25%] - **Ďuriš, Andrej** [25%] - **Berkeš, Dušan** [25%]: The first example of a crystallization-induced asymmetric transformation (CIAT) in the Mannich reaction. - , 2010.
In: Tetrahedron: Asymmetry. - ISSN 0957-4166. - Vol. 21, Iss. 1. - , 2010, s. 69-74
- ADC6 **Koós, Peter** [40%] - Špánik, Ivan [30%] - **Gracza, Tibor** [30%]: Asymmetric intramolecular Pd(II)-catalysed amidocarbonylation of unsaturated amino alcohols.
In: Tetrahedron: Asymmetry. - ISSN 0957-4166. - Vol. 20, Iss. 23 (2010), s. 2720-2723
- ADC7 **Palík, Miroslav** [25%] - **Karlubíková, Ol'ga** [25%] - **Lásiková, Angelika** [25%] - **Gracza, Tibor** [25%]: An Efficient Total Synthesis of (+)-Varitriol from D-Ribonolactone.
In: Synthesis. - ISSN 0039-7881. - Iss. 20 (2010), s. 3449-3452
- ADC8 **Palík, Miroslav** [25%] - **Karlubíková, Ol'ga** [20%] - **Lackovičová, Daniela** [15%] - **Lásiková, Angelika** [20%] - **Gracza, Tibor** [20%]: Formal synthesis of (+)-varitriol. Application of Pd(II)/Cu(II)-catalysed bicyclisation of unsaturated polyols.
In: Tetrahedron. - ISSN 0040-4020. - Vol. 66, Iss. 27-28 (2010), s. 5244-5249
- ADC9 **Palík, Miroslav** [25%] - **Karlubíková, Ol'ga** [25%] - **Lásiková, Angelika** [20%] - Kožíšek, Jozef [10%] - **Gracza, Tibor** [20%]: Total Synthesis of (+)-Varitriol.
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- ADC10 Puterová, Zita [60%] - Krutošíková, Alžbeta [20%] - **Végh, Daniel** [20%]: Gewald reaction: synthesis, properties and applications of substituted 2-aminothiophenes.
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- ADC11 Rimarčík, Ján [16%] - Lukeš, Vladimír [14%] - Klein, Erik [14%] - Kelterer, Anne-Marie [14%] - **Milata, Viktor** [14%] - Vrecková, Zuzana [14%] - Brezová, Vlasta [14%]: Photoinduced processes of 3-substituted 6-fluoro-1,4-dihydro-4-oxoquinoline derivatives: A theoretical and spectroscopic study. - , 2010.
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- ADC12 **Šafář, Peter** [30%] - **Žúžiová, Jozefína** [20%] - **Tóthová, Eva** [5%] - **Marchalín, Štefan** [10%] - Prónayová, Nadežda [10%] - Švorc, Ľubomír [10%] - Vrábel, Viktor [5%] - Comesse, Sébastien [5%] - Daich, A. [5%]: Regioselective ring opening of the chiral non-racemic furoindolizidinols. New entry to alkylindolizidinediol derivatives.
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- ADC13 Švorc, Ľubomír [30%] - Vrábel, Viktor [20%] - **Žúžiová, Jozefína** [15%] - **Marchalín, Štefan** [15%] - Kožíšek, Jozef [20%]: (6 S,7 S,8 R,8a S)-6-Ethylperhydroindolizine-7,8-diol. - , 2010.
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Other Publications

- ADF1 **Jamrich, Martin** [40%] - Balgová, Jarmila [10%] - Benčíková, Eleonóra [10%] - Ščasníková, Katarína [10%] - Vnenčáková, Janka [10%] - Bukatová, Katarína [10%] - Horbanová, Ľuba [10%]: The structure and properties of integrated textiles based on polyactide, bamboo, cotton and polypropylene fibres. - , 2009.
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- AEC1 Dvoranová, Dana [17%] - Barbieriková, Zuzana [17%] - Staško, Andrej [17%] - **Milata, Viktor** [17%] - **Bella, Maroš** [17%] - Brezová, Vlasta [15%]: On Photoinduced Reactions of Quinolones in Titanium Dioxide Suspensions (EPR Investigations). - , 2010.
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- AFC1 Barbieriková, Zuzana [17%] - Staško, Andrej [17%] - Zalibera, Michal [17%] - **Bella, Maroš** [17%] - **Milata, Viktor** [17%] - Brezová, Vlasta [15%]: Spectroscopic Study of Selenadiazoloquinolones in Alkaline Media. - , 2010.
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- AFC2 Timár, Pavel [50%] - **Štibrányi, Ladislav** [50%]: Ekologická technológia na regeneráciu odpadových olejov : 4. ročník česko-slovenského symposia, .
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In: 2nd International Workshop on Physical Chemistry and Material Physics, June 1-4, 2010, Častá-Papiernička. - : STU v Bratislave, 2010. - ISBN 978-80-227-3306-9. - S. 15-16
- AFD2 **Milata, Viktor** [50%] - **Bella, Maroš** [50%]: Príprava, vlastnosti a syntetické využitie 9-etyl selenadiazolochinolónov. - 5 s.
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- AFD3 Rimarčík, Ján [16%] - Punyain, Kraiwan [14%] - Lukeš, Vladimír [14%] - Klein, Erik [14%] - **Milata, Viktor** [14%] - Brezová, Vlasta [14%] - Kelterer, Anne-Marie [14%]: Theoretical Study on the IR Spectra and the Photophysics of Substituted Quinolones. - , 2010.
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- AFE1 **Milata, Viktor** [100%]: Activated enolethers in the synthesis of heterocycles.
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- AFG1 Gatial, Anton [30%] - Breza, Martin [10%] - Polovková, Júlia [10%] - Gróf, Martin [10%] - Matějka, Pavel [20%] - **Milata, Viktor** [10%] - Prónayová, Nadežda [10%]: Interpretation of vibrational and NMR spectra and solvent effect calculations of some ethylene push-pull compounds.
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- AFG2 Gatial, Anton [30%] - Juhászová, Helena [20%] - Gróf, Martin [10%] - Kožíšek, Jozef [10%] - **Milata, Viktor** [10%] - Prónayová, Nadežda [10%] - Matějka, Pavel [10%]: Izomerizational and conformational study of methyl-2-cyano-3-methoxyacrylate (MCMA) and methyl-2-cyano-3-aminoacrylate (MCAA) and its N-methyl derivates.
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- AFG3 Zalibera, Michal [10%] - Staško, Andrej [20%] - Barbieriková, Zuzana [10%] - Rimarčík, Ján [10%] - Lukeš, Vladimír [10%] - **Bella, Maroš** [10%] - **Milata, Viktor** [10%] - Gescheidt, Georg [10%] - Brezová, Vlasta [10%]: Anodic oxidation of selenadiazoloquinolones in alkaline media (EPR study).
In: WWWMR 2010 Joint EUROMAR 2010 and 17th ISMAR Conference, Florence, July 4-9, 2010 : Book of Abstracts. - , 2010. - S. 412
- AFH1 **Babjak, Matej** [70%] - **Gracza, Tibor** [30%]: Liquid-phase parallel synthesis: adaptation of Pd(II) catalysed carbonylation.
In: XXIXth Conference of Organic Chemists, Advances in Organic Chemistry, Smolenice, 5.-

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- AFH2 **Karlubíková, Ol'ga [25%]** - **Palík, Miroslav [25%]** - **Lásiková, Angelika [25%]** - **Gracza, Tibor [25%]**: Total synthesis of (+)-varitriol and its analogues.
In: XXIXth Conference of Organic Chemists, Advances in Organic Chemistry, Smolenice, 5.-9.9.2010. - , 2010. - S. 78
- AFH3 **Števíková, Zuzana [30%]** - **Lásiková, Angelika [40%]** - **Gracza, Tibor [30%]**: Synthesis of varitriol's analogues.
In: XXIXth Conference of Organic Chemists, Advances in Organic Chemistry, Smolenice, 5.-9.9.2010. - , 2010. - S. 106
- AFH4 **Švorc, Ľubomír [40%]** - **Vrábel, Viktor [30%]** - **Olejníková, Petra [20%]** - **Marchalín, Štefan [10%]**: Prediction of biological activity of nonsynthesized indolizine furan analogs.
In: Analytické metódy a zdravie človeka, 18. medzinárodná konferencia, 11.-14.10. 2010, Bratislava. - : Slovenská vákuová spoločnosť, 2010. - ISBN 978-80-969435-6-2. - P-B-21
- AFH5 **Švorc, Ľubomír [30%]** - **Májek, Pavel [20%]** - **Vrábel, Viktor [10%]** - **Olejníková, Petra [20%]** - **Tóthová, Eva [10%]** - **Marchalín, Štefan [10%]**: Štúdium vzťahov štruktúra - biologická aktivita derivátov indolizínu. - , 2010.
In: Chemické listy. - : Česká společnost chemická. - ISSN 1213-7103. - Vol. 104, Iss. 16. - , 2010, s. 493
- AFH6 **Vrábel, Viktor [50%]** - **Švorc, Ľubomír [30%]** - **Marchalín, Štefan [20%]**: Kryštálová štruktúra a charakterizácia derivátov indolizínu. - 2 s.
In: Analytické metódy a zdravie človeka, 18. medzinárodná konferencia, 11.-14.10. 2010, Bratislava. - : Slovenská vákuová spoločnosť, 2010. - ISBN 978-80-969435-6-2. - nestr.

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Projects**APVV**

Project Code:

APVV-0168-07

Title (sl.):

Výskum efektívnych a ekologických technológií výroby sulfenamidov

Title (eng.):

Development of effective and ecologic technologies of sulfenamide preparation

Project duration:

01. 09. 2008 - 31. 12. 2010

Responsible person:

prof. Ing. Milan Hronec, DrSc.

APVV

| | |
|---------------------|---|
| Project Code: | APVV-0446-07 |
| Title (sl.): | Výskum technológie prípravy derivátov difenylamínu ako stabilizátorov polymérov a olejov a postupy na dosiahnutie ich vyššieho účinku |
| Title (eng.): | Research of preparation diphenylamine derivatives as stabilizers of polymers and oils, and methods for increasing of its effect |
| Project duration: | 01. 09. 2008 – 31.12.2010 |
| Responsible person: | prof. Ing. Dušan Mravec, CSc. |

VEGA

| | |
|---------------------|--|
| Project Code: | 1/0768/08 |
| Title (sl.): | Selektívne procesy pre chemické špeciality |
| Title (eng.): | Selective processes for chemical specialties |
| Project duration: | 01. 01. 2008 - 31. 12. 2010 |
| Responsible person: | doc. Ing. Magdaléna Štolcová, PhD. |

List of bachelor (BT), diploma (DT) and dissertation (DissT) theses

| Type | Final thesis | Supervisor |
|------|--|------------------------------------|
| BT | Bc. Emilián Gocník Preparation and uses of carbide catalysts | Ing. Dana Gašparovičová, PhD. |
| BT | Bc. Veronika Hergelová Transformation of methane to formaldehyde | doc. Ing. Magdaléna Štolcová, PhD. |
| BT | Bc. Norbert Kováč Manufacturing of carbonates from polyalcohols | doc. Ing. Alexander Kaszonyi, CSc. |
| BT | Marek Maruniak Nanostructured oxides as selective catalysts | Ing. Blažej Horváth, PhD. |
| BT | Bc. Šimon Špirek Catalytic transformation of bioglycerol | doc. Ing. Magdaléna Štolcová, PhD. |
| BT | Bc. Maroš Špirko Hydrogen peroxide as ecological oxidant | prof. Ing. Milan Hronec, DrSc. |
| BT | Bc. Miroslava Valentová Preparation and utilization of ethers | prof. Ing. Dušan Mravec, CSc. |
| BT | Bc. Daniel Vašš Energetic polymers containing nitroxy groups | prof. Ing. Milan Hronec, DrSc. |
| DT | Ing. László Seemann Study of preparation of carbonates from bioglycerol | doc. Ing. Alexander Kaszonyi, CSc. |
| DT | Ing. Martin Šustek Selective oxidation of cyclohexanone | Ing. Dana Gašparovičová, PhD. |
| DT | Ing. Andrej Turan Alkylation of diphenylamine over heterogeneous catalysts | prof. Ing. Dušan Mravec, CSc. |
| DT | Ing. Stanislav Vajíček Study of oxidations of amines over heterogeneous catalysts | doc. Ing. Alexander Kaszonyi, CSc. |
| DisT | Ing. Juraj Gömöry, PhD. Technological aspects of d,l- α -tocopherol synthesis from 2,3,5-trimethylhydrochinone and izophytol | doc. Ing. Alexander Kaszonyi, CSc. |
| DisT | Ing. Katarína Klepáčová, PhD. Etherification of polyalcohols | prof. Ing. Dušan Mravec, CSc. |
| DisT | Ing. Gabriel Kostrab, PhD. Study of shape-selectivity of zeolite catalysts | prof. Ing. Dušan Mravec, CSc. |

| | | |
|------|---|------------------------------------|
| DisT | Ing. Karol Rakottyay, PhD. Selective oxidations of amines over heterogeneous catalysts | doc. Ing. Alexander Kaszonyi, CSc. |
| DisT | Ing. Miroslav Vlčko, PhD. Dehydrocyclization of aromatic amines in the gas phase | prof. Ing. Milan Hronec, DrSc. |

Selected publications

Journals

Current Contents Publications

- ADC1 Mlynková, Božena [60%] - Bajus, Martin [20%] - Hájeková, Elena [10%] - Kostráb, Gabriel [5%] - **Mravec, Dušan** [5%]: Fuels Obtained by Thermal Cracking of Individual and Mixed Polymers. - , 2010.
In: Chemical Papers. - ISSN 0366-6352 . - Vol. 64, Iss. 1. - , 2010, s. 15-24
- ADC2 **Rakottyay, Karol** [40%] - **Kaszonyi, Alexander** [40%] - **Vajíček, Stanislav** [20%]: Oxidation of amines over alumina based catalysts.
In: Applied Catalysis A. - ISSN 0926-860X. - Vol. 378, Iss. 1 (2010), s. 33-41
- ADC3 **Štolcová, Magdaléna** [20%] - **Kaszonyi, Alexander** [20%] - **Hronec, Milan** [20%] - Liptaj, Tibor [20%] - Kyselá, Gabriela [20%]: Direct sulfenylation of acetone with benzothiazolesulfenamides to benzothiazolylthio-substituted alkylaminopropene:synthesis and application.
In: Chemical Papers. - ISSN 0366-6352. - Vol. 64, Iss. 1 (2010), s. 65-71
- ADC4 **Vlčko, Miroslav** [50%] – **Cvengrošová, Zuzana** [10%] – **Cibulková, Zuzana** [5%] - **Hronec, Milan** [35%]: Dehydrocyclization of Diphenylamine to Carbazole over Platinum-Based Bimetallic Catalysts
In: Chinese Journal of Catalysis.- ISSN 1872-2067. – Vol. 31, Iss. 11-12 (2010), s. 1439-1444

Other Publications

- ADF1 **Gömöry, Juraj, Králik, Milan, Kaszonyi, Alexander, Mravec, Dušan** Study of (all-rac)- α -tocopherol synthesis from trimethylhydroquinone and isophytol at the presence of solid catalysts.
Acta Chimica Slovaca, 3(2), 110–121 (2010)

Published Conference Contributions

- AFC1 Buzetzki, Eduard [20%] - Švařová, Katarína [20%] - **Cvengrošová, Zuzana** [20%] - **Kaszonyi, Alexander** [15%] - Mikulec, Jozef [5%] - Cvengroš, Ján [20%]: Produkty krakovania opotrebovaných rastlinných olejov a živočíšnych tukov ako kvapalné motorové palivá a ich zložky. - , 2010.
In: Aprochem 2010, 19.-21.4.2010, Kouty nad Desnou, ČR. - : Vysoká škola chemicko-technologická v Praze, 2010. - ISBN 978-80-02-02212-1. - S. 1425-1432
- AFC2 Buzetzki, Eduard [10%] - **Cvengrošová, Zuzana** [40%] - Mikulec, Jozef [10%] - Cvengroš, Ján [40%]: Produkty krakovania triacylglycerolov ako zložky paliva pre dieselove motory.
In: Aprochem 2009, Zborník prednášok, 20.-22.apríl 2009, Milovy, ČR : 1.diel. - : PCHE - PetroChemEng, Praha, 2009. - ISBN 978-80-02-02105-6. - S. 1395-1402
- AFC3 Fellner, Pavel [20%] - Híveš, Ján [20%] - Jurišová, Jana [20%] - **Králik, Milan** [20%] - Pach, Ladislav [20%]: Preparation of magnesium hydroxide as filler for polymers. - 9 s.
In: CHISA 2010, ECCE 7, 19th International Congress of Chemical and Process Engineering, Prague : Full Texts. - : Orgit s.r.o., 2010. - ISBN 978-80-02-02210-7. - nestr.
- AFC4 **Gašparovičová, Dana** [50%] - **Šustek, Martin** [10%] - **Soták, Tomáš** [10%] - **Cvengrošová, Zuzana** [10%] - **Hronec, Milan** [20%]: Liquid phase oxidation of cyclohexanone to adipic acid with molecular oxygen over tungsten carbide catalysts.
In: 10th Pannonian International Symposium on Catalysis, Krakow, Poland, August 29-

- September 2, 2010 : Proceedings. - : Polish Zeolite Association, 2010. - ISBN 978-83-929430-4-4. - S. 308-315
- AFC5 **Horváth, Blažej [50%] - Hronec, Milan [50%]**: Gas-phase epoxidation of polypropylene over nanostructured iron catalysts.
In: 10th Pannonian International Symposium on Catalysis, Krakow, Poland, August 29-September 2, 2010 : Proceedings. - : Polish Zeolite Association, 2010. - ISBN 978-83-929430-4-4. - S. 72-80
- AFC6 Kleinová, Andrea [25%] - Rimarčík, Ján [25%] - **Cvengrošová, Zuzana [20%]** - Mikulec, Jozef [5%] - Cvengroš, Ján [25%]: Opotrebované fritovacie oleje ako zdroj biopalív. - , 2010.
In: Aprochem 2010, 19.-21.4.2010, Kouty nad Desnou, ČR. - : Vysoká škola chemicko-technologická v Praze, 2010. - ISBN 978-80-02-02212-1. - S. 1363-1370
- AFC7 Kleinová, Andrea [30%] - **Cvengrošová, Zuzana [30%]** - Mikulec, Jozef [10%] - Cvengroš, Ján [30%]: Properties of fatty acids methyl esters from used frying oils. - 7 s.
In: CHISA 2010, ECCE 7, 19th International Congress of Chemical and Process Engineering, Prague : Full Texts. - : Orgit s.r.o., 2010. - ISBN 978-80-02-02210-7. - nestr.
- AFC8 Matisová, Marta [40%] - **Kaszonyi, Alexander [10%]** - Komora, L. [10%] - Mikeštík, Antonín [10%] - Kupec, Pavol [10%] - Žišková, Libuša [10%] - Grolmus, Peter [10%]: Nový polyuretánový katalyzátor.
In: Aprochem 2009, Zborník prednášok, 20.-22.apríl 2009, Milovy, ČR : 1.diel. - : PCHE - PetroChemEng, Praha, 2009. - ISBN 978-80-02-02105-6. - S. 1260-1265
- AFC9 Pach, Ladislav [20%] - Fellner, Pavel [20%] - Híveš, Ján [20%] - Jurišová, Jana [20%] - **Králik, Milan [20%]**: Skúmanie procesu vzniku zrážaného Mg(OH)₂ meraním vodivosti systému.
In: Aprochem 2010, 19.-21.4.2010, Kouty nad Desnou, ČR. - : Vysoká škola chemicko-technologická v Praze, 2010. - ISBN 978-80-02-02212-1. - S. 2220-2224
- AFC10 **Polnišer, Róbert [50%] - Štolcová, Magdaléna [40%] - Hronec, Milan [10%]**: Direct oxidation of methane to formaldehyde over modified Cu-Fe-pyrophosphate catalysts.
In: 10th Pannonian International Symposium on Catalysis, Krakow, Poland, August 29-September 2, 2010 : Proceedings. - : Polish Zeolite Association, 2010. - ISBN 978-83-929430-4-4. - S. 81-87
- AFC11 **Rakottay, Karol [40%] - Kaszonyi, Alexander [40%] - Vajíček, Stanislav [20%]**: Study of the catalytic oxidation of cyclohexylamine by molecular oxygen, the influence of oxygen and water content in the feed. - 8 s.
In: 10th Pannonian International Symposium on Catalysis, Krakow, Poland, August 29-September 2, 2010 : Proceedings. - : Polish Zeolite Association, 2010. - ISBN 978-83-929430-4-4. - nestr.
- AFC12 **Soták, Tomáš [60%] - Hronec, Milan [40%]**: Hydrogenolysis of polyalcohols to glycols in the presence of tungsten carbide catalysts.
In: 10th Pannonian International Symposium on Catalysis, Krakow, Poland, August 29-September 2, 2010 : Proceedings. - : Polish Zeolite Association, 2010. - ISBN 978-83-929430-4-4. - S. 266-273
- AFC13 **Turan, Andrej [40%] - Kostrab, Gabriel [30%] - Mravec, Dušan [30%]**: Tert-butylation of diphenylamine.
In: 10th Pannonian International Symposium on Catalysis, Krakow, Poland, August 29-September 2, 2010 : Proceedings. - : Polish Zeolite Association, 2010. - ISBN 978-83-929430-4-4. - S. 52-59
- AFD1 **Gašparovičová-Minarovičová, Dana [40%] - Cvengrošová, Zuzana [30%] - Hronec, Milan [30%]**: Liquid phase oxidation of cyclohexanone by molecular oxygen in a solvent-free system over nickel promoted tungsten carbides.
In: 44th International Petroleum Conference, Bratislava, Slovak Republic, September 21-22, 2009. - : VURUP, Slovnaft a.s., 2009. - ISBN 978-80-969792-1-9. - nestr.
- AFD2 **Kaszonyi, Alexander [90%] - Štolcová, Magdaléna [10%]**: Bioglycerol a new platform chemical.
In: 44th International Petroleum Conference, Bratislava, Slovak Republic, September 21-22, 2009. - : VURUP, Slovnaft a.s., 2009. - ISBN 978-80-969792-1-9. - nestr.
- AFD3 Kleinová, Andrea [20%] - **Cvengrošová, Zuzana [20%]** - Sidorová, Katarína [20%] - Buzetzkí, Eduard [5%] - Cvengroš, Ján [35%]: Motorové palivá z opotrebovaných fritovacích olejov. - ,

2010. - 10 s. In: Motor Fuels 2010, 9th International Symposium, June 14-17, 2010, Tatranské Matliare. - : SLOVNAFT - Výskumný ústav pre ropu a uhl'ovodíkové plyny, 2010. - ISBN 978-80-969710-5-3. - nestr.
- AFD4 **Lelovský, Marek** [30%] - **Seeman, László** [40%] - **Kaszonyi, Alexander** [30%]: Glycerol carbonate from bioglycerol. - 6 s.
In: 44th International Petroleum Conference, Bratislava, Slovak Republic, September 21-22, 2009. - : VURUP, Slovnaft a.s., 2009. - ISBN 978-80-969792-1-9. - nestr.
- AFD5 **Rakottyay, Karol** [60%] - **Kaszonyi, Alexander** [40%]: Gas phase oxidation of amines over alumina.
In: 44th International Petroleum Conference, Bratislava, Slovak Republic, September 21-22, 2009. - : VURUP, Slovnaft a.s., 2009. - ISBN 978-80-969792-1-9. - nestr.
- AFD6 **Štolcová, Magdaléna** [55%] - **Ševčík, Andrej** [35%] - **Kaszonyi, Alexander** [10%]: Catalytic oxidation of bioglycerol to mono- and dicarboxylic acids.
In: 44th International Petroleum Conference, Bratislava, Slovak Republic, September 21-22, 2009. - : VURUP, Slovnaft a.s., 2009. - ISBN 978-80-969792-1-9. - nestr.
- AFD7 **Štolcová, Magdaléna** [55%] - **Polnišer, Róbert** [35%] - **Hronec, Milan** [10%]: STRUCTURE-ACTIVITY COMPARISON OF BULK AND SILICA SUPPORTED CU-FE-P-O CATALYSTS FOR METHANE DIRECT OXIDATION TO FORMALDEHYDE In: 44th International Petroleum Conference, Bratislava, Slovak Republic, September 21-22, 2009. - : VURUP, Slovnaft a.s., 2009. - ISBN 978-80-969792-1-9. - nestr.
- AFG1 **Gašparovičová, Dana** [60%] - **Cvengrošová, Zuzana** [10%] - **Hronec, Milan** [30%]: Nickel promoted tungsten carbide catalysts in the liquid phase oxidation of cyclohexanone by molecular oxygen in a solvent-free system.
In: 41. Symposium on Catalysis, Prague, November 2-3, 2009. - : J.Heyrovský Institute of Physical Chemistry, 2009. - ISBN 978-80-87351-04-8. - S. 30-31
- AFG2 **Soták, Tomáš** [40%] - **Horváth, Blažej** [30%] - **Hronec, Milan** [30%]: Gas-phase epoxidation of polypropylene over supported iron oxide catalysts.
In: 41. Symposium on Catalysis, Prague, November 2-3, 2009. - : J.Heyrovský Institute of Physical Chemistry, 2009. - ISBN 978-80-87351-04-8. - S. 53-55
- AFG3 **Soták, Tomáš** [50%] - **Schmidt, Tomáš** [20%] - **Hronec, Milan** [30%]: Nanostructured tungsten carbides as catalysts for hydrogenolysis of sorbitol.
In: 42nd Symposium on Catalysis, Prague, November 1-2, 2010 : Book of Abstracts. - : Heyrovsky Institute of Physical Chemistry of the ASCR, v.v.i., 2010. - OP11
- AFG4 **Štolcová, Magdaléna** [25%] - Litterscheid, Christian [25%] - **Hronec, Milan** [25%] - Glaum, Robert [25%]: On the role of M II and M III in bimetallic phosphate and pyrophosphate catalysts for partial oxidation of methane.
In: 10th Pannonian International Symposium on Catalysis, Poland, Krakow, August 29-September 2, 2010 : Book of Abstracts. - : Polish Zeolite Association, 2010. - ISBN 978-83-929430-3-7. - S. 18-19
- AFG5 **Turan, Andrej** [40%] - **Kostrab, Gabriel** [30%] - **Mravec, Dušan** [30%]: Comparison of diphenylamide tert-butylation over H-Beta zeolite and two acid clays.
In: 42nd Symposium on Catalysis, Prague, November 1-2, 2010 : Book of Abstracts. - : Heyrovsky Institute of Physical Chemistry of the ASCR, v.v.i., 2010. - PO16

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Projects

APVV

Project Code: APVV-20-036705
Title (sl.): Využitie odpadových polymérnych a olejových materálov vo výrobe asfaltov
Title (eng.): The use of waste polymer and oil materials in production of bitumen
Project duration: 01. 05. 2006 - 31. 08. 2010
Responsible person: doc. Ing. Pavol Daučík, PhD.

VEGA

Project Code: 1/0012/09
 Title (sl.): Palivá a chemikálie z odpadov a biomasy
 Title (eng.): Fuel and chemicals from waste and biomass
 Project duration: 01. 01. 2009 - 31. 12. 2011
 Responsible person: prof. Ing. Martin Bajus, DrSc.

List of bachelor (BT), dissertation (DissT) theses

| Type | Final thesis | Supervisor |
|------|---|--------------------------------|
| BT | Bc. Vladimír Olerín Modification and Characterization of the Zeolites for the Acid-Catalyzed Reactions | doc. Ing. Pavol Hudec, CSc. |
| BT | Bc. Boris Jambor Recycling of polymer waste and biomass pyrolysis / copyrolysis | prof. Ing. Martin Bajus, DrSc. |

Selected publications**Journals****Current Contents Publications**

- ADC1 **Horňáček, Michal** [50%] - **Hudec, Pavol** [25%] - Nociar, Andrej [5%] - **Smiešková, Agáta** [10%] - Jakubík, Tibor [10%]: Activity and regenerability of dealuminated zeolite Y in liquid phase alkylation of benzene with 1-alkene. - , 2010.
 In: Chemical Papers. - ISSN 0366-6352 (<http://nic.savba.sk/sav/inst/chem/chempap.html>). - Vol. 64, Iss. 4. - , 2010, s. 469-474
- ADC2 **Horňáček, Michal** [50%] - **Hudec, Pavol** [30%] - **Smiešková, Agáta** [10%] - Jakubík, Tibor [10%]: Alkylation of Benzene with 1-alkenes over Beta Zeolite in Liquid Phase. - , 2010.
 In: Reaction Kinetics Mechanisms and Catalysis. - : Springer Verlag. - ISSN 1878-5190. - Vol. 99, No. 2. - , 2010, s. 431-437
- ADC3 **Mlynková, Božena** [60%] - **Hájeková, Elena** [10%] - **Bajus, Martin** [30%]: Coke formation in copyrolysis of oils or individual and mixed polymers in naphtha.
 In: Chemické listy. - ISSN 0009-2770. - Vol. 104, Iss. 10 (2010), s. 926-933
- ADC4 **Mlynková, Božena** [60%] - **Bajus, Martin** [20%] - **Hájeková, Elena** [10%] - **Kostráb, Gabriel** [5%] - Mravec, Dušan [5%]: Fuels Obtained by Thermal Cracking of Individual and Mixed Polymers. - , 2010.
 In: Chemical Papers. - ISSN 0366-6352 (<http://nic.savba.sk/sav/inst/chem/chempap.html>). - Vol. 64, Iss. 1. - , 2010, s. 15-24
- ADC5 **Smiešková, Agáta** [40%] - **Hudec, Pavol** [30%] - Kumar, Narendra [10%] - Salmi, Tapio [5%] - Murzin, Dmitry Yu. [5%] - Jorík, Vladimír [10%]: Aromatization of methane on Mo modified zeolites: Influence of the surface and structural properties of the carriers. - , 2010.
 In: Applied Catalysis A. - ISSN 0926-860X. - Vol. 377, Iss. 1-2. - , 2010

Other Publications

- ADF1 **Bajus, Martin** [100%]: Pyrolysis of woody material.
 In: Petroleum and Coal. - ISSN 1337-7027. - Roč. 52, č. 3 (2010), s. 207-214
- ADF2 **Bajus, Martin** [100%]: Pyrolysis technologies for biomass and waste treatment to fuels and chemical production. - , 2010.
 In: Petroleum and Coal. - ISSN 1337-7027. - Roč. 52, č. 1 (2010), s. 1-10

- ADF3 **Bajus, Martin** [70%] - **Hájeková, Elena** [30%]: Thermal cracking of the model seven components mixed plastics into oils/waxes.
In: Petroleum and Coal. - ISSN 1337-7027. - Roč. 52, č. 3 (2010), s. 164-172
- ADF4 Svitková, Michaela [50%] - **Daučík, Pavol** [50%]: Polymer additives effect on the dynamic viscosity of bituminous matrices used for radioactive waste fixation.
In: Petroleum and Coal. - ISSN 1337-7027. - Roč. 52, č. 1 (2010), s. 11-17
- ADF5 Svitková, Michaela [45%] - **Daučík, Pavol** [45%] - Balog, Karol [10%]: Sedimentation of ion exchange resin particles in bitumen matrix. - , 2010.
In: Petroleum and Coal. - ISSN 1337-7027. - Roč. 52, č. 2 (2010), s. 99-109

Published Conference Contributions

- AFC1 **Bajus, Martin** [100%]: Termický rozklad biomasy a polymérnych odpadov na chemikálie a palivá.
In: Aprochem 2010, 19.-21.4.2010, Kouty nad Desnou, ČR. - : Vysoká škola chemicko-technologická v Praze, 2010. - ISBN 978-80-02-02212-1. - S. 1120-1125
- AFC2 Foldesová, Mária [65%] - **Hudec, Pavol** [5%] - Holá, Oľga [30%]: Vplyv kalcinácie na zeolity klinoptilolitového a mordenitového typu. - , 2010.
In: Priemyselná toxikológia 2010, 30. vedecké sympózium, 16.-18.júna 2010, Svit, SR. - : Slovenská spoločnosť priemyselnej chémie, 2010. - ISBN 978-80-969710-6-0. - S. 249-257
- AFC3 **Horňáček, Michal** [55%] - **Hudec, Pavol** [35%] - **Smiešková, Agáta** [10%]: Activity and regenerability of mordenite catalysis in alkylation of benzene with linear 1-alkenes C6-C18 in liquid phase.
In: 10th Pannonian International Symposium on Catalysis, Krakow, Poland, August 29-September 2, 2010 : Proceedings. - : Polish Zeolite Association, 2010. - ISBN 978-83-929430-4-4. - S. 235-239
- AFC4 **Horňáček, Michal** [50%] - **Hudec, Pavol** [35%] - **Smiešková, Agáta** [15%]: Alkylácia benzénu s 1-dodecénom na dealuminovaných zeolitoch Y v prietokovom reaktore : 1.diel.
In: Aprochem 2009, Zborník prednášok, 20.-22.apríl 2009, Milovy, ČR : 1.diel. - : PCHE - PetroChemEng, Praha, 2009. - ISBN 978-80-02-02105-6. - S. 1181-1188
- AFC5 **Hudec, Pavol** [35%] - **Hudá, Mária** [25%] - **Horňáček, Michal** [25%] - **Smiešková, Agáta** [15%]: Improving of Porous Structure of Mordenite Alkylation Catalyst by Desilication.
In: 10th Pannonian International Symposium on Catalysis, Krakow, Poland, August 29-September 2, 2010 : Proceedings. - : Polish Zeolite Association, 2010. - ISBN 978-83-929430-4-4. - S. 21-28
- AFC6 **Hudec, Pavol** [30%] - **Hudá, Mária** [30%] - **Horňáček, Michal** [30%] - **Smiešková, Agáta** [10%]: Liquid-Phase Alkylation of Benzene with 1-dodecene over Desilicated Mordenites. - , 2009.
In: 41. Symposium on Catalysis, Prague, November 2-3, 2009. - : J.Heyrovský Institute of Physical Chemistry, 2009. - ISBN 978-80-87351-04-8. - S. 27-28
- AFC7 Michalková, Eva [40%] - **Hudec, Pavol** [40%] - **Daučík, Pavol** [20%]: Tvorba a vlastnosti sedimentov z kyslých banských výtokov.
In: Odpadové fórum 2009 : 4.ročník česko-slovenského symposia.Milovy,ČR,22.-24.4.2009. - Praha : APROCHEM, 2009. - ISBN 978-80-02-02108-7. - S. 3296-3302
- AFC8 **Mlynková, Božena** [50%] - **Hájeková, Elena** [20%] - **Bajus, Martin** [30%]: Tvorba koksu počas pyrolyzy polymérov s ropnými frakciami : 1.diel.
In: Aprochem 2009, Zborník prednášok, 20.-22.apríl 2009, Milovy, ČR : 1.diel. - : PCHE - PetroChemEng, Praha, 2009. - ISBN 978-80-02-02105-6. - S. 1158-1165
- AFD1 **Bajus, Martin** [100%]: Pyrolýza biomasy a polymérnych odpadov na palivá a chemikálie. - , 2009.
In: Realizácia technológií na využitie obnoviteľných zdrojov energie a výsledky bezpečnostného výskumu v EÚ, 1.-2.12.2009, Moštenica-Kyslá : Zborník prednášok. - : FOART, 2009. - ISBN 978-80-969710-4-6. - S. 15-22
- AFD2 **Bajus, Martin** [100%]: Zhodnocovanie biomasy novými termochemickými technológiami. - , 2009.

- In: Realizácia technológií na využitie obnoviteľných zdrojov energie a výsledky bezpečnostného výskumu v EÚ, 1.-2.12.2009, Moštenica-Kyslá : Zborník prednášok. - : FOART, 2009. - ISBN 978-80-969710-4-6. - S. 39-42
- AFD3 **Daučík, Pavol [40%]** - **Hadvinová, Marcela [40%]** - **Hudec, Pavol [5%]** - Jakubík, Tibor [15%]: Aromatické uhľovodíky v stredných destilátoch a dieselových palivách. - , 2010. - 9 s.
In: Motor Fuels 2010, 9th International Symposium, June 14-17, 2010, Tatranské Matliare. - : SLOVNAFT - Výskumný ústav pre ropu a uhľovodíkové plyny, 2010. - ISBN 978-80-969710-5-3. - nestr.
- AFD4 **Daučík, Pavol [40%]** - **Hadvinová, Marcela [35%]** - **Višňovský, Jozef [25%]**: Evaluation of Qualitative Properties of Bitumen - Polymer Mixtures.
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- AFD5 **Daučík, Pavol [50%]** - Borovička, Michal [50%]: Kvalitatívne a kvantitatívne hodnotenie zloženia hydroizolačných asfaltových pásov. - , 2009.
In: Strechy 2009 : Zborník zo sympózia, Bratislava, 12.-26.11.2009. - : STU v Bratislave, 2009. - ISBN 978-80-227-3209-3. - S. 157-161
- AFD6 **Horňáček, Michal [45%]** - **Hudec, Pavol [30%]** - **Smiešková, Agáta [10%]** - Jakubík, Tibor [15%]: Alkylation of Benzene with 1-Alkenes in Liquid Phase. Influence of Zeolite Type and Chain Length of 1-alkenes on Activity and Selectivity.
In: 44th International Petroleum Conference, Bratislava, Slovak Republic, September 21-22, 2009. - : VURUP, Slovnaft a.s., 2009. - ISBN 978-80-969792-1-9. - nestr.
- AFD7 **Hudec, Pavol [30%]** - **Oleríny, Vladimír [30%]** - **Horňáček, Michal [30%]** - **Smiešková, Agáta [10%]**: Modifikácie zeolitu Y desilikáciou pre možnú aplikáciu v FCC katalyzátoroch. - , 2010. - 7 s.
In: Motor Fuels 2010, 9th International Symposium, June 14-17, 2010, Tatranské Matliare. - : SLOVNAFT - Výskumný ústav pre ropu a uhľovodíkové plyny, 2010. - ISBN 978-80-969710-5-3. - nestr.
- AFG1 **Bajus, Martin [100%]**: Nové pyrolyzne technológie na zhodnocovanie biomasy.
In: Chemické listy. - Praha : Česká společnost chemická. - ISSN 0009-2770
(<http://www.uochb.cas.cz/ChemListy/chemistry.html>). - Vol. 104, Iss. 6. - , 2010, s. 556
- AFG2 **Bajus, Martin [60%]** - **Bartík, Miloš [20%]** - **Hájeková, Elena [20%]**: Pyrolysis of individual and mixed biomass, plastics and used tires.
In: 9th Novel Gas Conversion Symposium, C1-C4 chemistry: from fossil to bio-resources, Lyon, France, May 30th - June 3rd, 2010 : Book of Abstracts. - , 2010. - S. 118
- AFG3 **Horňáček, Michal [55%]** - **Hudec, Pavol [35%]** - **Smiešková, Agáta [10%]**: Alkylation of Benzene with 1-alkenes over Clays.
In: 42nd Symposium on Catalysis, Prague, November 1-2, 2010 : Book of Abstracts. - : Heyrovsky Institute of Physical Chemistry of the ASCR, v.v.i., 2010. - OP13
- AFG4 **Horňáček, Michal [50%]** - **Hudec, Pavol [30%]** - **Smiešková, Agáta [20%]**: Alkylation of Benzene with 1-dodecene over in Liquid-Phase over Heteropolyacids. - , 2009.
In: 41. Symposium on Catalysis, Prague, November 2-3, 2009. - : J.Heyrovský Institute of Physical Chemistry, 2009. - ISBN 978-80-87351-04-8. - S. 79
- AFG5 **Hudec, Pavol [35%]** - **Hudá, Mária [20%]** - **Horňáček, Michal [20%]** - **Jorík, Vladimír [15%]** - **Smiešková, Agáta [10%]**: Influence of Mordenite Desilication on Resistance against Coking. - , 2010.
In: 16th International Zeolite Conference joint with the 7th International Mesostructured Materials Symposium, Sorento, Italy, July 4-9, 2010. - : A. De Frede, Napoli, Italy, 2010. - ISBN 978-88-89976-29-6. - S. 131-132
- AFH1 **Bajus, Martin [50%]** - **Mlynková, Božena [50%]**: Copyrolysis and Cocracking of Oil Fractions with Polymeric Wastes by Chemical Recycling. - , 2009.
In: ChemZi - Chemické zvesti. - ISSN 1336-7242. - Roč. 5, č. 9. - , 2009, s. 108
- AFH2 **Bajus, Martin [100%]**: Pyrolysis Technologies for Biomass and Waste Treatment to Fuels and Chemical Productions. - , 2009. - 1 s.
In: 44th International Petroleum Conference, Bratislava, Slovak Republic, September 21-22, 2009. - : VURUP, Slovnaft a.s., 2009. - ISBN 978-80-969792-1-9. - nestr.

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Head of Institute

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Foreword

The Institute of Polymer Materials consists of four departments:

- Department of Chemical Technology of Wood, Pulp and Paper
- Department of Fibres and Textile Chemistry
- Department of Graphic Arts Technology and Applied Photochemistry
- Department of Plastics and Rubber

The history of the Institute dates back to 1943, when the Department of wood technology and the Department of technology of organic substances were established and first lectures connected with polymer chemistry and polymer technology were opened. The Institute occupies specific position within Slovak Republic and it is active in chemical, wood, paper, textile, rubber, plastics and graphic arts industries.

Teaching activities

The Institute of Polymer Materials has a widely oriented programme leading to the development of basic scientific fields in polymer chemistry, production and processing technology of plastics and rubber, fibres and textile technology, wood, pulps and paper technology and graphic arts and printing technology.

Institute offers study in two bachelor courses:

- Technology of Polymer Materials
- Plastics in Engineering and Technology of Plastics Processing

two master courses:

- Natural and Synthetic Polymers
- Conservation Science and Technology

and two PhD courses:

- Technology of Polymer Materials
- Macromolecular Chemistry

Research profile

- Preservation, stabilization and conservation of traditional carriers of information (books and archival documents) and graphical objects of cultural heritage,
- Surface treatment and modification of reinforcing materials, paper, textile materials and plastic films,
- Plasma treatment and applied plasma technology,
- Polymer blends and composites based on biopolymers and biodegradable materials,
- Polymer nanocomposites and composite materials based on rubber with magnetic fillers,
- Modification of fibres for multifunctional textiles,
- Optical properties and spectroscopy of structures of graphical images,
- Renewable resources – biomaterials, biofuels and energy,
- Wood, pulp and paper science and technology,
- Recycling of polymer waste.

Department of Chemical Technology of Wood, Pulp and Paper

Head of Department Ing. Katarína Vizárová, PhD.



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Projects

KEGA

| | |
|---------------------|---|
| Project Code: | 3/7222/09 |
| Title (sl.): | Multimediálna učebnica "Lignocelulózové materiály, časť 1 - Výroba a spracovanie buničín" |
| Title (eng.): | Multimedia book „Lignocellulosics“, part 1. Processing and use of pulp. |
| Project duration: | 01. 01. 2009 - 31. 12. 2011 |
| Responsible person: | doc. Ing. Milan Vrška, PhD. |

VEGA

| | |
|---------------------|---|
| Project Code: | 1/0770/08 |
| Title (sl.): | Štúdium morfologických, chemických a fyzikálno-mechanických zmien lignocelulózových materiálov pri recyklácii |
| Title (eng.) | The study of morphology, chemical and physico-mechanical changes of lignocelulosics during recycling. |
| Project duration: | 01. 01. 2008 - 30. 12. 2010 |
| Responsible person: | doc. Ing. Milan Vrška, PhD. |

VEGA

| | |
|---------------------|--|
| Project Code: | 1/0660/09 |
| Title (sl.): | MATERIÁLY – fyzikálnochemické metódy štúdia ich stability a degradácie |
| Title (eng.) | MATERIALS – physicochemical methods for the study of their stability and degradation |
| Project duration: | 01. 01. 2009 - 31. 12. 2011 |
| Responsible person: | Ing. Igor Šurina, PhD. |

FP7 – EU project

| | |
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| Project Code: | DURAWOOD – Grant Agreement no.: 232296 |
| Title (sl.): | Vývoj cenovo efektívneho systému trvanlivej úpravy povrchov dreva s nízkym obsahom fungicídov za použitia plazmového výboja |
| Title (eng.) | Development of a cost-effective, durable coating system with low fungicide content for wood surfaces using Plasma Discharge |
| Project duration: | 01. 12. 2009 - 30. 11. 2011 |
| Responsible person: | Ing. Radovan Tiňo, PhD. |

Education project

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| Project Code: | ZOD 001/10 MONDI Ružomberok, a.s. |
| Title (sl.): | Odborné vzdelávanie: „ Technológia výroby papiera – základný kurz“ |
| Title (eng.) | Professional education: “ Papermaking technology – basic course” |
| Project duration: | 01. 01. 2010 - 28. 02. 2010 |
| Responsible person: | Ing. Štefan Šutý, PhD. |

Education project

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| Project Code: | ZOD 101/07 SHP Harmanec, a.s. |
| Title (sl.): | Odborné vzdelávanie: „Technológiu výroby papiera – pokročilý kurz“ |
| Title (eng.) | Professional education: „ Papermaking technology – advance course“ |
| Project duration: | 01.11.2007 - 28.03.2010 |
| Responsible person: | Ing. Štefan Šutý, PhD. |

List of bachelor (BT), diploma (DT) and dissertation (DissT) theses

| Type | Final thesis | Supervisor |
|------|---|------------------------------|
| BT | Bc. Michal Híreš Indoor air quality | Ing. Radovan Tiňo, PhD. |
| BT | Bc. Katarína Komarová Drugs from plant resources | Ing. Soňa Kirschnerová, PhD. |
| BT | Bc. Jakub Lazorík Value of biopolymers in the nature and their use | Ing. Katarina Vizarová, CSc. |

| | | |
|------|--|------------------------------------|
| BT | Bc. Ľuboš Levák Digitization of cultural heritage objects | Ing. Radovan Tiňo, PhD. |
| BT | Bc. Gergely Mészáros Influence of these Inorganic Salts on Thermal Decomposition of Lignocellulosics | Ing. Igor Šurina, CSc. |
| BT | Bc. Štefan Parobok Simulation of Pulp and Paper Processing | doc. Ing. Milan Vrška, PhD. |
| BT | Bc. Jana Provažníková Digitization of Historical Books and Documents | Ing. Radovan Tiňo, PhD. |
| BT | Bc. Ján Szúnyogh Brightening of waste paper | doc. Ing. Milan Vrška, PhD. |
| BT | Bc. Tomáš Turček Qualitative comparison of hand made and machine-produced paper | Ing. Štefan Šutý, CSc. |
| DT | Ing. Anna Briškárová Efficiency Verification of Modification Scale Containing Antioxidant for Stabilizing Real Documents | Ing. Katarina Vizarová, CSc. |
| DT | Ing. Barbora Gmitterová Surface Treatment of Norway Spruce and European Larch by Diffuse Coplanar Surface Barrier Discharge Plasma | Ing. Michal Jablonský, PhD. |
| DT | Ing. Aleš Ház Thermal degradation of plant materials | Ing. Igor Šurina, CSc. |
| DT | Ing. Michal Hnát Surfacing wood oak (<i>Quercus petraea</i>) and ash (<i>Fraxinus Excelsior</i>) the effect of plasma DCSBD. | Ing. Radovan Tiňo, PhD. |
| DT | Ing. Zuzana Oravcová Characterization and determination of energy parameters of renewable plant materials | Ing. Igor Šurina, CSc. |
| DisT | Ing. Eva Gemzická, PhD. The Effect of pH and Dilution Factor on Distribution of Sodium and Non-process Elements in Washing Process of Kraft Pulp Production | prof. Ing. Svetozár Katuščák, PhD. |
| DisT | Ing. Attila Szitás, PhD. Modeling of heat transfer and recognition of qualitative classes in processing of lignocellulosic materials | prof. Ing. Svetozár Katuščák, PhD. |

Selected publications

Journals

Current Contents Publications

- ADC1 **Gemzická, Eva** [50%] - **Šíma, Jozef** [25%] - **Vrška, Milan** [20%] - **Holeš, Martin** [5%]: Effect of pH and washing on calcium and magnesium distribution between pulp and filtrate.
In: Chemical Papers. - ISSN 0366-6352. - Vol. 64, iss. 6 (2010), s. 741-748

Other Publications

Published Conference Contributions

- AFA1 Hudec, Ivan [55%] - Feranc, Jozef [30%] - **Šurina, Igor** [10%] - Haydary, Juma [5%]: Piroliza odpadów gumowych. - , 2009.
In: Elastomers 2009 - Modern Materials and Technologies, Warsaw, 18.-20.11.2009. - : Institute

- for Engineering of Polymer Materials, Warsaw, 2009. - S. 16-17
- AFB1 Peller, András [25%] - **Vizárová, Katarína** [17%] - Reháková, Milena [17%] - **Kirschnerová, Soňa** [16%] - Šimon, Peter [25%]: Lifetime of fillings studied by kinetic analysis of reaction with induction period. - , 2010.
In: Recent Advances on the Use of Chemiluminiscence for Conservation Science, International workshop, Smolenice, 12.-15.10.2010. - : UP SAV, 2010. - ISBN 978-80-968433-8-1. - S. 48-49
- AFD1 **Botková, Martina** [70%] - **Nováková, Erika** [10%] - **Šutý, Štefan** [10%] - **Letko, Michal** [5%] - **Vrška, Milan** [5%]: Bioenergy and the life cycle of lignocellulosic materials.
In: Power Engineering 2010. International Scientific Event. - Bratislava : STU v Bratislave. - Power Engineering 2010. Renewable Energy Sources : 1st. International Scientific Conference OZE. Tatranské Matliare, SR, 18.-20. 5. 2010. - Bratislava : STU v Bratislave, 2010. - ISBN 978-80-89402-24-3, CD-Rom[7]
- AFD2 **Botková, Martina** [50%] - **Šutý, Štefan** [50%]: Životný cyklus buničinových vláken : VIII. International Symposium.
In: VIII. International Symposium "Selected Processes at the Wood Processing", Štúrovo 2009. - : TU vo Zvolene, 2009. - ISBN 978-80-228-2006-6. - S. 53-53
- AFD3 **Kosinková, Jana** [40%] - **Šmatko, Lukáš** [10%] - **Mikulášik, Radoslav** [5%] - **Orságová, Anna** [5%] - **Šurina, Igor** [40%]: Využitie ihličia a kôry ihličnatých drevín na získavanie zlúčenín s pridanou hodnotou a bioenergie.
In: Power Engineering 2010. International Scientific Event. - Bratislava : STU v Bratislave. - Power Engineering 2010. Renewable Energy Sources : 1st. International Scientific Conference OZE. Tatranské Matliare, SR, 18.-20. 5. 2010. - Bratislava : STU v Bratislave, 2010. - ISBN 978-80-89402-24-3, CD-Rom[4]
- AFD4 **Letko, Michal** [60%] - **Nováková, Erika** [25%] - **Kučerková, Lucia** [5%] - **Vrška, Milan** [10%]: Improving properties of secondary fibers by way of sulphur-free and chlorine-free chemical treatmenty.
In: Power Engineering 2010. International Scientific Event. - Bratislava : STU v Bratislave. - Power Engineering 2010. Renewable Energy Sources : 1st. International Scientific Conference OZE. Tatranské Matliare, SR, 18.-20. 5. 2010. - Bratislava : STU v Bratislave, 2010. - ISBN 978-80-89402-24-3, CD-Rom[11]
- AFD5 **Mikulášik, Radoslav** [50%] - **Ház, Aleš** [5%] - **Mészáros, Gergely** [5%] - **Šurina, Igor** [40%]: Effect of inorganic salts on thermal behavior of cellulose.
In: Power Engineering 2010. International Scientific Event. - Bratislava : STU v Bratislave. - Power Engineering 2010. Renewable Energy Sources : 1st. International Scientific Conference OZE. Tatranské Matliare, SR, 18.-20. 5. 2010. - Bratislava : STU v Bratislave, 2010. - ISBN 978-80-89402-24-3, CD-Rom[6]
- AFD6 **Mikulášik, Radoslav** [50%] - **Ház, Aleš** [5%] - **Orságová, Anna** [5%] - **Šurina, Igor** [40%]: Liquefaction of lignocellulosis wastes.
In: Power Engineering 2010. International Scientific Event. - Bratislava : STU v Bratislave. - Power Engineering 2010. Renewable Energy Sources : 1st. International Scientific Conference OZE. Tatranské Matliare, SR, 18.-20. 5. 2010. - Bratislava : STU v Bratislave, 2010. - ISBN 978-80-89402-24-3, CD-Rom[8]
- AFD7 **Mikulášik, Radoslav** [50%] - **Ház, Aleš** [5%] - **Orságová, Anna** [5%] - **Šurina, Igor** [40%]: Termochemické spracovanie lignocelulózového odpadu. - , 2010.
In: TOP 2010. Technika ochrany prostredia : Zborník prednášok. Častá-Papiernička, 15.-17. 6. 2010. - Bratislava : STU v Bratislave, 2010. - ISBN 978-80-970438-0-3. - S. 559-564
- AFD8 **Nováková, Erika** [60%] - **Letko, Michal** [25%] - **Vrška, Milan** [10%] - **Botková, Martina** [5%]: Current Trends anf Factors of paper Recycling in Europe and in Slovakia.
In: Power Engineering 2010. International Scientific Event. - Bratislava : STU v Bratislave. - Power Engineering 2010. Renewable Energy Sources : 1st. International Scientific Conference OZE. Tatranské Matliare, SR, 18.-20. 5. 2010. - Bratislava : STU v Bratislave, 2010. - ISBN 978-80-89402-24-3, CD-Rom[9]
- AFD9 **Orságová, Anna** [45%] - **Oravcová, Zuzana** [5%] - **Mikulášik, Radoslav** [5%] - **Šurina, Igor** [40%] - Čeppanová, Mariana [5%]: Charakterizácia energetických parametrov biomasy.
In: Power Engineering 2010. International Scientific Event. - Bratislava : STU v Bratislave. - Power Engineering 2010. Renewable Energy Sources : 1st. International Scientific Conference OZE. Tatranské Matliare, SR, 18.-20. 5. 2010. - Bratislava : STU v Bratislave, 2010. - ISBN 978-

- 80-89402-24-3, CD-Rom[9]
- AFD10 **Orságová, Anna** [50%] - **Mikulášik, Radoslav** [5%] - **Šurina, Igor** [40%] - Čeppanová, Mariana [5%]: Disponibilné a udržateľné zdroje energie Slovenska na báze biomasy. In: Power Engineering 2010. International Scientific Event. - Bratislava : STU v Bratislave. - Power Engineering 2010. Renewable Energy Sources : 1st. International Scientific Conference OZE. Tatranské Matliare, SR, 18.-20. 5. 2010. - Bratislava : STU v Bratislave, 2010. - ISBN 978-80-89402-24-3, CD-Rom[12]
- AFD11 **Orságová, Anna** [50%] - **Mikulášik, Radoslav** [5%] - **Šurina, Igor** [45%]: Energetická budúcnosť Slovenska - biomasa a jej potenciál. - , 2010. In: TOP 2010. Technika ochrany prostredia : Zborník prednášok. Častá-Papiernička, 15.-17. 6. 2010. - Bratislava : STU v Bratislave, 2010. - ISBN 978-80-970438-0-3. - S. 311-315
- AFD12 **Šmatko, Lukáš** [55%] - **Tiňo, Radovan** [5%] - **Jablonský, Michal** [35%] - **Šurina, Igor** [5%]: Fyzikálno-chemická úprava povrchov lignocelulózových materiálov účinkom nízkoteplotnej atmosférickej plazmy. In: Power Engineering 2010. International Scientific Event. - Bratislava : STU v Bratislave. - Power Engineering 2010. Renewable Energy Sources : 1st. International Scientific Conference OZE. Tatranské Matliare, SR, 18.-20. 5. 2010. - Bratislava : STU v Bratislave, 2010. - ISBN 978-80-89402-24-3, CD-Rom[5]
- AFD13 **Šutý, Štefan** [34%] - Sklenářová, Monika [33%] - **Vrška, Milan** [33%]: Degradation Reactions of Cellulose in Pulp Fibres During Recyclation - Influence of Process Water and Drying : VIII. International Symposium. In: VIII. International Symposium "Selected Processes at the Wood Processing", Štúrovo 2009. - : TU vo Zvolene, 2009. - ISBN 978-80-228-2006-6. - S. 50-50
- AFD14 **Šutý, Štefan** [50%] - **Vrška, Milan** [50%]: LCF Biorafinérie - budúcnosť celulózo-papierenského priemyslu. In: Power Engineering 2010. International Scientific Event. - Bratislava : STU v Bratislave. - Power Engineering 2010. Renewable Energy Sources : 1st. International Scientific Conference OZE. Tatranské Matliare, SR, 18.-20. 5. 2010. - Bratislava : STU v Bratislave, 2010. - ISBN 978-80-89402-24-3, CD-Rom[5]
- AFD15 **Šutý, Štefan** [25%] - **Botková, Martina** [25%] - **Kučerková, Lucia** [25%] - **Vrška, Milan** [25%]: Potenciál Slovenska pre LCF biorafinérie. - , 2010. In: TOP 2010. Technika ochrany prostredia : Zborník prednášok. Častá-Papiernička, 15.-17. 6. 2010. - Bratislava : STU v Bratislave, 2010. - ISBN 978-80-970438-0-3. - S. 405-410
- AFG1 Hudec, Ivan [50%] - Jelemenský, Ľudovít [20%] - Bakoš, Dušan [20%] - **Šurina, Igor** [10%]: National Centre for research and Application of Renewable Resources of Energie. - , 2009. In: Recykling i odzysk materiałów polimerowych : Materiały - Technologie - Utylizacja. - Szczecin : Wydawnictwo Uczelniane Zachodniopomorskiego Uniwersytetu Technologicznego , 2009. - ISBN 978-83-7663-026-7. - S. 193
- AFG2 Mocinecová, Dušana [16%] - Kolláriková, Gabriela [16%] - Lacík, Igor [16%] - Chorvát, Dušan [16%] - **Šutý, Štefan** [20%] - Dvoranová, Dana [16%]: Physico - chemical surface properties of polymeric microcapsules for pancreat islets encapsulation. In: Polymery 2010, VI. česko - slovenská konference, Libice, 4.- 7. 10. 2010. - : Ústav makromolek. chemie ČSAV, 2010. - ISBN 978-80-85009-64-4. - S. 39-40
- AFH1 Mocinecová, Dušana [14%] - Lacík, Igor [14%] - Kolláriková, Gabriela [14%] - Jochec - Mošková, Daniela [14%] - Dvoranová, Dana [16%] - **Šutý, Štefan** [14%] - Chorvát, Dušan [14%]: Physical and chemical analysis of surface properties of polymeric microcapsules. In: BYPOS, 3rd Bratislava Young Polymer Scientists Workshop, 7.-10.6. 2010, Trenčianske Teplice. - : Ústav polymérov SAV v Bratislave, 2010. - ISBN 978-80-968433-7-4. - S. 27-28

Department of Fibres and Textile Chemistry

Head of Department **Assoc. prof. Anna Ujhelyiová, PhD.**



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Projects

VEGA

Project Code: 1/0406/08
Title (sl.): Štrukturalizácia a funkcionálizácia povrchov vláknitých materiálov.
Title (eng.): Structuralisation and functionalization of surface of fibre materials.
Project duration: 01.01.2008 - 31.12.2010
Responsible person: **doc. Ing. Anna Murárová, PhD. (2008), doc. Ing. Michal Krištofič, PhD. (2009, 2010)**

VEGA

Project Code: 1/0444/09
Title (sl.): Kompozitné vlákna na báze polypropylénu a vláknitých nanoplnív.
Title (eng.): Composite fibres based on polypropylene and fibre nanoadditives.
Project duration: 01.01.2009 - 31.12.2011
Responsible person: **prof. Ing. Anton Marcinčin, PhD.**

APVV

| | |
|---------------------|--|
| Project Code: | VMSP-P-0007-09 |
| Title (sl.): | Progresívne polypropylénové vlákna pre silikátové kompozity. |
| Title (eng.): | Progressive polypropylene fibres for silicate composites. |
| Project duration: | 14.10.2009 - 31.08.2011 |
| Responsible person: | Ing. Peter Michlík, PhD., doc. Ing. Anna Ujhelyiová, PhD. |

APVV

| | |
|---------------------|--|
| Project Code: | VMSP-P-0014-09 |
| Title (sl.): | Výskum a inovácia technologických procesov za účelom zlepšenia kvality a výroby inovovaných textilných výrobkov s vysokou pridanou hodnotou. |
| Title (eng.): | Research and innovation of technological processes for improvement of quality and preparation of innovated textile products with the high added value. |
| Project duration: | 03.09.2009 - 31.07.2011 |
| Responsible person: | Ing. Dana Čižmárová, doc. Ing. Anna Ujhelyiová, PhD. |

National project

| | |
|---------------------|---|
| Project Code: | 01910 |
| Title (sl.): | Stanovenie spektrálnej transmisie vzoriek pletenín v spektrálnej oblasti 290-400 nm. |
| Title (eng.): | Determination of spectral transmission of knitted fabrics in spectral area of 290-400 nm. |
| Project duration: | 8.2.2010 – 24.11.2010 |
| Responsible person: | doc. Ing. Anna Ujhelyiová, PhD. |

List of bachelor (BT), diploma (DT) and dissertation (DissT) theses

| Type | Final thesis | Supervisor |
|------|---|----------------------------------|
| DisT | Ing. Mária Dulíková, PhD. Synthetic fibres based on composite polymers | doc. Ing. Anna Ujhelyiová, CSc. |
| DisT | Ing. Andrej Rusnák, PhD. Influence of surface properties on the transport phenomenon | doc. Ing. Anna Ujhelyiová, CSc. |
| DisT | Ing. Jozef Ryba, PhD. Composite polyamide fibres based on poly-e-caprolactam and inorganic nanofillers | doc. Ing. Michal Krištofič, CSc. |
| DisT | Ing. Iveta Vassová, PhD. Copolyamides with inorganic nanoparticles as modifiers for fibre-forming polymers | doc. Ing. Michal Krištofič, CSc. |
| DisT | Polymer nanopigmental dispersions | prof. Ing. Anton Marcinčin, PhD. |

Selected publications**Journals****Current Contents Publications**

ADC1 **Marcinčin, Anton** [20%] - **Hricová, Marcela** [15%] - **Ujhelyiová, Anna** [10%] - Brejka, Ondrej [15%] - Michlík, Peter [15%] - **Dulíková, Mária** [10%] - **Strecká, Zuzana** [10%] - Chmela, Štefan

- [5%]: Effect of Inorganic (Nano)fillers on the UV Barrier Properties, Photo and Thermal Degradation of Polypropylene Fibres. - , 2009.
- In: Fibres and textiles in Eastern Europe. - LÓDZ : Texprogress Co. - ISSN 1230-3666. - Vol. 17, No. 6. - , 2009, s. 29-35
- ADC2 **Marcinčin, Anton** [30%] - **Hricová, Marcela** [30%] - Marcinčin, Konštantín [30%] - **Hoferíková, Alena** [10%]: Study of Rheological, Thermal and Mechanical Properties of Polypropylene/Organoclay Composites and Fibres. - , 2009.
- In: Fibres and textiles in Eastern Europe. - LÓDZ : Texprogress Co. - ISSN 1230-3666. - Vol. 17, No. 6. - , 2009, s. 22-28
- ADC3 Szabová, Renáta [40%] - Černáková, L'udmila [30%] - Wolfová, Magdaléna [20%] - **Ujhelyiová, Anna** [10%]: Plasma Activated Polypropylene Fibers with Nano TiO₂ Coating.
- In: Kautschuk Gummi Kunststoffe. - ISSN 0948-3276. - Vol. 63, Iss. 6 (2010), s. 235-239
- ADC4 Dulíková, Mária [40%] - **Strecká, Zuzana** [10%] - **Ujhelyiová, Anna** [35%] - Legéř, Jaroslav [5%] - Bugaj, Peter [10%]: - , 2010.
- In: Fibres and textiles in Eastern Europe. - LÓDZ : Texprogress Co. - ISSN 1230-3666. - Vol. 18, No. 5. - , 2010, s. 55-58
- ADC5 **Ryba, Jozef** [40%] - **Ujhelyiová, Anna** [10%] - **Krištofič, Michal** [40%] - Vassová, Iveta [10%]: Thermal properties of PA 6 and PA 6 modified with copolyamides and layered silicates. - , 2010.
- In: Journal of Thermal Analysis and Calorimetry. - ISSN: 1388-6150. – Vol. 101, Iss. 3, 2010, s. 1027-1037

Other Publications

- ADE1 **Strecká, Zuzana** [40%] - **Ujhelyiová, Anna** [40%] - **Bolhová, Eva** [5%] - Alexy, Pavol [5%] - **Borsig, Eberhard** [10%]: Polypropylene fibers modified by polyvinyl alcohol and montmorillonite. - , 2010.
- In: Journal of the Textile Institute. - MANCHESTER : TEXTILE INSTITUTE. - ISSN 0040-5000. - Vol. 101, No. 4. - , 2010, s. 315-323
- ADF1 Jambrich, Martin [40%] - Balogová, Jarmila [10%] - Benčíková, Eleonóra [10%] - Ščasníková, Katarína [10%] - Vnenčáková, Janka [10%] - Bukatová, Katarína [10%] - **Horbanová, Ľuba** [10%]: The structure and properties of integrated textiles based on polyactide, bamboo, cotton and polypropylene fibres. - , 2009.
- In: Vlákna a textil. - ISSN 1335-0617. - Roč. 16, č. 1-2. - , 2009, s. 17-28
- ADF2 **Horbanová, Ľuba** [40%] - **Ujhelyiová, Anna** [40%] - **Ryba, Jozef** [10%] - Lokaj, Ján [5%] - Michlík, Peter [5%]: Properties of composite polypropylene fibers for technical application. - , 2010
- In: Acta Chimica Slovaca. - ISSN 1337-978X. – Vol. 3, Iss. 2, 2010, s. 84-92.
- ADF3 Krištofič, Michal [60%] - Ujhelyiová, Anna [10%] - Ryba, Jozef [30%]: Mechanical properties of metallocene polypropylene fibres modified with copolyamide and compatibilizer. - , 2010.
- In: Fibres and Textiles (Vlákna a textil). . - ISSN 1335-0617. Vol. 17, Iss. 3, 2010, s. 3-9

Published Conference Contributions

- AFC1 Čižmárová, Dana [60%] - **Ujhelyiová, Anna** [10%] - Húšťavová, Mária [10%] - Dvořák, Ján [10%] - Saloky, Anton [10%]: Influence of low-temperature plasma on conditions of textile dyeing. - 5 s.
- In: TEXCO 2010, 3rd International Material Conference. - : Technická univerzita v Liberci, 2010. - ISBN 978-80-969610-7-8. - nestr.
- AFC2 **Hoferíková, Alena** [60%] - **Marinčin, Anton** [20%] - **Hricová, Marcela** [20%]: Effect compatibilisers on polypropylene layered silicate composite fibres. - 5 s.
- In: TEXCO 2010, 3rd International Material Conference. - : Technická univerzita v Liberci, 2010. - ISBN 978-80-969610-7-8. - nestr.
- AFC3 **Horbanová, Ľuba** [50%] - **Ujhelyiová, Anna** [25%] - Michlík, Peter [10%] - **Hricová, Marcela** [15%]: Preparation and properties of polypropylene concentrates modified by inorganic additive. - , 2010.
- In: 41st International Symposium on Novelties in Textiles, Ljubljana, 27-29 May 2010. - : University of Ljubljana, 2010. - ISBN 978-961-6045-80-3. - S. 224-229
- AFC4 **Hricová, Marcela** [60%] - **Marinčin, Anton** [40%]: Spinning and properties of polypropylene/carbon nanotubes composite fibres. - , 2010.
- In: 41st International Symposium on Novelties in Textiles, Ljubljana, 27-29 May 2010. - : University of Ljubljana, 2010. - ISBN 978-961-6045-80-3. - S. 230-234
- AFC5 **Hricová, Marcela** [50%] - **Marinčin, Anton** [20%] - **Ujhelyiová, Anna** [20%] - Michlík, Peter

- [10%]: The effect of additives on rheological properties of PP/SiO₂ composites. - 5 s.
In: TEXCO 2010, 3rd International Material Conference. - : Technická univerzita v Liberci, 2010.
- ISBN 978-80-969610-7-8. - nestr.
- AFC6 **Krištofič, Michal** [40%] - **Ujhelyiová, Anna** [30%] - **Ryba, Jozef** [20%] - Vassová, Iveta [10%]: Mechanical properties of PA6 and PP fibres functionalized with copolyamides + nanoclay.
In: 5th International Textile, Clothing and Design Conference, Dubrovnik, 3.-6. October 2010 : Book of Proceedings. - : University of Zagreb, 2010. - ISBN 1847-7275. - S. 114-118
- AFC7 **Krištofič, Michal** [40%] - **Ujhelyiová, Anna** [30%] - **Ryba, Jozef** [20%] - Vassová, Iveta [10%]: Structural and physiological properties of PA 6 fibres functionalized with copolyamides and nanoclays.
In: TEXSCI 2010, 7th International Conference Textile Science 2010, Liberec : Book of selected lectures. - : Technical university of Liberec, 2010. - ISBN 978-80-7372-635-5. - S. 25-32
- AFC8 **Marcinčin, Anton** [40%] - **Hricová, Marcela** [35%] - Marcinčin, Konštantín [20%] - **Hoferíková, Alena** [5%]: Effect of orientation on structure and properties of PP/CNT composites. - , 2009.
In: 11th Pacific Polymer Conference, 6-10 December 2009, Cairns, Australia : Webbook of Conference. - , 2009 (<https://leishman.conference-services.net>). - nestr.
- AFC9 **Marcinčin, Anton** [40%] - Marcinčin, Konštantín [30%] - **Hricová, Marcela** [30%]: Spinning, mechanical and thermal properties of polypropylene fibres.
In: 5th International Textile, Clothing and Design Conference, Dubrovnik, 3.-6. October 2010 : Book of Proceedings. - : University of Zagreb, 2010. - ISBN 1847-7275. - S. 136-141
- AFC10 **Marcinčin, Anton** [40%] - **Hricová, Marcela** [30%] - Marcinčin, Konštantín [20%] - **Hoferíková, Alena** [5%] - **Ujhelyiová, Anna** [5%]: Thermal and mechanical properties of constrained polypropylene fibres. - , 2009.
In: 11th Pacific Polymer Conference, 6-10 December 2009, Cairns, Australia : Webbook of Conference. - , 2009 (<https://leishman.conference-services.net>). - nestr.
- AFC11 Michlík, Peter [40%] - Krivoš, Štefan [25%] - **Ujhelyiová, Anna** [15%] - Havran, Boris [15%] - Vnenčáková, Janka [5%]: Progressive modified polypropylene fibres.
In: 5th International Textile, Clothing and Design Conference, Dubrovnik, 3.-6. October 2010 : Book of Proceedings. - : University of Zagreb, 2010. - ISBN 1847-7275. - S. 926-931
- AFC12 **Podobeková, Silvia** [60%] - **Ujhelyiová, Anna** [20%] - **Ryba, Jozef** [20%]: Modification of the polyethyleneterphthalate and polypropylene textile surfaces focused on change of the wetting ability. - 5 s.
In: TEXCO 2010, 3rd International Material Conference. - : Technická univerzita v Liberci, 2010. - ISBN 978-80-969610-7-8. - nestr.
- AFC13 **Ryba, Jozef** [40%] - **Ujhelyiová, Anna** [30%] - **Méry, Vincent** [10%] - Michlík, Peter [20%]: Thermo-mechanical properties of blended fibres from metallocene polyethylene and Ziegler-Natta polypropylene. - , 2010.
In: 41st International Symposium on Novelties in Textiles, Ljubljana, 27-29 May 2010. - : University of Ljubljana, 2010. - ISBN 978-961-6045-80-3. - S. 244-247
- AFC14 **Ujhelyiová, Anna** [60%] - **Vencelová, Petronela** [20%] - **Podobeková, Silvia** [20%]: Improvement of dyeability of cotton textile materials after functionalization of their surface. - 5 s.
In: Proceedings of TEXSCI 2010, 7th International Conference Textile Science 2010, Liberec. - : Technical university of Liberec, 2010. - ISBN 978-80-7372-638-6. - nestr.
- AFC15 **Ujhelyiová, Anna** [70%] - **Horbanová, Ľuba** [15%] - Michlík, Peter [5%] - **Ryba, Jozef** [10%]: Modified polypropylene fibres applicable in technical composites.
In: 5th International Textile, Clothing and Design Conference, Dubrovnik, 3.-6. October 2010 : Book of Proceedings. - : University of Zagreb, 2010. - ISBN 1847-7275. - S. 166-170
- AFC16 **Vencelová, Petronela** [60%] - **Ujhelyiová, Anna** [30%] - **Ryba, Jozef** [10%]: Thermal and thermomechanical behaviour of metallocene polypropylene fibres modified polyvinyl alcohol and cloisite. - , 2010.
In: 41st International Symposium on Novelties in Textiles, Ljubljana, 27-29 May 2010. - : University of Ljubljana, 2010. - ISBN 978-961-6045-80-3. - S. 235-239
- AFD1 **Hricová, Marcela** [70%] - **Marcinčin, Anton** [30%]: Polypropylene/carbon nanotubes composite fibres - spinning and properties. - 6 s.
In: 6th Central European Conference 2010, Fibre-grade polymers, chemical fibres and special textiles. - : STU v Bratislave, 2010. - nestr.
- AFD2 **Krištofič, Michal** [30%] - **Ujhelyiová, Anna** [20%] - **Marcinčin, Anton** [20%] - **Ryba, Jozef** [10%] - Vassová, Iveta [10%] - Dulíková, Mária [10%]: Application of copolyamides based on ?-caprolactam into PA 6 fibres. - 5 s.
In: 6th Central European Conference 2010, Fibre-grade polymers, chemical fibres and special textiles. - : STU v Bratislave, 2010. - nestr.
- AFD3 Michlík, Peter [50%] - Krivoš, Štefan [30%] - **Ujhelyiová, Anna** [10%] - **Horbanová, Ľuba**

- [10%]: Modified polypropylene fibres for silicate composites. - 6 s.
In: 6th Central European Conference 2010, Fibre-grade polymers, chemical fibres and special textiles. - : STU v Bratislave, 2010. - nestr.
- AFD4 **Ryba, Jozef** [10%] - **Horbanová, Lúba** [30%] - **Ujhelyiová, Anna** [40%] - Michlík, Peter [20%]: Thermomechanical and mechanical properties of modified polypropylene fibres. - 4 s.
In: 6th Central European Conference 2010, Fibre-grade polymers, chemical fibres and special textiles. - : STU v Bratislave, 2010. - nestr.
- AFD5 **Ujhelyiová, Anna** [55%] - **Dulíková, Mária** [35%] - **Ryba, Jozef** [5%] - **Krištofič, Michal** [5%]: Textílie s ochranou pred UV žiarením - módný výstrelok alebo reálna potreba?. - , 2010. - 14 s.
In: Textil v budúnosti, 19.-20.máj 2010, Žilina. - : VUTCH - CHEMTEX, 2010. - ISBN 978-80-969610-6-1. - nestr.
- AFD6 **Ujhelyiová, Anna** [40%] - Dulíková, Mária [40%] - **Ryba, Jozef** [20%]: Thermal properties of polypropylene fibres modified by nanoadditives. - 6 s.
In: 6th Central European Conference 2010, Fibre-grade polymers, chemical fibres and special textiles. - : STU v Bratislave, 2010. - nestr.
- AFD7 **Vencelová, Petronela** [60%] - **Ujhelyiová, Anna** [20%] - **Ryba, Jozef** [20%]: Thermomechanical and sorptive properties of metallocene polypropylene fibres modified polyvinyl alcohol and cloisite. - 5 s.
In: 6th Central European Conference 2010, Fibre-grade polymers, chemical fibres and special textiles. - : STU v Bratislave, 2010. - nestr.
- AFG1 **Ujhelyiová, Anna** [40%] - **Vencelová, Petronela** [35%] - **Podobeková, Silvia** [20%] - Halenárová, Zuzana [5%]: Dyeing of Metallocene Polypropylene Fibres Modified by PVA and Nanoadditive. - , 2009.
In: Strutex - Structure and mechanics of Textile Fibre. - : Technická univerzita v Liberci, 2009. - ISBN 978-80-7372-542-6. - S. 122-123
- AFG2 **Ujhelyiová, Anna** [55%] - **Ryba, Jozef** [35%] - Michlík, Peter [10%]: Thermal Behaviour of Oriented Polymer Blends on Basis of Metallocene Polypropylene.
In: Book of abstracts and basic information about the congress of EPF 09, Graz, Austria. - , 2009. - S. 252

Department of Graphic Arts Technology and Applied Photochemistry

Head of Department **Prof. Michal Čeppan, PhD.**



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Projects

COST

Project Code: COST D42/08
 Title (sl.): Chemické interakcie medzi artefaktmi kultúrneho dedičstva a vnútorným prostredím (ENVIART) - Degradácia historických dokumentov so železogalovými atramentmi v znečistenej atmosfére.
 Title (eng.): Chemical Interactions between Cultural Artefacts and Indoor Environment (ENVIART) - Deterioration of Historical Documents Containing Iron Gall Inks in Polluted Atmosphere

Project duration: 01. 01. 2008 - 31. 12. 2010
Responsible person: **prof. Ing. Michal Čeppan, CSc.**

VEGA

Project Code: 1/0815/08
Title (sl.): Povrchové úpravy papiera a plastových fólií pre tlač elektronických a informačných štruktúr štandardnými tlačovými technikami
Title (eng.): Surface Modifications of Paper and Plastic Foils for Printing of Electronic and Information Structures by Standard Printing Techniques
Responsible person: **doc. RNDr. Milan Mikula, CSc.**

VEGA

Project Code: 1/0800/08
Title (sl.): Štúdium vlastností farebných a záznamových vrstiev objektov kultúrneho dedičstva.
Title (eng.): Study of properties of color and writing layers of objects of cultural heritage
Project duration: 01. 01. 2008 - 31. 12. 2010
Responsible person: **prof. Ing. Michal Čeppan, CSc.**

List of bachelor (BT), diploma (DT) and dissertation (DissT) theses

| Type | Final thesis | Supervisor |
|------|---|-----------------------------------|
| BT | Bc. Karin Kosíková Evaluation of the Paper Expansion (Fan-out) During Printing on the HSWO Press COMPACTA 818 | doc. Ing. Ján Panák, CSc. |
| BT | Bc. Ľubomír Sklenář Surface Modifications of Foils for Printing of Conductive Structures | doc. RNDr. Milan Mikula, CSc. |
| DT | Ing. Silvia Candráková Study of model systems of ageing of historical documents | prof. Ing. Michal Čeppan, CSc. |
| DT | Ing. Pavol Gemeiner Structure quality analysis of printed electronics | Ing. Vladimír Dvonka, PhD. |
| DT | Ing. Zuzana Krajnáková Properties of Printed Conductive Structures on PET Foil and Paper | doc. RNDr. Milan Mikula, CSc. |
| DT | Ing. Štefánia Kuncová Influence of Neutralizing and Antioxidant System on Stability of Writing Means | RNDr. Bohuslava Havlínová, CSc. |
| DT | Ing. Jana Očková Technology and printing parameters' effects on the characteristics of varnished sheets of paper | doc. Ing. Ján Panák, CSc. |
| DT | Ing. Dorota Sílešová Preparation and Properties od Polymer Layers Based on Photochemically Active Polyvinylalcohol Derivates | doc. Ing. Viera Jančovičová, CSc. |
| DT | Ing. Katarína Szabóvá Study of Stability of Historical Writing Means | doc. Ing. Milena Reháková, CSc. |
| DisT | Mgr. Ing. Zuzana Prosnanová, PhD. Atmospheric barrier discharge treatment of polymeric surfaces | doc. RNDr. Milan Mikula, CSc. |

Selected publications

Journals

Current Contents Publications

- ADC1 Pinčík, Emil [20%] - Kobayashi, H. [10%] - Rusnák, Jaroslav [10%] - Kim, W.B. [10%] - Brunner, Robert [10%] - Malinovský, Ľudovít [10%] - Jergel, M. [10%] - Kučera, Michal [10%] - **Mikula, Milan** [10%]: On ultra-thin oxide/Si and very-thin oxide/Si structures prepared by wet chemical process.
In: Applied Surface Science. - ISSN 0169-4332. - Vol. 256, Iss. 19 (2010), s. 5757-5764

Other Publications

Published Conference Contributions

- AFB1 Peller, András [25%] - Vizárová, Katarína [17%] - **Reháková, Milena** [17%] - Kirschnerová, Soňa [16%] - Šimon, Peter [25%]: Lifetime of fillings studied by kinetic analysis of reaction with induction period. - , 2010.
In: Recent Advances on the Use of Chemiluminiscence for Conservation Science, International workshop, Smolenice, 12.-15.10.2010. - : UP SAV, 2010. - ISBN 978-80-968433-8-1. - S. 48-49
- AFC1 **Ciglanská, Michaela** [85%] - **Jančovičová, Viera** [15%]: Accelerated Ageing of Parchment Documents in various Atmospheres. - 6 s.
In: Chemie a společnost 2009, Studentská odborná konference, 3.12.2009, Brno : Zborník príspevkov. - : VUT v Brně, 2009. - ISBN 978-80-214-3555-1. - nestr.
- AFC2 **Dvonka, Vladimír** [75%] - **Panák, Ján** [10%] - **Čeppan, Michal** [15%]: Image analysis of offset prints.
In: Printing Future Days 2009, International Students Conference, November 2-5, 2009, Chemnitz, Germany. - : Verlag für Wissenschaft un Forschung GmbH, 2009. - ISBN 978-3-89700-108-4. - S. 249-253
- AFC3 **Dvonka, Vladimír** [65%] - **Mikula, Milan** [15%] - **Panák, Ján** [10%] - **Šandrej, Michal** [10%]: Printed structure properties on plasma treated Foil and Paper. - , 2009.
In: Printing Future Days 2009, International Students Conference, November 2-5, 2009, Chemnitz, Germany. - : Verlag für Wissenschaft un Forschung GmbH, 2009. - ISBN 978-3-89700-108-4. - S. 329-333
- AFC4 **Dvonka, Vladimír** [50%] - **Mikula, Milan** [20%] - **Panák, Ján** [15%] - **Šandrej, Michal** [15%]: Printed structure properties on plasma treated foils and paper.
In: 41st International Symposium on Novelties in Textiles, Ljubljana, 27-29 May 2010. - : University of Ljubljana, 2010. - ISBN 978-961-6045-80-3. - S. 540-544
- AFC5 **Gál, Lukáš** [50%] - **Čeppan, Michal** [50%]: Spectroscopic properties of model brown-grey inks-paper systems during ageing. - 6 s.
In: Chemie a společnost 2009, Studentská odborná konference, 3.12.2009, Brno : Zborník príspevkov. - : VUT v Brně, 2009. - ISBN 978-80-214-3555-1. - nestr.
- AFC6 Jakucewicz, Stefan [60%] - **Panák, Ján** [40%]: The influence of lamination technology on quality of laminated prints.
In: IX. Seminar in Graphic Arts : Conference proceedings. - : Univerzita Pardubice, 2009. - ISBN 978-80-7395-200-6. - S. 105-109
- AFC7 **Šandrej, Michal** [80%] - **Dvonka, Vladimír** [20%]: Inkjet printing of Fine Structures and Image Analysis. - 5 s.
In: Chemie a společnost 2009, Studentská odborná konference, 3.12.2009, Brno : Zborník príspevkov. - : VUT v Brně, 2009. - ISBN 978-80-214-3555-1. - nestr.
- AFD1 Brath, Tomáš [20%] - Búc, Dalibor [20%] - Čaplovičová, Mária [20%] - Čaplovič, Ľubomír [20%] - **Mikula, Milan** [20%]: Preparation and Properties of ZnO Nanomaterials.
In: ELITECH'10 : 12th Conference of Doctoral Students. Bratislava, Slovak Republic, 26.5.2010. - Bratislava : STU v Bratislave, 2010. - ISBN 978-80-227-3303-8. - CD-Rom
- AFD2 **Ciglanská, Michaela** [70%] - **Candráková, Sylvia** [15%] - **Čeppan, Michal** [15%]: Štúdium degradácie papiera vplyvom korózie železogaliových atramentov.
In: Polygrafia Academica 2010 : Zborník príspevkov. Seminár so zahraničnou účasťou. Bratislava 9.-10.9.2010. - Bratislava : STU v Bratislave, 2010. - ISBN 978-80-227-3340-3. -

- S. 175-180
- AFD3 **Dvonka, Vladimír** [65%] - **Panák, Ján** [20%] - **Čeppan, Michal** [15%]: Image analysis of offset lithography prints.
In: Polygrafia Academica 2010 : Zborník príspevkov. Seminár so zahraničnou účasťou.
Bratislava 9.-10.9.2010. - Bratislava : STU v Bratislave, 2010. - ISBN 978-80-227-3340-3. -
S. 162-168
- AFD4 **Gál, Lukáš** [50%] - **Čeppan, Michal** [50%]: Spektroskopické vlastnosti modelových systémov
hnedosivý atrament - papier pri starnutí.
In: Polygrafia Academica 2010 : Zborník príspevkov. Seminár so zahraničnou účasťou.
Bratislava 9.-10.9.2010. - Bratislava : STU v Bratislave, 2010. - ISBN 978-80-227-3340-3. -
S. 186-191
- AFD5 Jakucewicz, Stefan [50%] - **Panák, Ján** [50%]: Nové papiere pre digitálnu a ofsetovú tlač.
In: Polygrafia Academica 2010 : Zborník príspevkov. Seminár so zahraničnou účasťou.
Bratislava 9.-10.9.2010. - Bratislava : STU v Bratislave, 2010. - ISBN 978-80-227-3340-3. -
S. 157-161
- AFD6 **Mikula, Milan** [50%] - **Dvonka, Vladimír** [10%] - **Gemeiner, Pavol** [10%] - **Krajnáková,
Zuzana** [10%] - **Šandrej, Michal** [10%] - **Panák, Ján** [10%]: Tlač vodivých štruktúr na flexibilné
zložky.
In: Polygrafia Academica 2010 : Zborník príspevkov. Seminár so zahraničnou účasťou.
Bratislava 9.-10.9.2010. - Bratislava : STU v Bratislave, 2010. - ISBN 978-80-227-3340-3. -
S. 123-131
- AFD7 **Šandrej, Michal** [60%] - **Krajnáková, Zuzana** [10%] - **Mikula, Milan** [30%]: Tenké TiO₂ sól-gel
vrstvy opracované v plazme. - 6 s.
In: Polygrafia Academica 2010 : Zborník príspevkov. Seminár so zahraničnou účasťou.
Bratislava 9.-10.9.2010. - Bratislava : STU v Bratislave, 2010. - ISBN 978-80-227-3340-3. -
nestr.

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Projects

Norway grants

Project Code: SK 0094
Title (sl.): Centrum pre aplikovaný výskum environmentálne vhodných polymérnych materiálov
Title (eng.): Centre for applied research of environmentally friendly polymer materials
Project duration: 01. 07. 2009 - 30. 04. 2011
Responsible person: **Dr.h.c. prof. Ing. Dušan Bakoš, DrSc.**

VEGA

Project Code: 1/0662/08
Title (sl.): Vývoj nových polymérnych nanokompozitov na báze prírodných nanomateriálov
Title (eng.): Development of new polymer nanocomposites based on natural nanomaterials
Project duration: 01. 01. 2008 - 31. 12. 2010
Responsible person: **doc. Ing. Viera Khunová, PhD.**

Štrukturálne fondy

Project Code: 26220220091
Title (sl.): Aplikácia inovatívnych komponentov gumových zmesí v rámci projektu Reinžiniering produktového portfólia VIPO a.s.
Title (eng.): Application of innovative components of rubber blends
Project duration: II/2010 – II/2013
Responsible person: prof. Ing. Ivan Hudec, PhD.

List of bachelor (BT), diploma (DT) and dissertation (DissT) theses

| Type | Final thesis | Supervisor |
|------|--|---------------------------------------|
| BT | Bc. Vojtech Baďura Surface modified polymer materials with TiO ₂ | doc. Ing. Ľudmila Černáková, CSc. |
| BT | Bc. Ján Bočkaj Polymer Materials for Bridge Joint Systems | prof. Ing. Ivan Hudec, CSc. |
| BT | Bc. Peter Olexa Surface modification of textile reinforced materials for construction rubber products by plasma | prof. Ing. Ivan Hudec, CSc. |
| BT | Bc. Richard Sýkora Magnetically Active Composite Materials | prof. Ing. Ivan Hudec, CSc. |
| BT | Bc. Juraj Štepanay Study of Properties of Biodegradable Polymer Blends of PLA - Thermoplastic Starch | doc. Ing. Pavel Alexy, CSc. |
| BT | Bc. Peter Vitkovský Surface Modification of Foil Materials by Plasma | prof. Ing. Ivan Hudec, CSc. |
| DT | Ing. František Benovič Biodegradable Blends Based on Polymers from Renewable Resources | doc. Ing. Pavel Alexy, CSc. |
| DT | Ing. Monika Bothová Surface Modification of Woven Textile for Medical Application | doc. Ing. Ľudmila Černáková, CSc. |
| DT | Ing. Mária Hnátová Desintegration of beta glucan to enhance its biological activity | Dr.h.c. prof. Ing. Dušan Bakoš, DrSc. |

| | | |
|------|--|---------------------------------------|
| DT | Ing. Janka Kubačková The Special Rubber Compounds Development for Mining Industry | Ing. Henrich Krump, PhD. |
| DT | Ing. Zdenka Michalovičová Study of Rheological Properties of Biodegradable Polymers and their Blends | doc. Ing. Pavel Alexy, CSc. |
| DT | Ing. Katarína Reichová Cyclodextrine modified polypropylene textile | doc. Ing. Ľudmila Černáková, CSc. |
| DT | Ing. Dávid Šariský Elastomeric Composite Materials with Magnetic Fillers | prof. Ing. Ivan Hudec, CSc. |
| DT | Ing. Viera Šestáková Surface treatment of aramid reinforcing materials by plasma | prof. Ing. Ivan Hudec, CSc. |
| DisT | Ing. Ihssan Amir, PhD. Influence of plasma on properties of reinforcing materials and rubber compounds | prof. Ing. Ivan Hudec, CSc. |
| DisT | Ing. Jozef Feranc, PhD. Application of multicomponent fillers in rubber blends | doc. Ing. Pavel Alexy, CSc. |
| DisT | Ing. Denisa Harvanová, PhD. Collagen-hyaluronan membrane as a biomaterial applied in tissue engineering | Dr.h.c. prof. Ing. Dušan Bakoš, DrSc. |
| DisT | Ing. Per Manfred Kleinschmidt, PhD. Methods and microeconomy of biodiesel production | Dr.h.c. prof. Ing. Dušan Bakoš, DrSc. |
| DisT | Ing. Renáta Szabová, PhD. Plasma-chemical surface modification of polymer materials | doc. Ing. Ľudmila Černáková, CSc. |

Selected publications

Journals

Current Contents Publications

- ADC1 Julinová, Markéta [10%] - Kupec, Jan [50%] - **Alexy, Pavol** [15%] - Hoffmann, Jaromír [5%] - Sedlařík, Vladimír [5%] - Vojtek, Tomáš [5%] - Chromčáková, Jitka [5%] - **Bugaj, Peter** [5%]: Lignin and starch as potential inductors for biodegradation of films on poly(vinyl alcohol) and protein hydrolysate. - , 2010.
In: Polymer Degradation and Stability. - ISSN 0141-3910. - Vol. 95, Iss. 2. - , 2010, s. 225-223
- ADC2 **Szabová, Renáta** [40%] - **Černáková, Ľudmila** [30%] - **Wolfová, Magdaléna** [20%] - Ujhelyiová, Anna [10%]: Plasma Activated Polypropylene Fibers with Nano TiO₂ Coating.
In: Kautschuk Gummi Kunststoffe. - ISSN 0948-3276. - Vol. 63, Iss. 6 (2010), s. 235-239
- ADC3 Štolcová, Magdaléna [20%] - Kaszonyi, Alexander [20%] - Hronec, Milan [20%] - Liptaj, Tibor [20%] - **Kyselá, Gabriela** [20%]: Direct sulfenylation of acetone with benzothiazolesulfenamides to benzothiazolylthio-substituted alkylaminopropene:synthesis and application.
In: Chemical Papers. - ISSN 0366-6352. - Vol. 64, Iss. 1 (2010), s. 65-71

Other Publications

- ADE1 **Kruželák, Ján** [40%] - **Szabová, Renáta** [20%] - **Bellušová, Denisa** [10%] - **Kyselá, Gabriela** [10%] - **Hudec, Ivan** [20%]: Elastomeric Materials with Magnetic Fillers for Intelligent Tyres Construction. - , 2010.
In: Kautschuk Gummi Kunststoffe. - ISSN 0948-3276. - Vol. 63, Iss. 1-2. - , 2010, s. 20-24
- ADE2 Strecká, Zuzana [40%] - Ujhelyiová, Anna [40%] - Bolhová, Eva [5%] - **Alexy, Pavol** [5%] - Borsig, Eberhard [10%]: Polypropylene fibers modified by polyvinyl alcohol and montmorillonite. - , 2010.

In: Journal of the Textile Institute. - MANCHESTER : TEXTILE INSTITUTE. - ISSN 0040-5000. - Vol. 101, No. 4. - , 2010, s. 315-323

Published Conference Contributions

- AFA1 **Hudec, Ivan** [50%] - **Amir, Ihssan** [30%] - Kováčik, Dušan [20%]: Modifikácia textilných materiálov plazmou. - 9 s.
In: PLASTKO 2010 : Sborník príspěvků z konference, 13.-14.4.2010, Zlín. - Zlín : Univerzita Tomáše Bati ve Zlíně, 2010. - ISBN 978-80-7318-909-9. - nestr.
- AFA2 **Hudec, Ivan** [55%] - **Feranc, Jozef** [30%] - Šurina, Igor [10%] - Haydary, Juma [5%]: Piroliza odpadov gumowych. - , 2009.
In: Elastomers 2009 - Modern Materials and Technologies, Warsaw, 18.-20.11.2009. - : Institute for Engineering of Polymer Materials, Warsaw, 2009. - S. 16-17
- AFC1 **Bakoš, Dušan** [25%] - **Hudec, Ivan** [25%] - **Alexy, Pavol** [25%] - **Bugaj, Peter** [25%]: Centre for applied research of environmentally friendly polymer materials.
In: Zeszyty Naukowe Politechniki Poznańskiej. - ISSN 1733-1919. - No. 12. - , 2010, s. 9-12
- AFC2 **Hudec, Ivan** [60%] - **Krajňáková, Silvia** [20%] - **Amir, Ihssan** [10%] - Kováčik, Dušan [10%]: Modification of Reinforcing Materials by Plasma. - 5 s. - Abstract v zborníku abstraktov, ISBN 978-3-86829-282-4.
In: 14th International Scientific Conference on Polymeric Materials, September 15-17, 2010, Halle. - : druck - zuck GmbH, 2010. - nestr.
- AFC3 **Hudec, Ivan** [50%] - **Amir, Ihssan** [25%] - Černák, Mirko [25%]: Surface modification of polyester reinforcing materials by plasma.
In: Zeszyty Naukowe Politechniki Poznańskiej. - ISSN 1733-1919. - No. 12. - , 2010, s. 97-100
- AFC4 **Khunová, Viera** [25%] - Golovkov, Andrej [25%] - Šooš, Ľubomír [25%] - Kelnar, Ivan [25%]: Compatibilisation of wood and glass fibre composites based on post-consumer polyolefin waste.
In: Recykling i odzysk materiałów polimerowych : Materiały - Technologie - Utylizacja. - Szczecin : Wydawnictwo Uczelniane Zachodniopomorskiego Uniwersytetu Technologicznego , 2009. - ISBN 978-83-7663-026-7. - S. 57-60
- AFC5 **Khunová, Viera** [50%] - Kelnar, Ivan [25%] - Liauw, Ch. [25%]: The effect of interfacial modification on the properties of reactively processed polypropylene/clay nanocomposites. - 2 s.
In: IIMM 2010, International Conference on Interfaces and Interphases in Multicomponent Materials, UK, 1-3 september, 2010. - : University of Sheffield, 2010. - nestr.
- AFC6 **Pavlačková, Miroslava** [40%] - **Alexy, Pavol** [25%] - **Tomanová, Katarína** [15%] - **Bugaj, Peter** [10%] - **Hudec, Ivan** [5%] - **Bakoš, Dušan** [5%]: Study of thermo-mechanical degradation of biodegradable polymers using oscillation rheometry.
In: Zeszyty Naukowe Politechniki Poznańskiej. - ISSN 1733-1919. - No. 12. - , 2010, s. 283-286
- AFC7 Šimon, Peter [17%] - Lukáč, Pavol [17%] - **Alexy, Pavol** [17%] - Zhong, Wei [17%] - **Bakoš, Dušan** [16%] - Chochulová, Alžbeta [16%]: Influence of Nanofillers on the Thermooxidative Degradation of Polymer Matrices. - , 2009. - 2 s.
In: 11th Pacific Polymer Conference, 6-10 December 2009, Cairns, Australia : Webbook of Conference. - , 2009 (<https://leishman.conference-services.net>). - nestr.
- AFD1 **Alexy, Pavol** [40%] - **Bakoš, Dušan** [20%] - **Hudec, Ivan** [20%] - **Bugaj, Peter** [10%] - **Pavlačková, Miroslava** [5%] - **Tomanová, Katarína** [5%]: Výskum v oblasti aplikácie biodegradovateľných polymérov na Ústave polymérnych materiálov FCHPT STU v Bratislave.
In: TOP 2010. Technika ochrany prostredia : Zborník prednášok. Častá-Papiernička, 15.-17. 6. 2010. - Bratislava : STU v Bratislave, 2010. - ISBN 978-80-970438-0-3. - S. 1-6
- AFD2 **Bakoš, Dušan** [25%] - **Hudec, Ivan** [25%] - **Alexy, Pavol** [25%] - **Bugaj, Peter** [25%]: Biodegradovateľné polymery v materiálových aplikáciách.
In: TOP 2010. Technika ochrany prostredia : Zborník prednášok. Častá-Papiernička, 15.-17. 6. 2010. - Bratislava : STU v Bratislave, 2010. - ISBN 978-80-970438-0-3. - S. 39-44
- AFD3 Jantová, Soňa [30%] - Matejov, Patrik [10%] - Theiszová, Marica [30%] - **Bakoš, Dušan** [30%]: Biokompatibilita kompozitu bioaktívneho skla založeného na Li₂O-SiO₂-CaO-P₂O₅-CaF₂.
In: Priemyselná toxikológia 2010, 30. vedecké sympózium, 16.-18.júna 2010, Svit, SR. - :

- Slovenská spoločnosť priemyselnej chémie, 2010. - ISBN 978-80-969710-6-0. - S. 258-263
- AFD4** Jantová, Soňa [40%] - Matejov, Patrik [20%] - Čopan, Peter [20%] - **Bakoš, Dušan** [20%]: Biologická aktivita nitridu kremíka v in vitro podmienkach.
In: Priemyselná toxikológia 2010, 30. vedecké sympózium, 16.-18.júna 2010, Svit, SR. - : Slovenská spoločnosť priemyselnej chémie, 2010. - ISBN 978-80-969710-6-0. - S. 265-271
- AFD5** **Pavlačková, Miroslava** [35%] - **Alexy, Pavol** [25%] - **Tomanová, Katarína** [15%] - **Bugaj, Peter** [10%] - **Hudec, Ivan** [5%] - **Bakoš, Dušan** [5%] - **Michalovičová, Zdenka** [5%]: Vplyv zmäkčovadla na degradáciu kyseliny polymliečnej.
In: TOP 2010. Technika ochrany prostredia : Zborník prednášok. Častá-Papiernička, 15.-17. 6. 2010. - Bratislava : STU v Bratislave, 2010. - ISBN 978-80-970438-0-3. - S. 323-327
- AFD6** **Tomanová, Katarína** [40%] - **Alexy, Pavol** [25%] - **Pavlačková, Miroslava** [15%] - **Bugaj, Peter** [10%] - **Hudec, Ivan** [5%] - **Bakoš, Dušan** [5%]: Štúdium vlastností biodegradovateľných polymérnych zmesí kyselina polymliečna/plastifikovaný škrob.
In: TOP 2010. Technika ochrany prostredia : Zborník prednášok. Častá-Papiernička, 15.-17. 6. 2010. - Bratislava : STU v Bratislave, 2010. - ISBN 978-80-970438-0-3. - S. 423-427
- AFD7** **Wolfová, Magdaléna** [80%] - **Szabová, Renáta** [10%] - **Černáková, Ľudmila** [10%]: Coating of cyclodextrins on the plasma activated textile material.
In: 6th Central European Conference 2010, Fibre-grade polymers, chemical fibres and special textiles. - : STU v Bratislave, 2010. - S. 93-94
- AFG1** Horváth, Elisabeth [40%] - **Khunová, Viera** [20%] - Kristóf, Janos [20%] - Makó, Eva [20%]: Structure elucidation of organoclay-polymer composites by instrumental techniques.
In: Acta Mineralogica - Petrographica. - : University of Szeged. - ISSN 0324-6523. - Vol. 6 : special selection. - , 2010, s. 698
- AFG2** **Hudec, Ivan** [50%] - Jelemenský, Ľudovít [20%] - **Bakoš, Dušan** [20%] - Šurina, Igor [10%]: National Centre for research and Application of Renewable Resources of Energie. - , 2009.
In: Recykling i odzysk materiałów polimerowych : Materiały - Technologie - Utylizacja. - Szczecin : Wydawnictwo Uczelniane Zachodniopomorskiego Uniwersytetu Technologicznego , 2009. - ISBN 978-83-7663-026-7. - S. 193
- AFG3** **Khunová, Viera** [40%] - Horváth, Elisabeth [20%] - Kristof, János [20%] - Makó, Eva [20%]: Polymer nanocomposites based on natural nanotubes: perspectives and limits. - 1 s.
In: i-PolyMat 2010, 25 years of Rolduc Polymer Meetings : Book of Abstracts. - , 2010. - nestr.
- AFG4** **Kruželák, Ján** [70%] - **Hudec, Ivan** [20%] - Ušáková, Marianna [5%] - Dosoudil, Rastislav [5%]: The influence of Ferrite on Magnetic Charakteristics of Elastomeric Composites.
In: Magnetic Measurements '2010 : Book of Abstracts. Prague, Czech Republic, 12.-15.9.2010. - Praha : Česká technika-nakl.ČVUT, 2010. - ISBN 978-80-01-04616-6. - S. 48
- AFH1** **Bakoš, Dušan** [30%] - Matejov, Patrik [10%] - Theiszová, Marica [30%] - Jantová, Soňa [30%]: Biological properties of Bioglass Samples in Li₂O-SiO₂-CaO-P₂O₅-CaF₂ System evaluated on Fibroblast Cell Lines.
In: Interdisciplinary Toxicology. - ISSN 1337-6853. - Vol. 3, No. 3. - , 2010, A31-A32
- AFH2** Jantová, Soňa [40%] - Matejov, Patrik [20%] - Čopan, Peter [20%] - **Bakoš, Dušan** [20%]: The study of biocompatibility and cytotoxicity of silicon nitride on human fibroblast cell lines.
In: Interdisciplinary Toxicology. - ISSN 1337-6853. - Vol. 3, No. 3. - , 2010, A49
- AFH3** **Oravcová, Andrea** [55%] - Vitkovský, Peter [5%] - Šestáková, Viera [10%] - **Hudec, Ivan** [20%] - Homola, Tomáš [10%]: Improved Surface Properties of Polyolefine Film by Atmospheric Pressure Plasma : PMA 2009 Bratislava,21-23 April 2009.
In: Chemické listy. - ISSN 0009-2770. - Vol. 103 - S (2009), nestr.
- AFH4** Šimon, Peter [25%] - **Bakoš, Dušan** [25%] - **Petková, Mária** [25%] - Doboly, Tibor [25%]: Sub-micronization and nanonization of betaglucan and its application in biologically more efficient forms. - , 2010.
In: Nanoved & Nanotech & Techtransfer 2010 : 5th International Conference on Nanosciences, Nanotechnologies, Nanomaterials, Nanomedicine and Technology Transfer. Program and Abstracts. Bratislava, Slovakia, 16.-19.5.2010. - Brno : Tribun EU, 2010. - ISBN 978-80-7399-949-0. - P-026

DEPARTMENT OF PHYSICAL EDUCATION AND SPORTS

Head of Institute

Assoc. prof. Miroslav Bobík, PhD.



Contact

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Foreword

The Department of Physical Education and Sports at the Faculty of Chemical and Food Technology at the Slovak University of Technology can be divided into three basic areas: pedagogy, scientific research, and others. The management abilities of our lecturers and departments were checked by AM SR in 1988 and 1998, which also organized the university games of 1989 and 2008 wherein our teachers played key roles. The performance of an enduring positive attitude of our faculty management is because of the fact that our faculty built a PE complex (2 gymnasiums - the last one made of artificial turf cover in 2009, 1 sauna, 2 fitness centres, a table tennis room and 2 PE laboratories to diagnose physical ability and bodily performance, one Spinnigroom, 2 rooms for table tennis).

Teaching activities

Our teaching activities are in the following areas: Aerobic, Kalanethics, Spinning, Harmonic gymnastics, Healing gymnastic, Basketball, Football, Handball, Body building, Swimming, Canoeing and kayak, Volleyball, Winter sports camp /skiing/, Summer sports camp, Floorball.

Research profile

Our research concentrates on solving questions of fitness, bodily performance, physical ability and the physical education of undergraduates as well as on the history of physical education and sports. The lecturers at our department have published more than 250 scientific, specialist and methodological in both domestic and foreign publications. The members of our department have proven their specialization working as trainers and national trainers in top physical educational bodies in our country and abroad. The staff and the technical and sports facilities for scientific research enable the lecturers of our department to become involved in projects, to publish their presentations at home and abroad and to take an active part with their scientific results in the training process at a top level.

Staff

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Projects

List of bachelor (BT), diploma (DT) and dissertation (DissT) theses

| Type | Final thesis | Supervisor |
|------|--------------|------------|
|------|--------------|------------|

Selected publications

Journals

Current Contents Publications

Other Publications

- ADF1 **Koláriková, Andrea** [100%]: Účinnosť špeciálneho pohybového programu na zlepšenie stability stoja študentiek vysokej školy. - , 2010.
In: Telesná výchova a šport. - ISSN 1335-2245. - Roč. 20, č. 2 (2010), s. 25-29
- ADF2 **Ondrušová, Lucia** [100%]: Jazda v kolektíve na stacionárnych bicykloch (Indoor cycling). - , 2009.
In: Telesná výchova a šport. - ISSN 1335-2245. - Roč. 19, č. 3-4. - , 2009, s. 47-48
- AED1 Hybenová, Eva [70%] - **Bobrík, Miroslav** [20%] - Lakatoš, Boris [10%]: Vybrané ukazovatele stavu výživy v súbore vysokoškolských študentov STU.
In: Nové trendy v potravinárstve : Zborník vedeckých prác. - : STU v Bratislave, 2010. - ISBN 978-80-227-3398-4. - S. 115-120
- AED2 Laurenčík, Tomáš [50%] - **Križan, Martin** [50%]: Intenzita zaťaženia študentov na hodinách TV so zameraním na športové hry. - , 2009.
In: Tvorba kritérií na hodnotenie intenzity zápasového a tréningového zaťaženia v športových a pohybových hrách. - : FTVŠ UK, 2009. - ISBN 978-80-8113-007-6. - S. 54-61

- AED3 Mikušová, Lucia [25%] - Šturdík, Ernest [25%] - Mošovská, Silvia [25%] - **Bobrík, Miroslav** [25%]: Biochemical aspects of exercise in prevention of overweight and obesity.
In: Acta Chimica Slovaca. - : STU v Bratislave. - ISSN 1337-978X (<http://www.acs.chtf.stuba.sk/>). - Vol. 2, No. 2. - , 2009, s. 97-119

Published Conference Contributions

- AFC1 **Bobrík, Miroslav** [100%]: Vzťah vitálnej kapacity plúc (VC) k objemu úsilného výdychu (FEV) v komparácii zdravých a chorých, fajčiarov a nefajčiarov - študentov FCHPT STU v Bratislave. - , 2010.
In: Ošetrovanie - pohyb - zdravie, Trenčín 2010 : Zborník vedeckých prác. - : Fakulta zdravotníctva TU A. Dubčeka Trenčín, 2010. - ISBN 978-80-8075-450-1. - S. 328-337
- AFC2 **Koláriková, Andrea** [100%]: Vplyv pohybového programu na stabilitu stoja u študentiek s chybňom držaním tela. - , 2010.
In: Ošetrovanie - pohyb - zdravie, Trenčín 2010 : Zborník vedeckých prác. - : Fakulta zdravotníctva TU A. Dubčeka Trenčín, 2010. - ISBN 978-80-8075-450-1. - S. 354-364
- AFC3 **Križan, Martin** [34%] - **Ondrušová, Lucia** [33%] - **Koláriková, Andrea** [33%]: Monitorovanie intenzity zaťaženia študentov FCHPT STU v Bratislave na hodinách telesnej výchovy. - , 2010.
In: Ošetrovanie - pohyb - zdravie, Trenčín 2010 : Zborník vedeckých prác. - : Fakulta zdravotníctva TU A. Dubčeka Trenčín, 2010. - ISBN 978-80-8075-450-1. - S. 423-433
- AFC4 Nagyová, Lenka [34%] - **Ondrušová, Lucia** [33%] - Šerešová, Erika [33%]: Intenzita zaťaženia a subjektívne vnímanie námahy v aerobiku vo vode u študentiek vysokých škôl. - , 2010.
In: Ošetrovanie - pohyb - zdravie, Trenčín 2010 : Zborník vedeckých prác. - : Fakulta zdravotníctva TU A. Dubčeka Trenčín, 2010. - ISBN 978-80-8075-450-1. - S. 434-442
- AFD1 Báleš, Vladimír [50%] - **Bobrík, Miroslav** [50%]: Význam športu v príprave budúcej inteligencie. - , 2009.
In: Slovenský školský šport. Národná konferencia o školskom športe 2009, Štrbské pleso, 5.- 6.11.2009. - : Ministerstvo školstva Slovenskej republiky, 2009. - S. 43-48
- AFD2 **Bobrík, Miroslav** [100%]: Telesná výchova a šport v podmienkach Slovenskej technickej univerzity v Bratislave. - , 2009.
In: Slovenský školský šport. Národná konferencia o školskom športe 2009, Štrbské pleso, 5.- 6.11.2009. - : Ministerstvo školstva Slovenskej republiky, 2009. - S. 192-198

DEPARTMENT OF LANGUAGES

Head of Institute

Magdaléna Horáková, M. A.

**Contact**

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Foreword

Foreign language tuition at this department began in the school year 1951-52 when the Russian language became a compulsory subject. Since 1954, students were expected to study another foreign language other than Russian; they could have chosen English, German or French. The language department was established as an all-university body and its first head was Boris Cebotarev, Ph.D. In 1960, independent language departments were set up at each individual faculty with the aim to meet the specific language needs of their students. The head of the Chemical Faculty Language Department became Jozef Priputen, later it was Stefan Bachraty, Irina Parnahajova, Ph.D., Alzbeta Oreska, Mgr. (M.A.) and others. At present, the department is led by Magdaléna Horáková, M. A.

Teaching activities

The English or German language represents a compulsory subject for each student of this faculty. Our objectives are not to teach the general language, but the language for specific-prospective professional purposes. The long-term aim is to finally enable all faculty graduates to present the essential part of their thesis in the state exams also in a foreign language. Besides the above-mentioned compulsory courses, our Department offers courses of Russian language and English conversation according to the interests of students in the current year. These are also available to SUT PhD students and employees.

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Projects

List of bachelor (BT), diploma (DT) and dissertation (DissT) theses

| Type | Final thesis | Supervisor |
|------|--------------|------------|
|------|--------------|------------|

Selected publications

Journals

Current Contents Publications

Other Publications

Horáková, Magda: James Blunt for PhD students. *English Teaching professional*, 2010.

Published Conference Contributions