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Technical University of Košice
Slovak republic

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Departments of Faculty and their Heads

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  prof. Ing. Ján Kollár, PhD. – E-mail: Jan.Kollar@tuke.sk
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  prof. RNDr. Ján Plavka, PhD. – E-mail: Jan.Plavka@tuke.sk
- Faculty Computer Center (abbr. PC FEI)
  prof. Ing. Liberios Vokorokos, PhD. – E-mail: Liberios.Vokorokos@tuke.sk
- Electronics and Multimedia Telecommunications (abbr. KEMT)
  prof. Ing. Dušan Levický, PhD. – E-mail: Dusan.Levicky@tuke.sk
- Technologies in Electronics (abbr. KTE)
  prof. Ing. Alena Pietriková, PhD. – E-mail: Alena.Pietrikova@tuke.sk
- Physics (abbr. KF)
  doc. RNDr. Dušan Olčák, PhD. – E-mail: Dusan.Olcak@tuke.sk
- Electric Power Engineering (abbr. KEE)
  prof. Ing. Michal Kolcun, PhD. – E-mail: Michal.Kolcun@tuke.sk
- Theoretical Electrotechnics and Electrical Measurement (abbr. KTEEM)
  prof. Ing. Dobroslav Kováč, PhD. – E-mail: Dobroslav.Kovac@tuke.sk

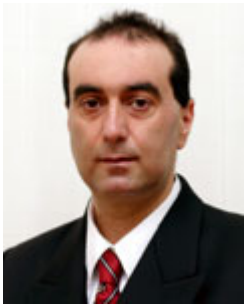
Foreword / Welcome from the Dean of the Faculty

Our goals:

We intend, we want ..

".. to be an attractive but simultaneously a pretentious faculty for students for whom the diploma awarded will open the doors on the job market,
.. to be an important research centre in field of electrical engineering and informatics both at home and abroad,

.. to be a faculty with friendly relations and excellent collegial atmosphere which enables creative activity of the teaching and research staff in hand with our students."



Ladies and Gentlemen,

It is my great pleasure to send you greetings from Slovakia as a Dean of Faculty of Electrical Engineering and Informatics, Technical University in Košice. Slovakia is a country in central Europe. Our University is located in the Eastern Slovakia and we are very proud to live in the city of Košice, which is an old historical city with many historical buildings and places. Košice is also cultural and social centre of the Eastern part of the country and the second biggest city In Slovak Republic. Technical University in Košice has overall more than 13 000 students in 9 faculties.

Allow me to introduce Faculty of Electrical Engineering and Informatics, Technical University in Košice in Slovakia. Faculty is a school with approx. 2900 students and 200 teachers and research associates. We have 178 PhD students in our courses. We offer more than 40 courses for faculty education including Bc. (BSc.), Ing. (MSc.) and PhD in 3 main branches: *Informatics*, *Telecommunications*, *Electric Power Engineering and Electrical Engineering*. More details about particular specialization can be found in this publication.

Our teachers and research associates are highly qualified persons and also very active in educational and research projects mainly in international co-operation. Faculty takes active role in 6 educational and 7 research international projects granted by agencies from EEC countries and USA and also participates on more than 50 research projects granted by Slovak agencies. All this activity brings very interesting and highly valuable results.

There is a small community of 11 foreign students studying at our faculty. We hope that this community will grow and will appreciate our skills and good conditions for study here in Košice.

The main role of this publication is to inform you about results of the Faculty for last year and also warmly invite readers for mutual co-operation and international contacts. We are open to any discussions about educational and research problems and we would highly appreciate any opportunity to meet with colleagues from other countries. I would like to express a warm invitation for our potential future students and underline that we provide a high profile teaching courses by experienced teachers and research associates.

Yours Sincerely

prof. Ing. Liberios Vokorokos, PhD.

CONTENTS

Košice and the Technical University

Košice – the metropolis of Eastern Slovakia – has more than 750 years rich history. It is an important administrative, business and industrial center, important crossing of road, railway and air traffic. The downtown has been reconstructed in last years and at present it belongs to the most beautiful and lovely cities in Slovakia. Towering over the center there is the gothic cathedral of St. Elisabeth, completed in 1508, the biggest and most important gothic monument and the only one of this kind in Eastern Europe. The town center is completed by the gothic St. Michael's Chapel and the East Slovak Theatre – imposing construction build in Neo-Baroque style. At present there are approx. 240 thousands inhabitants in Košice and it is the second largest city In Slovakia.

The Technical University of Košice was established in 1952, but in the fact, the origin and roots of two from their faculties go back to the 18th century and they are derived from the Mining Academy in Banská Štiavnica. The University is a state-supported institution. At present, the University consists of nine faculties. It has more than 15 500 Master's and Bachelor's degree students, about 1 000 PhD. students and 840 academic staff members.

Faculty of Electrical Engineering and Informatics

The Faculty of Electrical Engineering and Informatics, has been one of the leaders In Slovak technical higher education since its establishment in 1969. Faculty consists of 9 departments, one Centre of IT and a computing centre. The departments of the Faculty are located in the campus of the Technical University, which is located in 10-min. walk distance from the city center.

The Faculty is committed to providing its students with the best possible experience of education for their future career and leadership in their profession, for admission to advanced degree programs, and for lifelong learning. The faculty offers a wide variety of full-time and part-time courses, which are relevant to industry's needs. Graduates leave our departments well equipped to meet the needs of industry and development/research institutions and get their jobs with ease.

Statistics

- Present number of faculty staff members is 237 and among them 32 professors, 37 associate professors, 92 assistant professors, 21 research workers, 55 administrative staff and technicians.
- The number of MSc. students is approximately 1 000 and number of BSc. students is approximately 2300 every year.

Number of the Bc. students in academic year 2011/2012

Bc. level			
1. year	**2. year**	**3. year**	**Sum**
776	567	713	2056

Number of the Ing. students in academic year 2011/2012

MSc. (Ing.) level		
1. year	**2. year**	**Sum**
451	470	921

Overall number of the students in academic year 2011/2012

Bc. level	MSc. (Ing.) level	PhD. level	Total number
2056	921	178	3155

The student numbers in the academic year 2011/12 by study programs area (number of students vs. study program).

Branch of study	Bc.	Ing.	PhD.	Total
Advenced Materials and Technologies in Automotive Electronics	0	11	2	13
Electric Power Engineering	175	81	23	279
Informatics	685	292	49	1026
Automotive Electronics	98	0	0	98
Electronics	77	0	0	77
Infoelectronics	0	49	11	60
Telecommunications	172	0	15	187
Multimedia telecommunications	0	96	0	96
Cybernetics	76	0	0	76
Cybernetics and info control systems	0	42	25	67
Intelligent Systems	70	0	0	70
Automation of mechatronic systems	70	44	0	114
Industrial Control Engineering	63	0	0	63
Electrical Engineering	35	59	0	94
Computer modeling	58	17	0	75
Industrial Engineering	44	6	8	58
Applied Informatics	95	18	0	113
Business Informatics	333	171	8	512
Physical Engineering of modern materials	5	0	0	5
Artificial Intelligence	0	35	11	46
Mechatronics systems	0	0	4	4
Electrotechnics systems	0	0	13	13
Electrical measuring systems	0	0	3	3
Electrotechnology and materials	0	0	6	6
Total	**2056**	**921**	**178**	**3155**

Faculty Organization and Resources

DEAN'S OFFICE

The dean's office manages the Faculty life and offers services both for the students and staff members.

Management of the Faculty

Dean:	prof. Ing. Liberios Vokorokos, PhD.	
Vice-deans:	prof. Ing. Roman Cimbala, PhD.	responsible for development and public relations
	prof. Ing. Iveta Zolotová, PhD.	responsible for education in the bachelor and master study
	prof. Ing. Alena Pietriková, CSc.	responsible for research and doctoral study
	doc. Ing. Ľubomír Doboš, CSc.	responsible for foreign relations, mobility and projects
Faculty Secretary:	JUDr. Mária Homzová	responsible for financial matters and dean's office management

FACULTY ACADEMIC BODIES

The Faculty Scientific Council Faculty and the faculty Academic Senate creates academic bodies of the Faculty having many control and checking functions and responsibilities that are stated in the Faculty Ruling Guide.

Faculty Scientific Board

The Scientific Board is an advisory board to the dean. The members of the Faculty Scientific Board are grouped from the vice-deans, heads of departments, professors and representatives from co-operating industrial companies. The Scientific Council plays decisive role at the Faculty development, orientation and research.

Faculty Academic Senate

The Faculty Academic Senate is the highest-level self-governmental body of the Faculty and is authorized to control and approve activities and issues of the Faculty Presidium. Every department elects one staff member as a representative into the Faculty Staff Chamber of the Faculty Academic Senate. Students also have their representatives in the Students' Chamber.

Professors Board

Professors Board is an advisory board to the dean. The members of the Professors Board are grouped form professors and extraordinary professors of faculty. Board was created from 1st of February 2007 and prepared references for dean of faculty.

DEPARTMENTS

The faculty consists from the following departments:

	abbr. (In Slovak language)
Department of Cybernetics and Artificial Intelligence	KKUI
Department of Computers and Informatics	KPI
Department of Mathematics and Theoretical Informatics	KMTI
Department of Electronics and Multimedia Telecommunications	KEMT
Department of Technologies in Electronics	KTE
Department of Physics	KF
Department of Theoretical Electrotechnics and Electrical Measurement	KTEEM
Department of Electrical Engineering and, Mechatronics	KEM
Department of Electric Power Engineering	KEE

CENTRES OF EXCELLENCE

The faculty has two Centres of Excellence:

1. **Center of Information and Communication Technologies for Knowledge Systems.**
   Head of the centre: prof. Ing. Dušan Kocur, PhD.
   Email: dusan.kocur@tuke.sk
   WEB: http://www.ce-ikt.fei.tuke.sk/
   The Center consists of:
   - Laboratory of Intelligent Interfaces of Communication and Information Systems
   - Labotratory of Knowledge Technologies
   - Laboratory of Progressive Communication Technologies

2. **Centre of Excellence of the Integrated Research and Exploitation of the Progressive Materials and Technologies in the Area of Automotive Electronics.**
   Head of the centre: prof. Ing. Alena Pietriková, PhD.
   Email: alena.pietrikova@tuke.sk
   WEB: http://ce3.fei.tuke.sk/
   The Center consists of:
   - Laboratory of Sensor and Communication Networks of Safe Automobile of the Future
   - Laboratory of EMC Electronic Devices and Biological Systems
   - Laboratory of Modeling and Measurement for Automotive Electronics
   - Laboratory of Automotive Electrotechnics
   - Technological Laboratory for Research of Progressive Materials for Automotive Electronics
   - Laboratory for Modification and Testing of Properties of Progressive Materials

FACULTY COMPUTER CENTRE

Address: Park Komenského 2, 042 00 Košice, Slovak Republic
Tel: ++421-55-602 4007
Fax: ++421-55-602 2249
Web: http://www.tuke.sk/fei-PC
E-mail: Liberios.Vokorokos@tuke.sk
Head of the Centre: prof. Ing. Liberios Vokorokos, PhD.

The Centre offers services in field of computer technology: it maintains and supports majority of the faculty computing facilities both in HW and SW. It also is responsible for maintenance and operation of the faculty computer network and networks information services, four PC laboratories with 50 personal computers that are working 24 hours/day and is also responsible for the faculty information system. Each student of the Faculty has a free access to the Internet.

Staff members

Total number of staff members is 14: Liberios Vokorokos, Katarína Kubišová, Peter Popovec, Eva Boszörmenyová, Marek Andričík, Ľubomír Hodulík, Tomáš Baláž, Martin Kiss, Lucia Vaľová, Jana Trelová, Henrieta Marchevská, Mário Harčarik, Martin Tomášek, Slavomír Šimoňák.

CENTRE FOR INFORMATION TECHNOLOGIES

Address: Boženy Němcovej 3, 042 00 Košice, Slovak Republic
Tel: ++421-55-6024128
Fax: ++421-55-6024128
Web: http:/www.tuke.sk/fei-cit
E-mail: Jan.Paralic@tuke.sk
Head of the Centre: prof. Ing. Ján Paralič, PhD.

Centre for Information Technolgies (CIT) is a common research center of the Institute of Informatics, Slovak Academy of Sciences in Bratislava and Technical University in Košice, which has officially started its activity of February 1, 2005. CIT is organizationally incorporated into Faculty of Electrical Engineering and Informatics, Technical University in Košice,

The main task of CIT is to perform common research in the areas of applied computer science, information technology, cybernetics and artificial intelligence. This is the way that CIT tries to achieve the vision of Technical University of Košice to become a research university. CIT provides appropriate conditions for common research in computer science and applied informatics for academic workers and PhD-students from different faculties and departments of the Technical University in Košice as well as Institute of Informatics, Slovak Academy of Sciences.

EDUCATION AND COURSES

Courses offered

The Faculty offers three types of full-time and part-time courses:

- Bachelor's Degree courses (3years) leading to degree Bc.
- Master's Degree courses (2 years) leading to degree Ing.
- Doctoral Study courses (3 years) leading to degree PhD.

in various branches of study in electrical, electronic, automation and communication engineering and informatics.

Bachelor courses

Bachelor's Degree course lasts in daily form 3 years. The graduates get more-or-less practical skills in mastering

- Informatics
- Cybernetics
- Electrical Engineering
- Electric Power Engineering
- Electronics
- Industrial Control Engineering
- Automation of Mechatronic Systems
- Telecommunication
- Automotive Electronics
- Applied Informatics
- Intelligent systems
- Computer modeling
- Industrial Engineering
- Physical Engineering of Modern Materials
- Business Informatics

Master's Degree courses

Master's degree course lasts in daily form 2 years. The graduates are oriented towards the selected branch of specialization:

- Applied Informatics
- Informatics
- Automation of Mechatronic systems
- Multimedia Telecommunication
- Electrical Engineering
- Electric Power Engineering
- Computer modeling
- Advenced Materials and Technologies in Automotive Electronics
- Industrial Engineering
- Artificial Intelligence
- Cybernetics and Information-Control Systems
- Infoeletronics
- Business Informatics

PhD. courses

Ph.D. course lasts in daily form 3 years:

- Applied Informatics
- Electric Power Engineering
- Electrical Engineering Systems
- Electronic Measuring Systems
- Infoelectronics
- Informatics
- Business Informatics
- Cybernetics and Information-Control Systems

- Mechatronic Systems
- Telecommunications
- Artificial Intelligence
- Industrial Electrical Engineering
- Electro Technology and Materials
- Advenced Materials and Technologies in Automotive Electronics

Courses are available on full-time basis. One semester lasts 13 weeks and includes between 22 and 26 contact hours per week. The last semester is devoted to the independent work on final project done either at the faculty either in a real workplace situation. The learning activities cover traditional lectures, laboratory work, and seminars. Assessment methods vary from course to course and they consist of assignments, case studies, and examinations.

CREDIT-BASED SYSTEM

In all classes at the Faculty there is introduced a credit system enabling the student to choose the subjects according to their interests and to take the best race of learning. In the first two years there are compulsory subjects for all students giving no freedom for choice. Since the third year, except several compulsory subjects, the student can choose from the list of optional subjects. Each subject is evaluated by a number of credits (usually 4-7). After passing the exam from the subject the student received the credits that are accumulated and the student should collect their minimum number (60) to pass the current year. Registration of the subjects is done before the beginning of the current academic year. The details about the subjects and allocated numbers of credits are given in the Program of Study.

RESEARCH AND DEVELOPMENT

The research at the Faculty's departments is oriented towards the fields which are contained in both centres of excellence.

Research projects, which were co-ordinate by the Faculty staff members:

Category of projects	Number of projects
COST projects (international)	4
6th EU program	1
7th EU program	2
Slovak – Slovenian program	2
Slovak – Romanian program	1
CEEPUS	2
Leonardo da Vinci	1
Erasmus program	2
TEMPUS program	1
Subtotal	16
National projects supported by VEGA	19
National projects supported by KEGA	21
National projects supported by APVV	5+6
National projects supported by ASFEU	10+3
Total	**90**

There are national and international projects at the Faculty. The national projects are supported by:

- The Scientific Grant Agency (VEGA) at Ministry of Education of Slovak Republic (grant research),
- The Cultural and Educational Grant Agency (KEGA) at Ministry of Education of Slovak Republic
- Slovak Research and Development Agency (APVV)
- Agency of the Ministry of Education of the Slovak Republic for the Structural Funds of the EU (ASFEU)

The projects are described in detail in the chapters giving the description of the departments.

The Faculty has intensive co-operation with industry: the most of results of applied research is realized in industrial enterprises. In 2011 there were accomplished 13 projects of such category at the Faculty.

The departments of the Faculty organize scientific conferences held usually in two-year intervals.

INTERNATIONAL CO-OPERATION

International co-operation presents one of the most important activities of the Faculty. The Faculty policy is oriented:

- towards creating conditions for co-operation in science and technology with the centers in Europe and USA,
- to increase the number and quality of the international research and educational projects,
- to support the mobility of the staff members to foreign institutions,
- towards acceptance the university teachers at the faculty for a certain teaching period,
- to increase the number of international students studying at the Faculty.

Except of co-operation with the partners' faculties in framework of Technical University's contracts there are several signed contracts with the company and faculties of the following universities: University of Oradea (Romania), Politechnika Czestochowska (Poland), Technical University of Ilmenau (Germany), The University of West Bohemia in Pilsen (Czech Republic), Faculty of Electrical Engineering, Czech Technical University, Prague (Czech Republic), Budapest University of Technology and Economics (Hungary), Université Jean Monnet de Saint-Etienne (France).

In framework of international co-operation, the Faculty is currently involved in the following projects:

6-th EU Framework

- Developing Knowledge Practices - Laboratory (abbr. KP-Lab, co-ordinator: Ján Paralič, department: CIT)

7-th EU Framework

- Intelligent Information System Supporting Observation, Searching and Detection for Security of Citizens in Urban Environment (abbr. INDECT, co-ordinator: Ľubomír Doboš, department: KEMT)

- Perceptual, Contextual and Crossmodal Learning in Hearing and Vision (abbr. Learn2Hear&See, co-ordinator: Norbert Kopčo, department: KKUI)

CEEPUS program

- Active Methods in Teaching and Learning Mathematics, CII-HU-0028 (co-ordinator: Štefan Berežný, department: KM)
- International Cooperation in Computer Science, CII-HU-0019 (co-ordinator: Ladislav Samuelis, department: KPI)

Leonardo da Vinci program

- Innovation Transfer Network (abbr. IN.TRA.NET, co-ordinator: Ján Šaliga, department: KEMT)

COST projects

- Propagation Tools for Integrated Telecommunication and Earth Observation Systems – COST IC0802 (co-ordinator: Ján Turán, department: KEMT)
- Cooperative Radio Communication for Green Smart Environments – COSTIC1004 (co-ordinator: Ľubomír Doboš, department: KEMT)
- Advanced Solder Materials for High Temperature Application – COST MP0602 (abbr. HISOLD, co-ordinator: Alena Pietriková, department: KTE)
- RF/Microwave Communication Subsystems for Emerging Wireless Technologies (RFCSET) – COST IC0803 (co-ordinator: Dušan Kocur, department: KEMT)

Slovak – Romanian program

- Jav degradácie bezolovnatých spájkovacích spojov vplyvom času a vnútorných pnutí (co-ordinator: Alena Pietriková, department: KTE)

Slovak – Slovenian program

- Jazykové vzory v evolúcii doménovo-špecifických jazykov (co-ordinator: Ján Kollár, department: KPI)
- Smerom k multi-agentnému system schopného inkrementálneho učenia sa (co-ordinator: Peter Sinčák, department: KKUI)

Erasmus projects

- Enhancing Lifelong Learning for the Electrical and Information Engineering Community (contact: Ján Liguš, department: KKUI)
- Developing Open Source Systems Expertise in Europe (contact: Marek Paralič, department: KPI)

TEMPUS program

- Towards trust in quality assurance systems (co-ordinator: František Jakab, department: KPI)

DEPARTMENT OF ELECTRIC POWER ENGINEERING

http://www.tuke.sk/fei-kee
Tel.: ++421 55 602 3551, Fax: ++421 55 602 3552

Head of Department
prof. Ing. Michal Kolcun, PhD.
E-mail: Michal.Kolcun@tuke.sk

1 DEPARTMENT'S PROFILE

The Department of Electric Power Engineering at Technical University of Košice is one of the profiling departments of Faculty of Electrical Engineering and Informatics. It was founded on the 1st October 1973 as the independent science and research unit of the faculty. The most important structural changes of the department are:

- integration of the original department with the Department of Electrical Heating and Electrochemistry on the 1st September 1981,
- incorporation of the Department of High Voltage into the Department of Electric Power Engineering on the 1st October 2003.

These structural changes influenced the department activities and staff change. The Department of Electric Power Engineering currently has 3 professors, 1 guest professor, 3 associate professors, 10 assistant professors, 1 scientific worker and 17 internal PhD. students.

According to the last accreditation, the Department of Electric Power Engineering guarantees these study programmes:

- Electric Power Engineering in bachelor, master and doctoral degree courses,
- Electrical Engineering in bachelor degree course.

The department is responsible for education of fundamental subjects of the study programmes: Transmission and Distribution of Electricity, Electric Power Plants, Electric Power System Operation, Electric Installation and Substation, Diagnostics of Electrical Power Engineering Equipments, Unconventional Power Sources, Electro Heat and Lighting Engineering.

The department provides the education of electrical engineers, self-employed electrical engineers and electrical engineers for activities supervision or operation supervision in the range for electrical devices without voltage constraint including lightning conductors for objects without detonation risk.

The department develops and improves educational process also in cooperation with foreign universities using ERASMUS programmes.

The department staff has worked on several national and international grant projects, focused on:

- Control of Electric power system of Slovak Republic and electricity market in conditions of European Union,
- Utilisation of artificial intelligence elements for electric power engineering control processes,
- Electrical relays and electric power system stability,
- Solving of overhead power lines mechanics in three dimensional space,
- Illumination of spaces and lighting sources,
- Solar devices with optimal efficiency, solar system properties,
- Diagnostics of electric power equipments.
- High-quality results of science and research activities of the department staff are confirmed by the wide cooperation with the electric power companies (SEPS, VSE, VSD, Siemens, ABB, ZSE, SSE, Landis+Gyr, Schneider Electric and many others).

The Department of Electric Power Engineering at FEI TU of Košice is the only department in Slovakia with accredited study programmes in all three degree levels of university studies.

2 STAFF

Professors:	prof. Ing. Roman Cimbala, PhD. prof. Ing. Michal Kolcun, PhD. prof. Ing. Iraida Kolcunová, PhD. Dr. Ing. Peter Birkner (guest professor) (until 31.12.2011)
Associate Professors:	doc. Ing. Ľubomír Beňa, PhD. doc. Ing. Alexander Mészáros, PhD. doc. Ing. Pavel Novák, CSc. (until 01.07.2011) doc. Ing. Ladislav Varga, PhD.
Assistant Professors:	Ing. Jozef Balogh, PhD. Dr. Ing. Bystrík Dolník Ing. Jaroslav Džmura, PhD.

Ing. Daniel Hlubeň, PhD.
Ing. Marek Hvizdoš, PhD.
Ing. Stanislav Ilenin, PhD.
Ing. Juraj Kurimský, PhD.
Ing. Dušan Medveď, PhD.
Ing. Jaroslav Petráš, PhD.
Ing. Ján Tkáč, CSc.

Senior Scientists: prof. Ing. Karol Marton, DrSc. (part time)

Technical Staff: Ladislav Danč
doc. Ing. Pavel Novák, CSc. (since 01.07.2011)
Dagmar Kramolišová
Ing. Jana Varnavčinová

Ph.D. Students: Ing. Maher A. A. Nasr
Ing. Vieroslava Sklenárová
Ing. Lýdia Dedinská
Ing. Milan Kvakovský
Ing. Ľudovít Csányi
Ing. Matúš Katin
Ing. Vladimír Krištof
Ing. Stanislav Kušnír
Ing. Martin Marci
Ing. Pavol Hocko
Ing. Marián Hrinko
Ing. Martin German-Sobek
Ing. Roman Jakubčák
Ing. Jozef Király
Ing. Matúš Novák
Ing. Marek Pavlík
Ing. Ján Zbojovský

3 LABORATORIES

Three PC Laboratories
Laboratory of Computer Relays
Laboratory of Electro-thermal Technologies
Laboratory of Environmental Protection
Laboratory of Electrical Power Network
Laboratory of Electric Power Engineering Measurements
Laboratory of Unconventional Power Source
Laboratory of Lighting Engineering
Laboratory of High Voltage Engineering
Laboratory of Insulating System Diagnostics
Laboratory of Electrostatics
Laboratory of Partial Discharges
Laboratory of High Fields
Laboratory of Transient Overvoltage Protection of Computer Networks and Electronic Equipment
Laboratory of Intelligent Systems
Ultra High Voltage Testing Laboratory
Electric Power Systems Control Laboratory, Joint Laboratory of Department of Electric Power Engineering TU FEI Košice and ABB ELEKTRO, Ltd., Bratislava

4 TEACHING

4.1 Undergraduate Study (Bc.)

Subject	Semester	Lectures/exercises (Hours per week)	Name of Lecturer
Fundamentals of Electrical Engineering	1st	2/2	Balogh
Introduction to programming and networks	1st	3/2	Kušnír
Technical documentation in informatics	1st	1/2	Balogh
Programming	2nd	0/2	Petráš
Fundamentals of environmental engineering	2nd	2/2	Mészáros
Computers in Electric Power Engineering	2nd	2/1	Cimbala
Database systems - SQL Oracle	3rd	2/2	Petráš
Power transmission	3rd	2/2	Varga
Designing in electric power engineering	3rd	2/2	Ilenin
Light technology	3rd	2/2	Beňa
Fundamentals of environmental engineering	3rd	1/2	Mészáros
Faults in Electric Power System	4th	2/2	Beňa
Electric Power Plants	4th	2/2	Kolcun
Conversion of Electrical Energy	4th	2/2	Novák
Unconventional energy sources	4th	2/2	Tkáč
Bachelor Thesis I	5th	0/5	(Supervisors)
Electrical installation and substation	5th	2/3	Varga
High Voltage Engineering	5th	2/3	Kolcunová
Economy in the electric power engineering	5th	2/2	Mészáros
Operation of electric power plants	5th	2/2	Džmura
Bachelor Thesis II	6th	0/9	(Supervisors)
Electric Power System Operation	6th	2/3	Kolcun
Electrical relaying in electric power system	6th	2/3	Hvizdoš
Management and Marketing in Electric Power Engineering	6th	2/2	Cimbala
Prophylactics of power engineering equipment	6th	2/2	Kolcunová
Mesurement in electric power engineering	6th	2/2	Hlubeň

4.2 Graduate Study (Ing.)

Subject	Semester	Lectures/exercises (Hours per week)	Name of lecturer
Electrical Power Network	7th	2/2	Varga
Quality and reliability of electric power delivery	7th	2/2	Beňa, Hlubeň
Simulation in Electric Power	7th	2/3	Varga, Medveď

Subject	Semester	Lectures/exercises (Hours per week)	Name of lecturer
System			
Optimisation of Electric Power System Operation	7th	2/3	Kolcun
Electrical Heating and Electroheat Devices	7th	2/2	Novák
Electromagnetic compatibility	7th	3/1	Dolník
Automatization of Electric Power Plant Service	8th	2/2	Cimbala
Overvoltages in electrical network	8th	3/1	Dolník
Term project	8th	0/4	(Supervisors)
Transient stability of power system	8th	2/2	Džmura
Electric power systems and the environment	8th	2/2	Mészáros
Master Thesis I	9th	0/4	(Supervisors)
Diagnostic in electric power engineering	9th	2/2	Kolcunová
Software engineering environment	9th	2/2	Cimbala
Protection Systems of Electric Power System	9th	2/2	Hvizdoš
Automated electrical installation systems	9th	2/2	Džmura
New trends of the power system economy	9th	2/2	Mészáros
Master Thesis II	10th	0/18	(Supervisors)
Management of Electric Power Enterprises	10th	2/0	Cimbala

4.3 Postgraduate Study (PhD.)

Subject	Semester	Lectures/exercises (Hours per week)	Name of Lecturer
Theoretic electric power engineering	1st	0/2	Cimbala Kolcun Kolcunová Novák Varga Birkner Meszáros Beňa
Analysis of Electric Power System	2nd	0/2	Cimbala Kolcun Kolcunová Novák Varga Birkner Mészáros Beňa
Scientific Activity 1	2nd	0/2	(Supervisors)

Subject	Semester	Lectures/exercises (Hours per week)	Name of Lecturer
Subject of specialised area	3rd	0/2	Cimbala Kolcun Kolcunová Novák Varga Mészáros Beňa
Scientific Activity 2	4th	0/8	(Supervisors)
Scientific Activity 3	5th	0/2	(Supervisors)
Thesis	6th	0/9	(Supervisors)

5 RESEARCH PROJECTS

- ***Research of Influence of Degradation Factors on Electro-physical Structure of High Voltage Insulation Materials***, Scientific grant agency project (S.G.A.) No. 1/0368/09, duration: 2009 – 2011, co-ordinator: Cimbala, R.
- ***Innovation of Education of Subjects Oriented on Lighting Technique***, Cultural and Educational Grant Agency project (KEGA) No. 3/7122/09, duration: 2009 - 2011, co-ordinator: Kolcun, M.
- ***Research of the possibilities of critical states elimination in the Electrical Power System of the Slovak republic***, Scientific grant agency project (S.G.A.) No. 1/0166/10, duration: 2010 – 2011, co-ordinator: Kolcun, M.
- ***Decreasing of energy costingness of buildings by intelligent electric installation system usage***, Cultural and Educational Grant Agency project (KEGA) No. 014TUKE-4/2011, duration: 2011 - 2012, co-ordinator: Cimbala, R.
- ***Photovoltaic component parameters research for effective design of solar systems (Výskum charakteristík fotovoltaických komponentov pre efektívne projektovanie solárnych systémov)***, Agency of the Ministry of Education, Science, Research and Sport of the Slovak Republic for the Structural Funds of EU, No. 26220220080, duration: 2010 – 2013
- ***Research centre for combined systems of renewable energy source integration effectiveness (Centrum výskumu účinnosti integrácie kombinovaných systémov obnoviteľných zdrojov energií)***, Agency of the Ministry of Education, Science, Research and Sport of the Slovak Republic for the Structural Funds of EU, No. 26220220064, duration: 2010 – 2012
- ***Centre of excellence for integrated research and exploitation of progressive materials and technologies in automobile electronics (Centrum excelentnosti integrovaného výskumu a využitia progresívnych materiálov a technológií v oblasti automobilovej elektroniky)***, Agency of the Ministry of Education, Science, Research and Sport of the Slovak Republic for the Structural Funds of EU, No. 26220120055, duration: 2010 – 2013
- ***Protection of population in Slovak republic against electromagnetic field influences (Ochrana obyvateľstva SR pred účinkami elektromagnetických polí)***, Agency of the Ministry of Education, Science, Research and Sport of the Slovak Republic for the Structural Funds of EU,

No. 26220220145, duration: 2011 – 2014

- ***Development of unique low-consumption static source for electric systems (Vývoj unikátneho nízkoenergetického statického zdroja pre elektrosystémy)***, Agency of the Ministry of Education, Science, Research and Sport of the Slovak Republic for the Structural Funds of EU, No. 26220220029, duration: 2010 – 2011

6 CO-OPERATION

6.1 Co-operation in Slovakia

- Institute of Experimental Physics, Slovak Academy of Sciences, Košice
- Slovak Power Plants, Inc. (SE, a.s.), Bratislava
- Power Plant EVO, Vojany
- Power Plant ENO, Nováky
- Hydro Power Plants VET, Trenčín
- Nuclear Power Plant EBO, Jaslovské Bohunice
- Heat and Power Plant TEKO, Košice
- Slovak Electric Transmission System, Inc. (SEPS, a.s.), Bratislava
- VSE – Eastern Slovakia Power Engineering, Inc., Košice
- SSE - Central Slovakia Power Engineering, Inc., Žilina
- ABB Ltd., Bratislava
- Research Institute of Nuclear Power Plants, Inc. (VUJE, a.s.), Trnava
- Slovak Gas Industry, Division Slovtransgaz, Nitra
- U.S. Steel, Košice
- Siemens Ltd., Bratislava
- Hasma, Ltd.,
- Schneider Electric Slovakia, Ltd.,
- ZSE - Western Slovakia Power Engineering, Inc.,
- SAG ELV Slovensko, Inc.,
- Landis +Gyr, Ltd.,
- SEBA Slovakia, Ltd.

6.1.1. Visitors to the Department

- Ing. Valentin Nikolov Gyurov – Technical University of Varna, Bulgaria
- prof. Ing. Stanislav Rusek, CSc. – VŠB Technical University of Ostrava, Czech Republic
- doc. Ing. Radomír Goňo, PhD. – VŠB Technical University of Ostrava, Czech Republic
- Ing. Martin Paar, PhD. – Brno University of Technology, Czech Republic
- Ing. Jan Macháček, PhD. – Brno University of Technology, Czech Republic
- Dr. Péter Kádár – ÓBUDA University, Hungary
- Ing. Krystian Leonard Chrzan – Wroclaw University of Technology, Poland
- prof. Nikolay Djagarov – Technical University of Varna, Bulgaria
- Assoc. prof. Inga Zicmane – Riga Technical University, Latvia
- Assoc. prof. Tatjana Lomane – Riga Technical University, Latvia

6.2 International Co-operation

- Moscow Power Engineering Institute, Russia

- Sankt - Petersburg Power Education Institute of Power Engineering, State Department of Russian Federation, Russia
- Graz University of Technology, Austria
- Polytechnika Częstochowska, Poland
- Akademia Górniczo - Hutnicza, Krakow, Poland
- Technical University of Riga, Latvia
- Technical University of Tallinn, Estonia
- Hungarian Copper Promotion Centre Budapest, Hungary
- Haefely Test A.G. TETTEX Instruments Division, Dietikon Zűrich, Switzerland
- University of Oradea, Romania
- West Bohemian University, Pilsen, Czech Republic
- VŠB Technical University, Ostrava, Czech Republic
- Czech Technical University, Prague, Czech Republic
- Brno University of Technology, Czech Republic
- Óbuda University, Budapest, Hungary
- Technical University, Varna, Bulgaria
- ABB Switzerland Ltd, Switzerland

6.2.1. Visits of Staff Members to Foreign Institutions

- Kolcun, M.: Czestochowa University of Technology, Czestochowa, Poland, 10.-11.1.2011
- Kolcun, M.: PEIPK St. Petersburg, Russia, 13.-17.1.2011
- Kolcunová, I.: PEIPK St. Petersburg, Russia, 13.-17.1.2011
- Kolcun, M.: Brno University of Technology, Czech Republic, 19.-21.1.2011
- Cimbala, R.: Brno University of Technology, Czech Republic, 19.-21.1.2011
- Beňa, Ľ.: Brno University of Technology, Czech Republic, 19.-21.1.2011
- Varga, L.: Brno University of Technology, Czech Republic, 19.-21.1.2011
- Krištof, V.: Czech Technical University in Prague, Czech Republic, 1.2.-4.5.2011
- Marci, M.: Czech Technical University in Prague, Czech Republic, 1.2.-4.5.2011
- Kušnír, S.: Riga Technical University, Latvia, 1.2.-3.5.2011
- Katin, M.: VŠB TU Ostrava, Czech Republic, 1.2.-29.4.2011
- Csányi, Ľ.: Czech Technical University in Prague, Czech Republic, 1.2.-3.5.2011
- Ilenin, S.: VŠB TU Ostrava, Czech Republic, 18.-22.4.2011
- Petráš, J.: Tallinn University, Tallinn, Estonia, 30.4.-8.5.2011
- Džmura, J.: Tallinn University, Tallinn, Estonia, 30.4.-8.5.2011
- Balogh, J.: Tallinn University, Tallinn, Estonia, 30.4.-8.5.2011
- Kolcunová, I.: Tallinn University, Tallinn, Estonia, 30.4.-8.5.2011
- Medveď, D.: WBU, Pilsen, Czech Republic, 22.-29.5.2011
- Balogh, J.: WBU, Pilsen, Czech Republic, 22.-29.5.2011
- Petráš, J.: WBU, Pilsen, Czech Republic, 22.-29.5.2011
- Hocko, P.: WBU, Pilsen, Czech Republic, 22.-29.5.2011
- Hrinko, M.: WBU, Pilsen, Czech Republic, 22.-29.5.2011
- Katin, M.: WBU, Pilsen, Czech Republic, 22.-29.5.2011
- Krištof, V.: WBU, Pilsen, Czech Republic, 22.-29.5.2011
- Kušnír, S.: WBU, Pilsen, Czech Republic, 22.-29.5.2011

- Marci, M.: WBU, Pilsen, Czech Republic, 22.-29.5.2011
- Balogh, J.: VŠB TU Ostrava, Czech Republic, 17.-19.5.2011
- Dolník, B.: VŠB TU Ostrava, Czech Republic, 17.-19.5.2011
- Kolcunová, I.: VŠB TU Ostrava, Czech Republic, 17.-19.5.2011
- Kolcun, M.: VŠB TU Ostrava, Czech Republic, 17.-19.5.2011
- Kolcun, M.: VŠB TU Ostrava, Czech Republic, 31.5.-1.6.2011
- Kolcun, M.: Universitá di Pisa, Italy, 3.-10.9.2011
- Kolcunová, I.: Universitá di Pisa, Italy, 3.-10.9.2011
- Cimbala, R.: Universitá di Pisa, Italy, 3.-10.9.2011
- Tkáč, J.: Czech Electrotechnical Society, Brno, Czech Republic, 3.-8.9.2011
- Hlubeň, D.: Czech Society for Lighting, Praha, Czech Republic, 21.-23.9.2011
- Hocko, P.: Czech Technical University in Prague, Czech Republic, 25.9.-24.12.2011
- Kolcun, M.: Czestochowa University of Technology, Czestochowa, Poland, 4.-5.10.2011
- Kolcunová, I.: Czestochowa University of Technology, Czestochowa, Poland, 4.-5.10.2011

6.3 Membership in International Organizations and Societies

- Cimbala, R.: Working Group: Insulation Diagnostics, Manchester, United Kingdom
- Cimbala, R.: Working Group „Static Electricity in Process Industry", Basel, Switzerland
- Cimbala, R.: Institute of Electrical and Electronic Engineers (IEEE), Dielectric and Electrical Insulation Society, USA
- Cimbala, R.: Member of CIGRE Committee, France
- Kolcun, M.: Member of Czech and Slovak National CIGRE Committee
- Kolcun, M.: Member of Czech Committee CIRED
- Kolcun, M.: Member of Slovak WEC Committee
- Kolcun, M.: Member of Editorial Board Journal of Elektrotechnika v praxi, Czech Republic
- Kolcun, M.: Member of Editorial Board Power and Electrical Engineering, Riga, Latvia
- Kolcun, M.: Honorary Professor of Óbuda University, Hungary
- Marton, K.: Member of Electrotechnical Society, WG Electrostatics, Prague, Czech Republic
- Marton, K.: Invited professor, Fakultatea Electrotehnica si Informatica - University din Oradea, Romania
- Tkáč, J.: Member of International Solar Energy Society, Germany
- Balogh, J.: Member of Scientific Board EEA - Electrotehnica Electronica Automatica, Romania
- Cimbala, R.: Member of Scientific Board EEA - Electrotehnica Electronica Automatica, Romania
- Džmura, J.: Member of Scientific Board EEA - Electrotehnica Electronica Automatica, Romania
- Petráš, J.: Member of Scientific Board EEA - Electrotehnica Electronica Automatica, Romania

6.4 Membership in Slovak Organizations and Societies

- Cimbala, R.: Member of Technical Standardization Commission of Slovak Republic - Cables and Electroinsulation Materials, TK No. 53
- Cimbala, R.: Member of WG Electrical Machine Diagnostics, US Steel Košice
- Cimbala, R.: Member of Scientific Council, TU FEI Košice
- Cimbala, R.: Member of Editorial Board JSES – Starnutie elektroizolačných systémov, Košice
- Cimbala, R.: Member of Editorial Board EEN – Elektroenergetika, TU Košice, FEI
- Dolník, B.: Member of Editorial Board JSES – Starnutie elektroizolačných systémov, Košice
- Kolcun, M.: Member of Editorial Board Journal of EE
- Kolcun, M.: Member of Editorial board journal Acta Electrotechnica et Informatica
- Kolcun, M.: Member of Examinational Commission According to Law: No. 70/1998 Statute of Slovakia
- Kolcun, M.: Member of Scientific Council, TU FEI Košice
- Kolcun, K.: Chairman of Editorial Board JSES – Starnutie elektroizolačných systémov, Košice
- Kolcun, K.: Chairman of Editorial Board EEN – Elektroenergetika, TU Košice, FEI
- Kolcunová, I.: Association of Technical Diagnostics
- Kolcunová, I.: Slovak Centre of IEEE
- Kolcunová, I.: Member of Technical Standardization Commission of Slovak Republic - Cables and Electro-insulation Materials, TK No. 53
- Kolcunová, I.: Member of WG for Electrical Machine Diagnostics, US Steel Košice
- Kolcunová, I.: Member of Editorial Board JSES – Starnutie elektroizolačných systémov, Košice
- Kolcunová, I.: Member of Editorial Board EEN – Elektroenergetika, TU Košice, FEI
- Kurimský, J.: Member of WG for Electrical Machine Diagnostics, US Steel Košice
- Kurimský, J.: Executive Editor of EEN – Elektroenergetika, TU Košice, FEI
- Marton, K.: Editorial Board of Journal of Electrical Engineering, Bratislava
- Marton, K.: Member of Scientific Council, Faculty of Electrical Engineering, University of Žilina
- Marton, K.: Chairman of Society for Sciences and Arts, TU FEI Košice
- Marton, K.: Chairman of Commission of SKVH by MŠK SR for DrSc. (Electric Power Engineering), Bratislava
- Marton, K.: Member of Commission of SKVH by MŠK SR for PhD. (Electric Power Engineering), Bratislava
- Marton, K.: Honorary Chairman Member of Slovak Electrotechnical Society, TU FEI Košice
- Marton, K.: Member of Editorial Board JSES – Starnutie elektroizolačných systémov, Košice
- Marton, K.: Member of Editorial Board EEN – Elektroenergetika, TU Košice, FEI
- Novák, P.: Chairman of Examinational Commission According to Law: No.

70/1998 Statute of Slovakia

- Varga, L.: Member of Technical Standardization Commission of Slovak Republic – Electrical Power Engineering, TK No.43
- Balogh, J.: Member of Technical Standardization Commission of Slovak Republic – Electrical Installations and Protection against Electric Shock, TK No.84
- Varga, L.: Chairman of Senate for Granting Professional Qualification for Business Activity in Power Engineering, URSO
- Varga, L.: Member of Examination Commission of Slovak Council of Civil Engineers According to Law: No. 555/2005 Statute of Slovakia
- Balogh, J.: Member of Slovak Electrotechnical Society, TU FEI Košice
- Beňa, Ľ.: Member of Slovak Electrotechnical Society, TU FEI Košice
- Cimbala, R.: Member of Slovak Electrotechnical Society, TU FEI Košice
- Džmura, J.: Chairman of Slovak Electrotechnical Society, TU FEI Košice
- Hlubeň, D.: Member of Slovak Electrotechnical Society, TU FEI Košice
- Hvizdoš, M.: Member of Slovak Electrotechnical Society, TU FEI Košice
- Kolcun, M.: Member of Slovak Electrotechnical Society, TU FEI Košice
- Kolcunová, I.: Member of Slovak Electrotechnical Society, TU FEI Košice
- Medveď, D.: Member of Slovak Electrotechnical Society, TU FEI Košice
- Mészáros, A.: Member of Slovak Electrotechnical Society, TU FEI Košice
- Petráš, J.: Member of Slovak Electrotechnical Society, TU FEI Košice

6.5 Contracts, International Scientific Projects

- Intensive Program SOCRATES-ERASMUS: Environmental Impacts of Power Industry 2011 (Coordinator: prof. Ing. Jan Mühlbacher, CSc. Technical University, ZČU Pilsen, guarantee for department: prof. Ing. Michal Kolcun, Ph.D.)

7 THESES

Thesis type	Bachelor	Master	Doctoral
Number	49	59	1

8 OTHER ACTIVITIES

8.1 Conferences, Seminars

- International Scientific Symposium: Elektroenergetika 2011, 21.-23.9.2011, Stará Lesná - High Tatras, Slovak Republic
- Specialized Seminar: Development of Slovak electric Power Engineering in the context of European Area, 3.-4.11.2011, Šarpanec - High Tatras, Slovak Republic.

8.2 Expert References

- Kolcun, M.: Opinion of PhD Thesis by Ing. Marek Höger, ŽU Žilina Elektrotechnická fakulta, KVES, Slovak republic.
- Kolcun, M.: Opinion of PhD Thesis by Ing. Daniel Minařík, VŠB-TU Ostrava, Czech republic.
- Varga, L.: Opinion of PhD Thesis by Ing. Miroslav Hrabčik, VŠB-TU Ostrava, 2011, Czech republic

8.3 Projects for Industry Companies

- Kolcun, M.: Advertisement for Symposium Elektroenergetika 2011, VSE, a.s., 2011, Slovak Republic
- Kolcun, M.: Advertisement for Symposium Elektroenergetika 2011, U.S.Steel Košice, s.r.o., 2011, Slovak Republic
- Kolcun, M.: Advertisement for Symposium Elektroenergetika 2011, RWE Germany, 2011, Germany
- Cimbala, R.: Test of electrical strength, Perlon, Ltd., 2011, Slovak Republic
- Cimbala, R.: Tester calibrations, U.S. Steel Košice, 2011, Slovak Republic
- Cimbala, R.: Measurement device calibration, U.S.Steel Košice, 2011, Slovak Republic
- Kolcunová, I.: Partial discharge measurement, VSE, Inc., 2011, Slovak Republic
- Džmura, J.: Technical support, Methodical-pedagogical centre Bratislava, 2011, Slovak Republic

8.4 Compositions for Dissertation Examinations

- HRINKO, M.: Research of inception and development of partial discharges on the boundary of two dielectrics (Kolcunová, I.)
- KOLCUN, M.ml.: Optimal voltage regulation in distribution systems. (Beňa, Ľ.)

9 PUBLICATIONS

9.1 Books

[1] DANESHJO, N. - HLUBEŇ, D. - DANISHJOO, E. - KOPAS, M.: Diagnostics, maintenance and reliability of machines manufacturing systems/ - Germany: Dr. Enayat Danishjoo - 2011. - 136 pp. - ISBN 978-3-00-035706-0.

[2] MÉSZÁROS, A.: Methodology for evaluation the economic benefit of optimal voltage control / - 1st ed. - Košice: TU - 2011. - 125 pp. - ISBN 978-80-553-0756-5.

[3] KOLCUN, M. - BEŇA, Ľ.: Using of specialized devices for power flow control in electric power systems/ - Košice: TU - 2011. - 128 pp. - ISBN 978-80-553-0767-1.

[4] KOLCUNOVÁ, I. - KVAKOVSKÝ, M.: Discharge activity measurement in stator insulation of rotary electric devices / - 1st ed. - Košice: TU - 2011. - 128 pp. - ISBN 978-80-553-0778-7.

[5] HLUBEŇ, D. - KOLCUN, M.: Use of PST transformers for control of international power flows / - 1st ed. - Košice: TU - 2011. - 89 pp. - ISBN 978-80-553-0777-0.

[6] HLUBEŇ, D. - ILENIN, S. - RUSNÁK, J.: Collection examples from subject Transmission and distribution of electric energy – part 1 / - Košice: TU - 2011. - 81 pp. - ISBN 978-80-553-0607-0.

[7] HLUBEŇ, D. - ILENIN, S. - RUSNÁK, J.: Collection examples from subject Transmission and distribution of electric energy – part 2 / - Košice: TU - 2011. - 81 pp. - ISBN 978-80-553-0613-1.

[8] HLUBEŇ, D. - HLUBEŇOVÁ, J. - ILENIN, S.: Collection examples from subject Transmission and distribution of electric energy – part 3 / - Košice: TU - 2011. - 78 pp. - ISBN 978-80-553-0623-0.

[9] HLUBEŇ, D. - ILENIN, S.: Collection examples from subject Transmission and distribution of electric energy – part 4 / - Košice: TU - 2011. - 83 pp. - ISBN 978-80-553-0624-7.

[10] HLUBEŇ, D. - HLUBEŇOVÁ, J. - ILENIN, S. - RUSNÁK, J.: Transmission and distribution of electric energy in examples 20102011 / - 1st ed. - Košice: Ing. Daniel Hlubeň, PhD. - 2011. - 292 pp. - ISBN 978-80-907668-2-6.

[11] HLUBEŇ, D. - HLUBEŇOVÁ, J. - ILENIN, S. - RUSNÁK, J.: Transmission and distribution of electric energy - collection of examples 20102011 / - 1st ed. - Košice: Ing. Daniel Hlubeň, PhD. - 2011. - 301 pp. - ISBN 978-80-970743-1-9.

[12] HLUBEŇ, D.: Quality of electric energy – instructions 20112012/ - 1st ed. - Košice: TU - 2011. - 89 pp. - ISBN 978-80-553-0783-1.

[13] VARGA, L. - ILENIN, S.: Transmission and distribution of electric energy / - Košice: TU - 2011. - 130 pp. - ISBN 978-80-553-0785-5.

9.2 Journals

[1] HLUBEŇ, D. - KOLCUN, M.: Use of PST in transmission system of the Slovak Republic / - 2011. In: Przegląd Elektrotechniczny. Vol. 87, no. 2 (2011), p. 79-82. - ISSN 0033-2097 Internet: http://pe.org.pl/issue.php?lang=1&num=02/2011.

[2] DOLNÍK, B. - KURIMSKÝ, J.: Contribution to earth fault current compensation in middle voltage distribution networks / - 2011. In: Przeglad Elektrotechniczny. Vol. 87, no. 2 (2011), p. 220-224. - ISSN 0033-2097

[3] TKÁČ, J.: Wind power plant operation / - 2011. In: Elektrotechnický magazín ETM. Vol. 21, no. 1 (2011), p. 58-60. - ISSN 1210-5422

[4] CSÁNYI, Ľ. - CIMBALA, R.: Influence of electrode system on current response 6 kV stator coils measurement with IRC analysis / - 2011. In: EEA: Electrotehnica, Electronica, Automatica. Vol. 59, no. 1 (2011), p. 7-12. - ISSN 1582-5175

[5] VARGA, L. - HUDÁK, R. - KATIN, M. - ILENIN, S.: Dynamic effects on outer power line conductors / - 2011. In: ETM - elektrotechnický magazín. Vol. 21, no. 1 (2011), p. 15-17. - ISSN 1210-5422

[6] VARGA, L. - KATIN, M. - ILENIN, S.: Dynamic effects on outer power line conductors – Factors influencing conductor swing up – the influence of distance value / - 2011. In: Elektrotechnika v praxi: odborný elektrotechnický časopis. Vol. 21, no. 5-6 (2011), p. 42-45. - ISSN 0862-9730

[7] KURIMSKÝ, J. - DOLNÍK, B.: Recovery voltage in ZnO ceramics / - 2011. In: Przegląd Elektrotechniczny. Vol. 87, no. 6 (2011), p. 214-217. - ISSN 0033-2097

[8] CIMBALA, R. - KURIMSKÝ, J. - KOLCUNOVÁ, I.: Determination of thermal ageing influence on rotating machine insulation system using dielectric spectroscopy / - 2011. In: Przegląd Elektrotechniczny. Vol. 87, no. 8 (2011), p. 176-179. - ISSN 0033-2097

[9] BALOGH, J. - DŽMURA, J. - PETRÁŠ, J.: Inductive sensors for indirect partial discharge measurement / - 2011. In: Electrotehnica, Electronica, Automatica. Vol. 59, no. 3 (2011), p. 33-36. - ISSN 1582-5175

[10] HLUBEŇ, D. - BEŇA, Ľ.: Photovoltaic and new trends / - 2011. In: Elektroenergetika. Vol. 4, No. 1 (2011), pp. 14-16. - ISSN 1337-6756

[11] BEŇA, Ľ. - HLUBEŇ, D.: Reducing the energy consumption of lighting systems / - 2011. In: Elektroenergetika. Vol. 4, No. 1 (2011), pp. 10-13. - ISSN 1337-6756

[12] KURIMSKÝ, J.: Insulation Degradation in hv windings/ - 2011. In: Starnutie elektroizolačných systémov. Vol. 6, No. 1 (2011), pp. 5-7. - ISSN 1337-0103,Internet: http://jeen.fei.tuke.sk/jeen2/index.php/JSES/article/view/170/182.

[13] KURIMSKÝ, J.: Unipolar response of current in ZnO ceramics / - 2011. In: Starnutie elektroizolačných systémov. Vol. 6, No. 1 (2011), pp. 8-10. - ISSN 1337-0103,Internet: http://jeen.fei.tuke.sk/jeen2/index.php/JSES/article/viewFile/188/183.

[14] DOLNÍK, B.: Statistical analysis of overvoltages in low voltage networks / - 2011. In: Starnutie elektroizolačných systémov. Vol. 6, No. 1 (2011), pp. 11-13. - ISSN 1337-0103

[15] DOLNÍK, B.: Analysis of supply voltage fluctuation in low voltage networks / - 2011. In: Starnutie elektroizolačných systémov. Vol. 6, No. 1 (2011), pp. 14-16. - ISSN 1337-0103, Internet: http://jeen.fei.tuke.sk/jeen2/index.php/JSES/article/viewFile/190/185.

[16] DOLNÍK, B.: Contribution to the calculation of the theoretical pulse breakdown voltage / - 2011. In: Starnutie elektroizolačných systémov. Vol. 6, No. 1 (2011), pp. 29-30. - ISSN 1337-0103, Internet: http://jeen.fei.tuke.sk/jeen2/index.php/JSES/article/viewFile/195/189.

[17] HVIZDOŠ, M. - TKÁČ, J.: Experimental heat pump/ - 2011. In: Elektroenergetika. Vol. 4, No. 1 (2011), pp. 20-22. - ISSN 1337-6756, Internet: http://jeen.fei.tuke.sk/index.php/jeen/article/view/202/176.

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9.3 Other publications

Publication Type	Confereces		Other
	Foreign	Home	
Number	26	39	9

EXPERT'S ACTIVITY FOR PRACTICE

of Department of Electric Power Engineering

Diagnostic of High Voltage Power Devices

- diagnostic measurements of insulating systems of high voltage rotating machines by DC methods
- diagnostic measurements of insulating systems of high voltage rotating machines by partial discharge measurements and phase-resolved partial discharge analysis
- DC diagnostics of high voltage cables, bushes and cable terminators
- diagnostics of high voltage transformers
- localisation of PD sources on high voltage devices by means of high-frequency detection
- advising activities

Special Measurement in Electric Power Engineering

- measurement of electric power lines parameters (positive sequence impedance, zero sequence impedance, inductance and capacitance)
- measurement of power device grounding (appraisal of grounding system quality from the aspect of impedance, system integrity and magnitude of contact voltage and step voltage)
- measurement of basic power quality indices
- design and review of relays operation

Expertise and judge activity in electric power engineering focused on:

- Appraisal of extensive earthing systems quality on the basis of:
  - measurement of the impedance,
  - measurement of the touch voltage and step voltage,
  - measurement of the wholeness.
- Determination of overhead transmission line parameters and cable parameters, namely
  - measurement of the line impedance Z (positive sequence, negative sequence and zero sequence components),
  - measurement of the line capacitance,
  - measurement of the mutual reactance (X_{0m}).
- Measurement of the earth impedance of overhead line towers (without disconnecting earthing conductor),
- Inspection of the electrical equipments and appliances.
- Designing in electrical engineering.

DEPARTMENT OF ELECTRONICS AND MULTIMEDIA COMMUNICATIONS

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1 DEPARTMENT'S PROFILE

The Department of Electronics and Multimedia Communications was founded in 1969. The original name of department was Department of Electronics. The Department offers three types of full-time courses:

Bachelor's Degree course lasts in normal way 3 years and is leading to degree Bc. The graduates get more-or-less practical skills in mastering

- Electronics,
- Telecommunications.

Master's Degree course lasts in normal way 2 years and is leading to degree Ing. The graduates get theoretical and practical skills in specialization

- Infoelectronics,
- Multimedia telecommunications.



Doctoral Study course lasts in normal way 3 years and is leading to degree PhD. The graduates get erudition in scientific areas:

- Infoelectronics,
- Telecommunications,
- Electronics measurement systems.

The subjects in the degree courses are orientated to the linear and non-linear analogue circuits, automotive electronics and diagnostic of cars, digital electronics, microwave technology, optoelectronics, signal and systems, acoustics, digital signal processing, digital filtering, signal processors and microcontrollers, electronic measurement systems, television systems, signal recording, digital communication and digital transmission systems, optoelectronic communication systems, photonics, sensor systems, multimedia communication systems, mobile and satellite communication systems, digital image communication systems and medical electronics.

The basic research activities of Department are concentrated on digital image and speech processing, multimedia communications, digital filtering, optoelectronics and optical communication, A/D convertors modelling and testing.

2 STAFF

Professors:	Dr.h.c. prof. Ing. Anton Čižmár, CSc.	
	prof. Ing. Dušan Kocur, CSc.	
	prof. Ing. Dušan Levický, CSc.	
	prof. Ing. Stanislav Marchevský, CSc.	
	prof. Ing. Linus Michaeli, DrSc.	
	prof. Ing. Ján Mihalík, CSc.	
	Dr.h.c. prof. RNDr. Ing. JánTurán, DrSc.	
Professors emeritus:	prof. Ing. Viktor Špány, DrSc.	
Associate Professors:	doc. Ing. Ľubomír Doboš, CSc.	
	doc. Ing. Miloš Drutarovský, CSc.	
	doc. Ing. Pavol Galajda, CSc.	
	doc. Ing. Ján Gamec, CSc.	
	doc. Ing. Jozef Juhár, CSc.	
	doc. Ing. Ľuboš Ovseník, PhD.	
	doc. Ing. Ján Šaliga, CSc.	
Assistant Professors:	Ing. Gabriel Bugár, PhD.	Ing. Stanislav Ondáš, PhD.
	Ing. Mária Gamcová, PhD.	Ing. Mária Švecová, PhD.
	Ing. Iveta Gladišová, CSc.	Ing. Michal Varchola, PhD.
	Ing. Zita Klenovičová, CSc.	Ing. Jozef Zavacký, CSc.
	Ing. Ľudmila Maceková, PhD.	
Research Assistant:	Ing. Vladimír Bánoci, PhD.	Ing. Matúš Pleva, PhD.
	Ing. Daniel Hládek, PhD.	Mgr. Jana Rovňáková, PhD.
	Ing. Martin Lojka, PhD.	Ing. Ján Staš, PhD.
	Ing. Ján Papaj, PhD.	
Support staff:	Ing. Zuzana Dittelová	Viera Šumáková
	Božena Marchevská	Mgr. Lenka Talpašová
	Milan Peška	

Ph.D. students:

Internal form:
Ing. Vladimír Cipov
Ing. Denis Dupák
Ing. Patrik Gallo
Ing. Peter Goč-Matis
Ing. Marek Godla
Ing. Tomáš Harasthy
Ing. Branislav Hrušovský
Ing. Anna Kažimírová Kolesárová
Ing. Martin Sekerák
Ing. Daniel Urdzík
Ing. Matúš Tatarko
Ing. Ján Valiska
Ing. Jozef Vavrek
Ing. Peter Viszlay
Ing. Eva Vozáriková

External form:
Ing. Daniel Fábry
Ing. Ondrej Kováč
Ing. Ján Krekáň
Ing. Martin Liptaj
Ing. Jozef Lipták
Ing. Pavol Mišenčík
Ing. Marián Mižák
Ing. Martin Kmec
Ing. Rastislav Kokoška
Ing. Matúš Kozák
Ing. František Rakoci
Ing. Kamil Šindlery

3 EQUIPMENT

3.1. Teaching and Research Laboratories

- Laboratory of Multimedia Communications
- Laboratory of Digital Signal Processing and Satellite Communications
- Laboratory of Digital Image Processing and Videocommunication
- Laboratory of Optoelectronic Communications
- Laboratory of Electronic Circuits & Measurement

3.2. Special Laboratories and Equipments

- Laboratory of measurement
- Laboratory of communication technologies and advanced digital signal processing
- Laboratory of optoelectronics
- Laboratory of multimedia and network security
- Laboratory of speech technologies in telecommunications

4 TEACHING

4.1 Undergraduate Study (Bc.) – Automotive Electronics

Subject	Semester	Lectures/exercises (hours per week)	Name of Lecturer
Basics of electronics	2nd	3/2	Micheali
Circuit theory	3rd	3/2	Kocur
Digital electronics	3rd	3/3	Levický
Microelectronic circuits	4th	3/2	Michaeli
Automotive electronics	5th	2/2	Gamec
Automotive embedded systems	6th	3/2	Drutarovský
Active and passive safety systems	6th	3/2	Gamec
Mobile networks and services	6th	3/2	Doboš
Basics of electronics	2nd	3/2	Micheali
Circuit theory	3rd	3/2	Kocur

4.2 Undergraduate Study (Bc.) – Electronics

Subject	Semester	Lectures/exercises (hours per week)	Name of Lecturer
Basics of electronics	2nd	3/2	Micheali
Circuit theory	3rd	3/2	Kocur
Signals and systems	3rd	3/2	Mihalík, Zavacký
Programming environments for electronics and communications	3rd	1/2	Varchola, Šaliga
Electronic measurement systems	4th	2/2	Šaliga
Networks technology	4th	2/2	Čižmár
Microelectronic circuits	4th	3/2	Michaeli
Electroacoustics	4th	2/2	Juhár
Electromagnetic waves and antennas	4th	2/2	Ovseník
CAD in electronics	4th	2/2	Galajda
High frequency and microwave technology	5th	2/2	Gamec
Semestral projects	5th	0/6	Galajda
Microprocessors technology	5th	2/2	Drutarovský
Networks architecture	5th	3/2	Čižmár
Videocommunications	5th	2/2	Mihalík
Automotive electronics	5th	2/2	Gamec
FPGA circuits	5th	2/2	Drutarovský, Galajda
Bachelor work	6th	0/9	Galajda
Optoelectronic systems	6th	2/2	Turán
Smart measurement systems	6th	2/2	Šaliga
Mobile networks and services	6th	3/2	Doboš
Satellite technology and services	6th	3/2	Marchevský
Active and passive safety systems	6th	3/2	Gamec

4.3 Undergraduate Study (Bc.) – Telecommunications

Subject	Semester	Lectures/exercises (hours per week)	Name of Lecturer
Basics of electronics	2nd	3/2	Micheali
Circuit theory	3rd	3/2	Kocur
Signals and systems	3rd	3/2	Mihalík, Zavacký
Digital electronics	3rd	3/3	Levický
Networks technology	4th	2/2	Čižmár
Programming environments for electronics and communications	3rd	1/2	Varchola, Šaliga
Electronic measurement systems	4th	2/2	Šaliga
Electromagnetic waves and antennas	4th	2/2	Ovseník
Introduction to telecommunication	4th	3/2	Levický
Electroacoustics	4th	2/2	Juhár
Semestral projects	5th	0/6	Galajda
Switching technology	5th	3/2	Marchevský

Networks architecture	5th	3/2	Čižmár
Access networks	5th	3/2	Marchevský, Maceková
High frequency and microwave technology	5th	2/2	Gamec
Microprocessor technology	5th	2/2	Drutarovský
Videocommunications	5th	2/2	Mihalík
FPGA circuits	5th	2/2	Drutarovský, Galajda
Mobile networks and services	6th	3/2	Doboš
Bachelor work	6th	0/9	Galajda
Satellite technology and services	6th	3/2	Marchevský
Optoelectronic systems	6th	2/2	Turán
Smart measurement systems	6th	2/2	Šaliga

4.4 Graduate Study (Ing.) – Infoelectronics

Subject	Semester	Lectures/exercises (hours per week)	Name of Lecturer
Digital signal processing	1th	3/2	Mihalík
Programmable logic devices	1th	2/2	Varchola, Galajda
Optoelectronics	1th	2/2	Turán
Signal processors	1th	3/2	Drutarovský
Semestral projects	2nd	0/4	Galajda
Microwave circuits and systems	2nd	3/2	Gamec
Digital image processing and coding	2nd	3/2	Mihalík
Processing and transmission of speech and audio	2nd	3/2	Juhár
Optical communication systems	2nd	3/2	Turán
Digital filters	2nd	2/2	Kocur
Applied cryptography	2nd	3/2	Levický
Digital television	3rd	3/2	Marchevský
Photonics	3rd	3/2	Turán
Multimedia technologies	3rd	3/2	Levický
Master thesis I.	3rd	0/6	Galajda
Sensory networks	3rd	2/2	Kocur
Database systems - Oracle SQL	3rd	2/2	Juhár
Medical electronics	3rd	3/2	Michaeli
Interactive telecommunications systems and services	3rd	3/2	Juhár
Mobile communications	3rd	3/2	Doboš
Satellite communications	3rd	3/2	Marchevský
Project management	4th	0/2	Marchevský
Master thesis II.	4th	0/18	Galajda

4.5 Graduate Study (Ing.) – Multimedia Telecommunications

Subject	Semester	Lectures/exercises (hours per week)	Name of Lecturer
Digital signal processing	1th	3/2	Mihalík
Optoelectronics	1th	2/2	Turán
Communication channel modelling	1th	2/2	Kocur
Spread-spectrum communication systems	1th	3/2	Kocur
Semestral projects	2nd	0/4	Galajda
Telecommunications systems theory	2nd	3/2	Čižmár
Digital image processing and coding	2nd	3/2	Mihalík
Optical communication systems	2nd	3/2	Turán
Processing and transmission of speech and audio	2nd	3/2	Juhár
Digital filters	2nd	2/2	Kocur
Applied cryptography	2nd	3/2	Levický
Multimedia technologies	3rd	3/2	Levický
Mobile communications	3rd	3/2	Doboš
Database systems - Oracle SQL	3rd	2/2	Juhár
Interactive telecommunications systems and services	3rd	3/2	Juhár
Satellite communications	3rd	3/2	Marchevský
Master thesis I.	3rd	0/6	Galajda
Photonics	3rd	3/2	Turán
Digital television	3rd	3/2	Marchevský
Project management	4th	0/2	Marchevský
Master thesis II.	4th	0/18	Galajda

4.6 Postgraduate Study (PhD.) – Infoelectronics

Subject	Semester	Lectures/exercises (hours per week)	Name of Lecturer
Theory of infoelectronics	1th	0/2	
Foreign language	1th	0/2	
Research project I.	1th	0/2	
Foreign language	2nd	0/2	
Infoelectronics systems	2nd	0/2	
Research project II.	2nd	0/2	
Specialization subject	3rd	0/2	
Research work	3rd	0/8	
Research project III.	3rd	0/4	
Research work	4th	0/8	
Research project IV.	4th	0/2	
Research work	5th	0/12	
Research project V.	5th	0/2	
Thesis - Research work	6th	0/9	

4.7 Postgraduate Study (PhD.) – Electronics Measurement Systems

Subject	Semester	Lectures/exercises (hours per week)	Name of Lecturer
Topics from mathematics and physics	1th	0/2	
Foreign language	1th	0/2	
Research project I.	1th	0/2	
Foreign language	2nd	0/2	
Measure theory	2nd	0/2	
Research project II.	2nd	0/2	
Specialization subject	3rd	0/2	
Research work	3rd	0/8	
Research project III.	3rd	0/4	
Research work	4th	0/8	
Research project IV.	4th	0/2	
Research work	5th	0/12	
Research project V.	5th	0/2	
Thesis - Research work	6th	0/9	

4.8 Graduate Study (PhD.) –Telecommunications

Subject	Semester	Lectures/exercises (hours per week)	Name of Lecturer
Communication system theory	1th	0/2	
Foreign language	1th	0/2	
Research project I.	1th	0/2	
Foreign language	2nd	0/2	
Advanced communication technology	2nd	0/2	
Research project II.	2nd	0/2	
Specialization subject	3rd	0/2	
Research work	3rd	0/8	
Research project III.	3rd	0/4	
Research work	4th	0/8	
Research project IV.	4th	0/2	
Research work	5th	0/12	
Research project V.	5th	0/2	
Thesis - Research work	6th	0/9	

5 RESEARCH PROJECTS

- RF/Microwave Communication Subsystems for Emerging Wireless Technologies (COST Action IC0803)
- Propagation Tools and Data for Integrated Telecommunication, Navigation and Earth Observation Systems (COST Action IC0802)
- INDECT – Intelligent Information System Supporting Observation, Searching and Detection for Security of Citizens in Urban Environment (7.FP, Contract No 218086)
- European Digital Virtual Design Lab (518565-LLP-1-2011-1-BE-ERASMUS-ESMO)
- Complex Modular Robotic System of Middle Category with Increased

Intelligence (Ministry of Education of Slovak Republic Project, No. Req-00169-0001)

- Development of Measurement Apparatus and Multimedia e-Learning Book Supporting Education in the Field of UWB Sensor Networks (Ministry of Education of Slovak Republic KEGA Project, No. 3/7523/09)
- WEBLAB - Exploitation of WEB Technologies for Electronic Courses Requiring Laboratory Exercises (Ministry of Education of Slovak Republic KEGA Project, No. 3/7115/09)
- Through Wall Tracking of Moving Targets by Using UWB Radar Systems (Project of Agency for Science and Research, No. APVV LPP-0080-09)
- Intelligent Control of Service Robot (Project of Agency for Science and Research, No. APVV VMSP-P-0004-09)
- Complex Modular Robotic System of Middle Category with Increased Intelligence (Project supported by Ministry of Education in the frame "Stimulus for R&D program", MŠ SR 3928/2010-11)
- Research of Modules for Intelligent Robotic Systems (Operational Program Research and Development, No. IMTS-26220220141)
- Competency Centre for Knowledge Technologies applied at Innovation of Production Systems in Industry and Services (Operational Program Research and Development, No. IMTS-26220220155)
- Centre of Information and Communication Technologies for Knowledge Systems (Operational Program Research and Development, Call OPVaV-2008/2.1/01-SORO, No. IMTS-26220120020)
- Development of the Centre of Information and Communication Technologies for Knowledge Systems (Operational Program Research and Development, No. IMTS-26220120030)
- Centre of Excellence of the Integrated Research & Exploitation the Advanced Materials and Technologies in the Automotive Electronics (Operational Program Research and Development, No. IMTS-26220120055)
- Security of Next Generation Telecommunication Networks and Systems (Scientific Grant Agency Project VEGA, No. 1/0065/10)
- Advanced Signal Processing Techniques for Reconfigurable Wireless Sensor Networks (Scientific Grant Agency Project VEGA, No. 1/0045/10)
- New Testing Methods for Analog-to-Digital Interfaces Based on the Error Model Identification (Scientific Grant Agency Project VEGA, No. 1/0555/11)

6 CO-OPERATION

6.1. Co-operation in Slovakia

- Contineo s.r.o., Košice
- Elcom s.r.o., Prešov
- Slovak Academy of Science
- Slovak Telecom
- Volkswagen Slovakia a.s.
- VSE, Košice (RWE Group)
- ZŤS výskumno-vývojový ústav Košice a.s.

6.2. International Co-operation

- Austrian Research Institute for Artificial Intelligence (OFAI) of the Austrian Society for Cybernetic Studies
- Crabbe Consulting Ltd, Germany
- FTW Telecommunications Research Center Vienna, Austria
- Geozondas Ltd., Lithuania
- Ingenieur Büro Ralf Klukas, Germany
- INESC Lisabon, Portugal
- IMEC, Netherlands
- MEDAV GmbH, Germany
- Meodat Meßtechnik, Germany
- Statens Räddningsverk, Sweden
- ŠkodaAuto Mladá Boleslav, Czech Republic
- Second University of Naples, Italy
- Vrije Universiteit Brussel, Belgium
- Technische Universität Ilmenau, Germany
- Hamburg University of Technology, Germany
- Techische Universiteit Delft, Netherlands
- Universitat Ramon Llull, Barcelona, Spain
- Technical University Budapest, Hungary
- Technical University of Ljubljana, Slovenia
- Technical University of Clju-Napoca, Romania
- University of Firenza, Italy
- University of Gent
- University of Maribor, Slovenia
- University of Sannio, Benevento, Italy
- University of Reggio Di Calabria, Italy
- University of Mediteranea, Italy
- University of Bologna, Italy
- University of Gävle, Sweeden

6.2.1. Visit of Staff Members to Foreign Institutions

- Bugár,G., TU Vienna, Austria April 11-12, 2011
- Bugár,G., VUT Brno, Czech Republic April 18-21, 2011
- Bugár,G., VUT Brno, Czech Republic September 6-9, 2011
- Bánoci,V., TU Vienna, Austria April 11-12, 2011
- Bánoci,V., VUT Brno, Czech Republic April 18-21, 2011
- Cipov,V., University of Oradea, Romania May 26-27, 2011
- Doboš,Ľ., TU Vienna, Austria April 11-13, 2011
- Doboš,Ľ., AGH University of Science and Technology Krakow, Poland June 3-6, 2011
- Doboš, Ľ., University of Pisa, Italy September 3-10, 2011
- Drutarovský,M., TU Ilmenau, Germany May 1-6, 2011
- Drutarovský,M., BUTE Budapest, Hungary October 3-4, 2011
- Drutarovský,M., Hasselt, Belgium November 15-17, 2011
- Dupák,D., VUT Brno, Czech Republic April 18-21, 2011
- Dupák,D., UPC Barcelona, Spain September 18-21, 2011
- Galajda,P., Máchovo Jezero, Czech Republic May 9-13, 2011

- Galajda,P., Hamburg University of Technology, Germany Aug. 30 – Sept. 1, 2011
- Galajda,P., UPC Barcelona, Spain September 18-21, 2011
- Galajda,P., BUTE Budapest, Hungary October 3-4, 2011
- Gamcová,M., University of Pisa, Italy September 3-10, 2011
- Gamec,J., University of Pisa, Italy September 3-10, 2011
- Gamec,J., Geozondas Ltd. Vilnius, Lithuania October 3-7, 2010
- Gazda,J., BUTE Budapest, Hungary October 3-4, 2011
- Gladišová,I., TU Ilmenau, Germany April 30 – May 7, 2011
- Gladišová,I., University of Pisa, Italy September 3-10, 2011
- Goč-Matis,P., VUT Brno, Czech Republic April 18-21, 2011
- Goč-Matis,P., VUT Brno, Czech Republic September 6-9, 2011
- Godla,M., ČVUT Prague, Czech Republic July 6-16, 2011
- Hládek,D., Dresden University, Deutschland February 20-26, 2011
- Hládek,D., University of Oradea, Romania May 26-27, 2011
- Juhár,J., University of Pisa, Italy September 3-10, 2011
- Juhár,J., EC, Brussels, Belgium September 21-23, 2011
- Kanócz,T VUT Brno, Czech Republic April 18–21, 2011
- Kanócz,T., Hradec Králové, Czech Republic June 23-25, 2011
- Kocur,D., University of Perugia, Italy April 6–9, 2011
- Kocur,D., Kemer, Turkey April 18–25, 2011
- Kocur,D., Hamburg University of Technology, Germany Aug. 30 – Sept. 1, 2011
- Kocur,D., Valletta, Malta September 17-22, 2011
- Kocur,D., BUTE Budapest, Hungary October 3-4, 2011
- Kocur,D., United Kingdom October 10-16, 2011
- Levický,D., Máchovo Jezero, Czech Republic May 9-13, 2011
- Levický,D., University of Miskolc, Hungary June 8-9, 2011
- Levický,D., VUT Brno, Czech Republic September 6-9, 2011
- Levický,D., University of Zagreb, Zadar, Croatia September 12-18, 2011
- Levický,D., ČVUT Prague, Czech Republic December 6-8, 2011
- Liptaj,M., VUT Brno, Czech Republic April 18-21, 2011
- Lojka,M., AGH University of Science and Technology Krakow, Poland June 3-6, 2011
- Maceková,Ľ., TU Ilmenau, Germany April 30 – May 7, 2011
- Michaeli,L., ČVUT Prague, Czech Republic July 11-17, 2011
- Michaeli,L., University of Orvieto, Italy June 25 – July 3, 2011
- Michaeli,L., ČVUT Prague, Czech Republic September 14-16, 2011
- Michaeli,L., Duque de Caxias, Brasil Sept. 24 – Oct. 3, 2011
- Ondáš,S., University of Oradea, Romania May 26-27, 2011
- Ondáš,S., VUT Brno, Czech Republic September 6-9, 2011
- Ovseník,Ľ., BUTE Budapest, Hungary April 4-8, 2011
- Papaj,J., Berlin University, Deutschland February 9-12 2011
- Papaj,J., Máchovo Jezero, Czech Republic May 9-13, 2011
- Papaj,J., University of Oradea, Romania May 26-27, 2011
- Papaj,J., AGH University of Science and Technology Krakow, Poland June 3-6, 2011

- Papaj,J., AGH University of Science and Technology Krakow, Poland November 8-10, 2011
- Pleva,M., Berlin University, Deutschland February 9-12 2011
- Pleva,M., University of Oradea, Romania May 26-27, 2011
- Pleva,M., University of Wuppertal, Germany June 21, 2011
- Pleva,M., Grenoble, France June 18-30, 2011
- Pleva,M., BUTE Budapest, Hungary July 7-9, 2011
- Pleva,M., AGH University of Science and Technology Krakow, Poland November 8-10, 2011
- Rovňáková,J., University of Perugia, Italy April 6–9, 2011
- Rovňáková,J., VUT Brno, Czech Republic April 18-21, 2011
- Rovňáková,J., BUTE Budapest, Hungary August 17-21, 2011
- Rovňáková,J., Valletta, Malta September 17-22, 2011
- Rovňáková,J., United Kingdom October 10-16, 2011
- Sekerák,M., ČVUT Prague, Czech Republic July 6-16, 2011
- Šaliga,J., Máchovo Jezero, Czech Republic May 9-13, 2011
- Šaliga,J., University of Orvieto, Italy June 18–26, 2011
- Šaliga,J., University of Orvieto, Italy June 29 – July 2, 2011
- Šaliga,J., ČVUT Prague, Czech Republic May 30 – June 3, 2011
- Šaliga,J., ČVUT Prague, Czech Republic July 6-16, 2011
- Šaliga,J., VUT Brno, Czech Republic September 6-9, 2011
- Šaliga,J., ČVUT Prague, Czech Republic September 14-16, 2011
- Šaliga,J., Cosenza-Rende, Italy October 10-16, 2011
- Talpašová,L., VUT Brno, Czech Republic April 18-21, 2011
- Turán,J., BUTE Budapest, Hungary April 4-8, 2011
- Urdzík,D., TU Ilmenau, Germany May 31 – July 31, 2010
- Urdzík,D., Geozondas Ltd. Vilnius, Lithuania October 3-7, 2010
- Varchola,M., VUT Brno, Czech Republic February 17-18, 2011
- Varchola,M., University Bochum, Germany June 13-20, 2011
- Varchola,M., Hasselt, Belgium November 15-17, 2011
- Viszlay,P., University of Oradea, Romania May 26-27, 2011
- Viszlay,P., Vsetín, Czech Republic August 29-31, 2011
- Viszlay,P., VUT Brno, Czech Republic September 6-9, 2011
- Vozáriková,E., TU Vienna, Austria April 11-12, 2011
- Vozáriková,E., AGH University of Science and Technology Krakow, Poland June 3-6, 2011

6.3. Membership in International Organizations and Societies

- Čižmár, A.: Member IEEE Affiliate Computer Society, No. 41237162.
- Čižmár, A.: Member of Audio Engineering Society, New York, I.D. 44154.
- Galajda, P.: Member of Czech and Slovak Radioelectronics Engineering Society.
- Juhár, J.: Member of the ISCA (International Speech Communication Association).
- Juhár, J.: Member of EU Domain Committee COST for ICT (Information and Communication Technologies) – National Delegate.
- Juhár, J.: Member of AES (Audio Engineering Society), Memb. No. 76122.
- Juhár J.: Member of IEEE, Memb. No. 90402602.

- Juhár, J.: Member of the editorial board “International Journal of Signal and Imaging Systems Engineering”, Issued by Inderscience Publishers, Geneva, Switzerland.
- Kocur, D.: Member of the editorial board of the journal "Acta Polytechnica Hungarica".
- Levický, D.: Member of the editorial board of the journal "Slaboproudý obzor".
- Levický, D.: Member of the IEEE.
- Levický, D.: Member of Czech and Slovak Radioelectronics Society.
- Michaeli, L.: Head of Slovak IMEKO National Committee and head of the IMEKO Technical Committee TC-4 "Measurement of Electrical Quantities".
- Michaeli, L.: Member of the editorial board „Computer Standard & Interfaces“, Issued by Elsevier, Amsterdam, New York.
- Michaeli, L.: Member of the reviewer board “Measurement”. Journal IMEKO, Issued by Elsevier, Amsterdam, New York.
- Michaeli, L.: Co-ordinator of IMEKO Working Group “AD and DA metrology”.
- Michaeli, L.: Member of the IEEE, Instrumentation & Measurement Society.
- Šaliga, J.: Member of the international board of IMEKO Technical Committee TC-4 "Measurement of Electrical Quantities".
- Turán, J.: Senior Member of the IEEE.
- Turán, J.: Member of Czech and Slovak Radioelectronics Society.

6.4. Membership in Slovak Organizations and Societies

- Čižmár, A.: Member of Technical Standardization Commission No.41 for Telecommunications In Slovakia.
- Doboš, Ľ.: Member of Technical Standardization Commission No.80 for Radiocommunications In Slovakia.
- Drutarovský, M.: Member of the editorial board of the journal "Acta Electrotechnica et Informatica".
- Juhár, J.: Member of Technical Standardization Commission No.55 for Electroacustics and ultrasound In Slovakia.
- Kocur, D.: Executive editor of the editorial board of the journal "Acta Electrotechnica et Informatica".
- Levický, D.: Member of the editorial board of the journal "Acta Electrotechnica et Informatica".
- Michaeli, L.: Member of the scientific board of Electrotechnical Faculty, University Transport and Communication, Žilina, Slovakia.
- Michaeli, L.: Member of the editorial board „Measurement Science Review“, Issued by SAV, Bratislava.
- Michaeli, L.: Editor in Chief of the editorial board of the journal "Acta Electrotechnica et Informatica".
- Michaeli, L.: Scientific Grant Agency of Slovak Republic.
- Šaliga, J.: Member of the editorial board of the journal "Acta Electrotechnica et Informatica".
- Šaliga, J.: Member of the editorial board of the journal "Radioengineering".
- Turán, J.: Member of the Slovak Technical Standardization Committee No.53 for Cables, Conductors and Isolating Materials.
- Turán, J.: Member of the Slovak Technical Standardization Committee No.43 for Terminology.
- Turán, J.: Member of the editorial board of the journal "Acta Electrotechnica et Informatica".

6.5. Contracts, International Scientific Projects

- RF/Microwave Communication Subsystems for Emerging Wireless Technologies (COST Action IC0803)
- Propagation Tools and Data for Integrated Telecommunication, Navigation and Earth Observation Systems (COST Action IC0802)
- INDECT – Intelligent Information System Supporting Observation, Searching and Detection for Security of Citizens in Urban Environment (7.FP, Contract No 218086)
- European Digital Virtual Design Lab (518565-LLP-1-2011-1-BE-ERASMUS-ESMO)

7 THESES

Thesis type	Bachelor	Master	Doctoral
Number	82	97	3

8 PUBLICATIONS

8.1. Books

[1] CERŇAK,M.-ČIŽMÁR,A.-DARJAA,S.-DOBOŠ,Ľ.-HLÁDEK,D.-JARINA,R.-JUHÁR,J.-LOJKA,M.-MIRILOVIČ,M.-PAPAJ,J.-PAPCO,M.-PLEVA,M.-RUSKO,M.-ONDÁŠ,S.-STAŠ,J.-TICHÁ,D.-TRNKA,M.-VAVREK,J.-VISZLAY,P.-VOZÁRIKOVÁ,E.: Rečové technológie v telekomunikačných a informačných systémoch. In: EQUILIBRIA, Košice, Slovakia, 2011, 517 pp.

[2] GAMEC,J.-GAMCOVÁ,M.-MICÁK,J.: Smithov diagram riešené príklady. In: FEI TU Košice, Slovakia, 2011, 65 pp.

[3] VARCHOLA,M.-DRUTAROVSKÝ,M.: Cryptographic True Random Number Generator with Malfunction Detector Mathematical Model of the Noise Source, Synthesis and Testing in FPGAs, and Built-in Malfunction Detector Architecture. In: Saarbrücken: LAP LAMBERT Academic Publishing, 2011, 136 pp.

8.2. Textbooks

[1] DRUTAROVSKÝ,M.: Ochrana obsahu vysielaného v systémoch DVB. In: Progresívne technológie v DVB-T, FEI TU Košice, Slovakia, 2011, pp. 95-118.

[2] GALAJDA,P.: DVB-T. In: Progresívne technológie v DVB-T, FEI TU Košice, Slovakia, 2011, pp. 48-69.

[3] KOCUR,D,-GAZDA,J.-DROTÁR,P.-DUPÁK,D.: Modulácia OFDM. In: Progresívne technológie v DVB-T, FEI TU Košice, Slovakia, 2011, pp. 71-91.

[4] MACEKOVÁ,Ľ.-LEVICKÝ,D.-MARCHEVSKÝ,S.: Digitálna televízia, teória a prax. In: Progresívne technológie v DVB-T, FEI TU Košice, Slovakia, 2011, pp. 18-44.

[5] MARCHEVSKÝ,S.-LEVICKÝ,D.-MACEKOVÁ,Ľ.-PILLAR,S.-HRUŠOVSKÝ,B.-HOLOVÁČ,Ľ.: IPTV : Základné technologické riešenie. In: Progresívne technológie v DVB-T, FEI TU Košice, Slovakia, 2011, pp. 150-199.

[6] TURÁN,J.-OVSENÍK,Ľ.: Prvky optoelektroniky v spoločných rozvodoch pre príjem DVB-C,T,S. In: Progresívne technológie v DVB-T, FEI TU Košice, Slovakia, 2011, pp. 121-148.

8.3. Journals

[1] CIPOV,V.-DOBOŠ,Ľ.-PAPAJ,J.: Cooperative Trilateration-based Positioning Algorithm for WLAN Nodes Using Round Trip Time Estimation. In: Journal of Electrical and Electronics Engineering, Vol. 4, no. 1 (2011), 29-34.

[2] DRUTAROVSKÝ,M.-GALAJDA,P.-ŠIMŠÍK,D.-GALAJDOVÁ,A.: Embedded Control of Mechatronical Rehabilitation Shoe. In: Strojárstvo/Strojírenství, Vol. 15, no. 5 (2011), 1-6.

[3] HLÁDEK,D.-STAŠ,J.-JUHÁR,J.: A Morphological Tagger Based on a Learning Classifier System. In: Journal of Electrical and Electronics Engineering, Vol. 4, no. 1 (2011), 65-70.

[4] HRUŠOVSKÝ,B.-MOCHNÁČ,J.-MARCHEVSKÝ,S.: Error Concealment Method Based on Motion Vector Prediction Using Particle Filters. In: Radioengineering, Vol. 20, no. 3 (2011), 692-702.

[5] HRUŠOVSKÝ,B.-MARCHEVSKÝ,S.-MACEKOVÁ,Ľ.: Error Concealment Algorithms Applied on Multi-View Video Sequences. In: Acta Electrotechnica et Informatica, Vol. 11, no. 2 (2011), 11-16.

[6] KOŠČ,P.-GAMCOVÁ,M.-ŠTEC,J.-KOCUR,D.: Benchmarking of Free Authoring Tools for Multimedia Courses Development. In: Acta Electrotechnica et Informatica, Vol. 11, no. 3 (2011), 36-41.

[7] KREKÁŇ,J.-DOBOŠ,Ľ.-PAPAJ,J.: Intrusion Detection Methods in Wireless Network Systems. In: Journal of Electrical and Electronics Engineering, Vol. 4, no. 1 (2011), 79-82.

[8] LEVICKÝ,D.-KLENOVIČOVÁ,Z.-BUGÁR,G.: Metódy a systémy digitálnej vodotlače v statických obrazoch. In: Slaboproudý obzor, Vol. 67, no. 3 (2011), 1-8.

[9] MIHALÍK,J.: Generation of Knot Net for Calculation of Quadratic Triangular B-spline Surface of Human Head. In: Journal of Electrical Engineering, Vol. 62, no. 5 (2011), 274-279.

[10] MIŠENČÍK,P.-OVSENÍK,Ľ.-TURÁN,J.: Design and Analysis of FSO Systems Using the Software Package "FSO System Simulator" – Steady Model. In: Carpathian Journal of Electronic and Computer Engineering, Vol. 4, no. 1 (2011), 81-87.

[11] MIŠENČÍK,P.-TURÁN,J.-OVSENÍK,Ľ.: Design and Analysis of FSO Systems Using the Software Package "FSO System Simulator" – Statistical Model. In: Carpathian Journal of Electronic and Computer Engineering, Vol. 4, no. 1 (2011), 75-79.

[12] ONDÁŠ,S.-JUHÁR,J.-ČIŽMÁR,A.-HOLCER,R.-PLEVA,M.-HLÁDEK,D.-PAPCO,M.: Speech Interface for Controlling Service Robot SCORPIO. In: Journal of Electrical and Electronics Engineering, Vol. 4, no. 1 (2011), 143-146.

[13] PALUBOVÁ,H.-GALAJDA,P.: Performance Analysis of MC-CDMA Systems Using Chaotic and Conventional Spreading Sequences. In: Acta Electrotechnica et Informatica, Vol. 11, no. 2 (2011), 44-51.

[14] PAPAJ,J.-ČIŽMÁR,A.-DOBOŠ,Ľ.: Implementation of the Integration Model of Security and QoS for MANET to the OPNET. In: Communications in Computer and Information Science: Multimedia Communications, Services and Security, Vol. 149 (2011), 310-316.

[15] PAPAJ,J.-DOBOŠ,Ľ.-ČIŽMÁR,A.: OPNET Modeler and Cross Layer Model for the New Integration Model of Security and QoS as a One Parameter in MANET.

In: Journal of Electrical and Electronics Engineering, Vol. 4, no. 1 (2011), 163-168.

[16] PAPAJ,J.-DOBOŠ,Ľ.-ČIŽMÁR,A.: Performance Analysis of New Integration Model of Security and QoS as a One Parameter in MANET. In: Journal of Electrical and Electronics Engineering, Vol. 4, no. 1 (2011), 169-172.

[17] PLEVA,M.-VOZÁRIKOVÁ,E.-DOBOŠ,Ľ.-ČIŽMÁR,A.: The joint database of audio events and backgrounds for monitoring of urban areas. In: Journal of Electrical and Electronics Engineering, Vol. 4, no. 1 (2011), 185-188.

[18] RIDZOŇ,R.-LEVICKÝ,D.: Content Protection in Grayscale and Color Images Based on Robust Digital Watermarking. In: Telecommunication Systems, Vol. 48 (2011), 1-15.

[19] SEKERÁK,M.-MICHAELI,L.-ŠALIGA,J.-GODLA,M.: Dynamic DAC Testing by Registration of the Input Code Wordin Equality when the DAC Output Matches a Reference Signal. In: Acta Electrotechnica et Informatica, Vol. 11, no. 3 (2011), 31-35.

[20] ŠIMŠÍK,D.-GALAJDOVÁ,A.-SIMAN,D.-BUJŇÁK,J.-KRAJŇÁK,S.-GALAJDA,P.: Automatizácia domácnosti osamelých seniorov a služby v inteligentnom prostredí. In: Strojárstvo/Strojírenství, Vol. 15, no. 5 (2011), 1- 5.

[21] STAŠ,J.-HLÁDEK,D.-PLEVA,M.-JUHÁR,J.: Slovak Language Model from Internet Text Data. In: Lecture Notes in Computer Science, Vol. 6456 (2011), 340-346.

[22] ŠIMKA,M.-DRUTAROVSKÝ,M.-FISCHER,V.: Testing of PLL-Based True Random Number Generator in Changing Working Conditions. In: Radioengineering: Proceedings of Czech and Slovak Technical Universities and URSI Committees, Vol. 20, no. 1 (2011), 94-101.

[23] TURÁN,J.-SZOBOSZLAI,P.-VÁSÁRHELYI,J.: Mojette Transform Software - Hardware Implementations and its Applications. In: Infocommunications Journal, Vol. 3, no. 1 (2011), 40-48.

[24] VISZLAY,P.-PLEVA,M.-JUHÁR,J.: Dimension Reduction with Principal Component Analysis Applied to Speech Supervectors. In: Journal of Electrical and Electronics Engineering, Vol. 4, no. 1 (2011), 245-250.

[25] VOZÁRIKOVÁ,E.-JUHÁR,J.-ČIŽMÁR,A.: Acoustic Events Detection Using MFCC and MPEG-7 Descriptors. In: Communications in Computer and Information Science: Multimedia Communications, Services and Security, Vol. 149 (2011), 191-197.

[26] VOZÁRIKOVÁ,E.-PLEVA,M.-JUHÁR,J.-ČIŽMÁR,A.: Surveillance system based on the acoustic events detection. In: Journal of Electrical and Electronics Engineering, Vol. 4, no. 1 (2011), 255-258.

8.4. Other publications

Publication Type	Conferences		Other
	Foreign	Home	
Number	32	70	7

DEPARTMENT OF ELECTRICAL ENGINEERING AND MECHATRONICS

http://www.kem.fei.tuke.sk
Tel.: ++421 55 602 2279, Fax: ++421 55 633 0115

Head of Department
doc. Ing. Michal Girman, PhD.
E-mail: Michal.Girman@tuke.sk

1 DEPARTMENT'S PROFILE

The Department was established in 2005 from the previous units at the faculty: from Department of Electrical Drives and Mechatronics (establ.in1969) and from Laboratory of Industrial Engineering. The both units fused into the Department of Electrical, Mechatronic and Industrial Engineering. In 2010 the name was changed to Department of Electrical Engineering and Mechatronics.

The Department is responsible for education and research in electrical engineering in fields of power and industrial electronics, electrical machines and apparatuses, electromechanical systems, esp. in controlled drives, industrial and automotive mechatronic systems and in the area of effective production planning and control, quality management, and continuous improvement of products and services. The Department offers all types of university courses (bachelor in 2 branches, two master courses and two Ph.D. courses).

2 STAFF

Professors:	prof. Ing. Jaroslav Dudrik, PhD. prof. Ing. Pavol Fedor, PhD. prof. Ing. Irena Kováčová, PhD. prof. Ing. Jaroslav Timko, CSc. (till June 2011) prof. Ing. Pavel Záskalický, PhD.
Associate Professors:	doc. Ing. František Ďurovský, PhD. doc. Ing. Viliam Fedák, PhD. doc. Ing. Želmíra Ferková, PhD. doc. Ing. Michal Girman, PhD. doc. Ing. Michal Kostelný, CSc. doc. Ing. Daniela Perduková, PhD. doc. Ing. Jaroslava Žilková, PhD.
Assistant Professors:	Ing. Peter Bober, PhD. Ing. Peter Girovský, PhD. Ing.Mgr. Peter Kmec, PhD. Ing. Peter Košč, PhD. Ing. Ján Kaňuch, PhD. Ing. Milan Lacko, PhD. Ing. Peter Višnyi, PhD.
Assistants:	Ing. Jana Harvanová
Senior Scientists:	Ing. Peter Keusch Bc. Peter Hajsák Ing. Erik Eötvös (till August 2011) Ing. Karol Kyslan (since December 2011)
Technical Staff:	Ing. Gabriela Brečková Zuzana Olexová František Hajsák prof. Ing. Jaroslav Timko, CSc. (since July 2011)
Full time Ph.D. Students:	Ing. František Baník (till August 2011) Ing. Mišel Batmed Ing. Tomáš Béreš Ing. Marcel Bodor Ing. Matúš Hric Ing. Godem Ali M. Ismeal Ing. Michal Kaľavský Ing. Karol Kyslan Ing. Peter Nguyen Ing. Marek Pástor Ing. Marek Vacek (since September 2011)

3 LABORATORIES

- Laboratories of Electrical Engineering
- Power Electronics Laboratory
- Laboratory for CAD (COSMOS, ProEngineer, MATLAB, PSpice, and applied SW)
- Laboratory of Industrial Automation
- Laboratory of Electrical Machines
- Laboratory of Electrical Drives
- Laboratory of Controlled Electrical Drives and Mechatronics
- Laboratory of Process Modelling and Simulation
- Laboratory of Control Systems and Robotics
- Virtual Laboratory of Technological Processes Control by Programmable Logic. www.virtual.laboratory.kempi.fei.tuke.sk
- Virtual Laboratory of Mechatronic Systems Control: http://andromeda.fei.tuke.sk
- Laboratory for Integrated Mechatronic Modules for Adaptive Drives. Joint Laboratory of Department of Electrical Engineering and Mechatronics TU Košice, ZTS VVÚ Košice, a.s. and SPINEA, s.r.o. Prešov.

4 TEACHING

4.1 Undergraduate Study (Bc.) - Electrical Engineering

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Electrical Engineering Fundamentals	1st	2/2	Kaňuch
Industrial Electronics	2nd	2/2	Kováčová
Electrical Machines	3rd	2/2	Záskalický
Microprocessor Techniques	3rd	2/2	Perduková
Electrical Drives and Power Electronics	4th	2/2	Záskalický
Man-Machine Interfaces	4th	2/2	Perduková
Semiconductor Supply Sources and Converters	5th	3/2	Dudrik
Automation in Industrial Systems	5th	2/2	Fedor
Bachelor Thesis I.	5th	0/5	Supervisor
Controlled Drives	6th	2/2	Ďurovský
Electrical Systems Projecting	6th	2/2	Ferková
Bachelor Thesis II.	6th	0/9	Supervisor

4.2 Undergraduate Study (Bc.) - Automation of Mechatronics Systems

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Business and Management	1th	2/0	Kmec
Industrial Electronics	2nd	2/2	Kováčová
Microcontroller Techniques	3th	2/2	Perduková
Computer Applications	3th	2/2	Perduková
Electrical Machines	3rd	2/2	Záskalický
Electrotechnics in Vehicles	3th	2/2	Ďurovský
Electrical Actuators and Drives	4th	2/2	Žilková
ManMachine Interface	4th	2/2	Peduková
CAE Programs	4th	2/2	Fedák
Bachelor Thesis I.	5th	0/8	Supervisor
Industrial Control Systems	5th	2/2	Fedor

Sensors and Measurement of Nonelectrical Variables	5th	2/2	Fedor
Pneumatic nad Hydraulic Drives	5th	2/2	Bober
Automotive Mechatronics	5th	2/2	Ďurovský
Power Semiconductor Converters	5th	2/2	Dudrik
Bachelor Thesis II.	6th	0/8	Perduková
Motion Control	6th	2/2	Ďurovský
Projecting of Electrical Systems	6th	2/2	Ferková
Technical Practice	6th	0/6	Perduková

4.3 Undergraduate Study (Bc.) - Industrial Engineering

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Business and Management	1th	2/0	Kmec
Information Systems in Industry	2nd	2/2	Košč
Industrial Electronics	2nd	2/2	Kováčová
Electrical Machines	3rd	2/2	Záskalický
Human Resource Management	3th	2/2	Košč
Pneumatic and Hydraulics Drives	3th	2/2	Bober
Microcomputer Techniques	3th	2/2	Perduková
Electrical Actuators and Drives	4th	2/2	Žilková
Simulation of Production Systems	4th	2/2	Bober
Man-Machine Interface	4th	2/2	Perduková
Automation of Industrial Systems	5th	2/2	Fedor
Microprocessor Technique	5th	2/2	Perduková
CAD Suported Management	5th	2/2	Fedák
Sensors and Measurement of Non-electrical Variables	5th	2/2	Fedor
Design of Electrical Systems	5th	2/2	Ferková
Power Semiconductor Converters	5th	2/2	Dudrik
Controlled Drives	6th	2/2	Ďurovský
Technical Practice in Enterprise	6th	0/6	Perduková
Bachelor Thesis	6th	0/4	Supervisor

4.4 Graduate Study (Ing.) - Electrical Engineering

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Power Semiconductor Systems	7th	2/2	Dudrik
Applied Electronics	7th	2/2	Kováčová
Dynamic Phenomena of Electrical Machines	7th	2/2	Záskalický
Technology of Production in Electronics	7th	2/2	Slosarčík
Enterprise Control Management	7th	2/2	Girman
Control Management	7th	2/2	Kmec
Electromagnetic Compatibility	8th	2/2	Kováčová
Electrical Machines for Automatisation	8th	2/2	Ferková
Semiconductor Converters Construction	8th	2/2	Dudrik
Control of Assembly Lines with Programming Controllers	8th	2/2	Fedor
Statistical Process Control	8th	2/2	Girman
Semester Project	8th	0/4	Supervisor
Databases Systems	8th	2/2	
Control Intelligent Control in El. Systems	9th	2/2	Žilková
Three-Dimensional Modelling and Simulation	9th	2/2	Ferková
Signal Processors	9th	2/2	Višnyi

Electro Energetic			Kolcun
Servosystems	9th	2/2	Ďurovský
Technology of Production in Electrotechnics	9th	2/2	Girman
Diploma Thesis	9th	0/12	Supervisor

4.5 Graduate Study (Ing.) - Automation of Mechatronic Systems

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Models of Mechatronic Systems	7th	2/2	Fedák
Non-linear Mechatronic Systems	7th	2/2	Fedor
Power Semiconductor Systems	7th	2/2	Dudrik
Semester Project	8th	0/4	Fedor
Control of Production Systems by PLC	8th	2/2	Fedor
Electrical Machines for Automation	8th	2/2	Ferková
Robotics	8th	2/2	Žilková
Database Systems	8th	2/2	Perduková
Diploma Thesis I.	9th	0/6	Fedor
Production Technologies in Mechatronics	9th	2/2	Girman
Servosystems	9th	2/2	Ďurovský
Project Control	9th	2/2	Girman
Intelligent Control of El. Systems	9th	2/2	Žilková
Mechatronic Production Systems	9th	2/2	Ďurovský
Diploma Thesis II.	10th	0/18	Supervisor

4.6 Postgraduate Study (PhD.) - Electrical Engineering

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Power Converter Systems	1st	2/0	Dudrik
Ph.D. Project I	1st	0/2	Supervisor
Foreign Language I	1st	2/0	Dept. of Foreign Languages
Servosystems	2nd	2/0	Fedor
Ph.D. Project II	2nd	0/2	Supervisor
Foreign Language II	2nd	2/0	Dept. of Foreign Languages
Ph.D. Project III	3rd	0/4	Supervisor
Subject of Specialization	3rd	2/0	According to the subject
Scientific Activity	3rd	0/8	Supervisor
Ph.D. Project IV	4th	0/2	Supervisor
Scientific Activity	4th	0/8	Supervisor
Ph.D. Project IV	5th	0/2	Supervisor
Scientific Activity	5th	0/8	Supervisor
Ph.D. Thesis	5th	0/9	Supervisor

4.7 Postgraduate Study (PhD.) - Mechatronic Systems

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Theory of Mechatronic Systems	1st	2/0	Fedor
Ph.D. Project I	1st	0/2	Supervisor
Foreign Language I	1st	2/0	Dept. of Foreign Languages
Servosystems	2nd	2/0	Fedor

Ph.D. Project II	2nd	0/2	Supervisor
Foreign Language II	2nd	2/0	Dept. of Foreign Languages
Ph.D. Project III	3rd	0/4	Supervisor
Subject of Specialization	3rd	2/0	According to the subject
Scientific Activity	3rd	0/8	Supervisor
Ph.D. Project IV	4th	0/2	Supervisor
Scientific Activity	4th	0/8	Supervisor
Ph.D. Project IV	5th	0/2	Supervisor
Scientific Activity	5th	0/8	Supervisor
Ph.D. Thesis	5th	0/9	Supervisor

5 RESEARCH PROJECTS

- *Research of power semiconductor converters with high efficiency of electric energy conversion.* APVV - 0185-10 (Slovak Research and Development Agency), 2011-2014. Principal investigator: DUDRIK, J.
- *Research of power semiconductor converters for industrial and electric utility applications.* VEGA (Scientific Grant Agency) Project No 1/0099/09 (2009-2011. Co-ordinator: DUDRIK, J.
- *Centre of excellence of power electronics systems and materials for their components.* Code ITMS: 26220120003, (06/2009 - 05/2011) The project is funded by European Community, ERDF – European regional development fund. Project contractor: University of Žilina, co-operation FEI TU Košice. Co-ordinator: DUDRIK, J.
- *Low power static supply development for electrical systems.* Structural Funds Projects of the EU. SF EU (2010-2011), ITMS 26220220029, Project co-ordinator: FEDOR, P.
- *Centre of excellence of power electronics systems and materials for their components II.* Code ITMS: ITMS: 26220120046, (9/2010 - 8/2013) The project is funded by European Community, ERDF – European regional development fund. Project contractor: University of Žilina, co-operation FEI TU Košice. Co-ordinator: DUDRIK, J.
- *Centre of excellence on integrated research and application of progressive materials and technologies in automotive electronics. ITMS 26220120055.* The project is funded by European Community.
- *Applying artificial intellingence methods to industrial systems controlling..* VEGA (Scientific Grant Agency) Project No 1/0006/10 (2010-2011. Co-ordinator: TIMKO, J.
- *Research and developement of a small power drives with two-phase motors,* APVV-0138-10, 2011-2014, Coordinator: Záskalický, P.

6 CO-OPERATION

6.1 Co-operation in Slovakia

The Department co-operates with many industrial enterprises in Slovakia having joint project at modernising of the electrical drive systems, control and mechatronic applications: U.S.STEEL Košice, SIEMENS, ABB, BSH Drives and Pumps Michalovce, BWG Prešov, Křižík Prešov, Schneider Electric Slovakia, Spell Procont Prešov, Spinea Prešov, Vonsch Brezno, Kybernetika Košice, TEKO Košice, ENERGO CONTROL Košice, ZŤS VVU Košice, ŽP Podbrezová, Bukóza Hencovce,

Genesis Prešov, Embraco Slovakia Spišská Nová Ves, Kopex Košice, Slovak Union for Quality, Innovation and Design Q-IMPULZ, Košice, SEZ Krompachy, DATAKON Košice.

6.2 International Co-operation

- University of Zagreb, Croatia
- Brno University of Technology, Czech Republic
- Technical University of Liberec, Czech Republic
- VŠB -Technical University of Ostrava, Czech Republic
- West Bohemian University, Pilsen, Czech Republic
- University of Technology and Economy, Budapest, Hungary
- University of Miskolc, Hungary
- Delft University of Technology, The Netherlands
- Warsaw University of Technology, Poland
- Czech Academy of Science, Prague.
- Silesian Polytechnic Institute of Gliwice
- Transilvania University of Brasov, Romania
- University of Oradea, Romania
- University of Maribor, Slovenia
- INPL-ENSEM Nancy, France

6.2.1. Visits of Staff Members to Foreign Institutions

- ĎUROVSKÝ, F.; HRIC, M.; KYSLAN, K.: Siemens Vienna (A), 25 Oct. 2011
- FEDÁK V.: microCAD 2011, Miskolc (HU),
- FERKOVÁ, Ž.: Tech Soft Praha, 19-21 Oct. 2011.
- FERKOVÁ, Ž: VUT Brno, KOPES 2011, 31.1.-2.2.2011
- ZÁSKALICKÝ, P.; KAŇUCH, J.; FERKOVÁ, Ž: West Pomeranian University of Technology, Szczecin (PL), 19-23 June 2011
- KAŇUCH, J.: VŠB-TU Ostrava (CZ), 7-9 Sept. 2011
- ZÁSKALICKÝ, P.; KAŇUCH, J.; FERKOVÁ, Ž.: VUT Brno (CZ), 7-8 Nov. 2011

6.3 Membership in International Organizations, Societies and Committees

- DUDRIK, J. – IEEE member
- DUDRIK, J., FEDÁK, V., TIMKO, J.: Power Electronics and Motion Control Council EPE-PEMC – Budapest. Council members.
- FEDÁK, V.: EPE – European Power Electronics and Drives Association, Brussels. EC member, General Assembly member, ISC
- FERKOVÁ, Ž: member of Steering Committee ISEM **(**INTERNATIONAL SYMPOSIUM ON ELECTRIC MACHINERY) ČVUT Praha.
- FEDÁK, V: EDPE 2011, The High Tatras, Co-chairman

6.4 Membership in Slovak Professional Bodies

- FEDÁK, V.; KAŇUCH, J.; TIMKO, J.; ZÁSKALICKÝ, P.: members of The SES (Slovak Electrotechnical Society), Branch at FEI TU Košice
- FEDÁK, V.: Council of the Secondary Technical School for EE, Košice (delegate of the FEI TU Košice)
- FEDOR, P.: member of board for the PhD. Study in Mechatronic systems at FEI TU Košice

- FERKOVÁ, Ž.: member of Technical Standards Commission on Electrical Machines in SR
- PERDUKOVÁ, D.: member of board for the PhD. Study in Electrical Engineering at FEI TU Košice
- PERDUKOVÁ, D.: member of board for the PhD. Study in Mechatronic systems at FEI TU Košice
- TIMKO, J. (Vice-chairman); FEDÁK, V.; FEDOR, P. DUDRIK J. - members of Joint Slovak Board for the Ph.D. Study in Electrical Engineering
- TIMKO, J. (chairman), GIRMAN, M., KOVÁČOVÁ, I., FEDOR, P., FEDÁK, V., DUDRIK, J.: members of board for the PhD. Study in Electrical Engineering at FEI TU Košice
- TIMKO, J.: member of board for the PhD. Study in Electrical Engineering at EF ZU Žilina
- TIMKO, J.: member of board for the PhD. Study in Mechatronics at SjF TU Košice
- ZÁSKALICKÝ, P.: member of board for the PhD. Study in Electrical Engineering at EF ZU Žilina
- ZÁSKALICKÝ, P.: member of board for the PhD. Study in Electrical Engineering at FEI TU Košice
- ZÁSKALICKÝ, P.: member of board for the PhD. Study in Mechatronic systems at FEI TU Košice

6.5 National Educational Projects

- Students' Skills Development for Mechatronic Systems Control. KEGA 103-039TUKE-4/2010. Project co-ordinator: ĎUROVSKÝ, F.
- New technologies in education of subjects in the field of electrotechnical and mechatronic systems control. KEGA 006-005TUKE-4/2010. Project co-ordinator: PERDUKOVÁ, D.

6.6 Editorial Boards

- BOBER, P. Editorial board for journal „Kvalita, Inovácia, Prosperita" (Quality, Innovation, Prosperity), ISSN 1335-1745.
- DUDRIK, J. – Member of the Series Editorial Board of Annals of the Academy of Romanian Scientists.
- PERDUKOVÁ, D.: Editorial board of Elektroenergetika journal, ISSN 1337-6756.
- ZÁSKALICKÝ, P.: Editorial board of Acta Technica CSAV. Journal of Academy of Sience of the Czech republic, Praha. ISSN 0001-7043.
- ZÁSKALICKÝ, P.: Editorial board of KOMEL, Branzowy osrodek badavczo-rozwojovy Maszyn elektrycznych, Katowice, Poland. ISSN 0239-3646.

7 THESESDefened Ph.D. Theses

- BANÍK, František: Intelligent navigation of autonomous vehicles in space. Supervisor: Perduková, D.

Thesis type	Bachelor	Master	Doctoral
Number	45	87	1

8 OTHER ACTIVITIES

8.1 Symposia, Workshops, Conferences

- The 17th Int. Conference on Electrical Drives and Power Electronics, EDPE 2011 (and simultanously the 5rd Joint Slovak-Croatian Conference), was held in the Hotel Academia, Stará Lesná, The High Tatras, on Sept. 28 – 30, 2011. 65 papers were presented there by participants from 11 countries in 4 keynote, 6 technical and 2 dialogue sessions.
  The keynote lecturers Prof. Helmut Weiss, Montanuniversity of Leoben (A), Prof. Ivo Doležel Ivo, Czech Technical University in Prague (CZ), Prof. Miro Milanovič, University of Malibor (SL), Prof. Zdeněk Peroutka, University of West Bohemia in Pilsen (CZ). 15 papers were presented from our insitution. The details and papers are available at the conference web site www.edpe.sk, menu: EDPE CD-ROM ARCHIVE.

8.2 Projects for Industry

- Test bench for precise actuators. For ZTS VVÚ Košice. P/104/0002/11, Co-ordinator: ĎUROVSKÝ, F.

8.3 Student Competitions and Rewards

- BODOR Marcel: Rector award for the best doctoral paper in framework of „Week of science in Slovakia 2011“.
- BODOR Marcel: Dean award for the best paper at the 11th Scientific Conference of Young Researchers of Faculty of Electrical Engineering and Informatics Technical University of Košice (SCYR 2011).
- PÁSTOR Marek: Award for the best poster at the 11th Scientific Conference of Young Researchers of Faculty of Electrical Engineering and Informatics Technical University of Košice (SCYR 2011).
- BATMEND Mišél: Dean Award of poster presentation at 11th Scientific Conference of Young Researchers of Faculty of Electrical Engineering and Informatics Technical University of Košice (SCYR 2011).
- BANÍK František: SES Branch Award of oral presentation of the paper at 11th Scientific Conference of Young Researchers of Faculty of Electrical Engineering and Informatics Technical University of Košice (SCYR 2011).
- TANKO Viktor: Schneider-Electric award: The best Bachelor/Master Theses, First price. 2011.
- BAČIK Ján: Robot Challenge 2011, Vienna, 3rd place in Free Style category.
- Bosch Electromobil Race 2011. Miskolc, participation of 3 teams.

8.4 Compositions for Dissertation Examinations

- HRIC, Matúš: Control of servodrives with high precision demads. Supervisor: Fedák, V.
- KÁĽAVSKÝ, Michal: Using of potential fields for moving of electrical car in space. Supervisor: Ferková, Ž.
- KYSLAN, Karol: Load Torque Emulator. Supervisor: Ďurovský, F.
- NGUYEN, Peter: Sensorless control of electrical drives. Supervisor: Žilková, J.
- PÁSTOR, Marek: Cascade inverter for fotovoltic systems. Supervisor: Dudrik, J.

9 PUBLICATIONS

9.1 Books

[1] PERDUKOVÁ, Daniela - FEDOR, Pavol: Vybrané univerzálne metódy riadenia nelineárnych mechatronických systémov. 1. vyd. Košice, TU-2011. 146 p. ISBN 978-80-553-0649-0.
[2] KOŠČ, Peter: Implementácia e-learningových technológií vo vzdelávacej inštitúcii. Košice: TU-2011. 82 s. ISBN 978-80-553-0782-4.

9.2 Textbooks

[1] ŠIMKO, Vojtech - KOVÁČOVÁ, Irena: Elektronika: časť Elektrotechnika vybrané kapitoly.1.vyd. Košice: VŠBM. 2011. 82 p.ISBN 978-80-89282-50-0.
[2] KOVÁČOVÁ, Irena - KOVÁČ, Dobroslav: Priemyselná elektrotechnika: 1.časť: Modelovanie meničov. Košice. TU. 2011. 65 p. ISBN 978-80-553-0617-9.
[3] KOVÁČOVÁ, Irena - KOVÁČ, Dobroslav: Priemyselná elektrotechnika: 2.časť. Modelovanie meničov. Košice. TU. 2011. 66 p.ISBN 978-80-553-0618-6.
[4] KOVÁČ, Dobroslav - KOVÁČOVÁ, Irena: Automatizované systémy merania. Košice. TU. 2011. 78 p.ISBN 978-80-553-0616-2.
[5] KOŠČ, Peter - ANDREJKO, Anton: Systém riadenia výučby ULERN 2.0. Košice. TU. 2011. 112 p.ISBN 978-80-553-0780-0.

9.3 Scientific Journals

Forreign Journals

[1] KMEC, Peter: Temporal hierarchy in enterprise risk identification. 2011. In: Management Decision. Vol. 49, no. 9 (2011), pp.1489-1509. ISSN 0025-1747.
[2] KAŇUCH, Ján - FERKOVÁ, Želmíra: Disk stepper motor with permanent magnets. 2011. In: KOMEL-Maszyny Elektryczne: Zeszyty Problemove. No. 93 (2011), pp.149-154. ISSN 0239-3646.
[3] HRENIUC, Ovidiu - PÁSTOR, Marek: Simulation of Full-Bridge Series Resonant Inverter for Induction Heating with Asymmetrical Voltage-Cancellation Control. 2011.In: Journal of Electrical and Electronics Engineering. Vol. 4, no. 1 (2011), pp.75-78. ISSN 1844-6035. *http://electroinf.uoradea.ro/reviste_EEE /volumes/JEEE_VOL4_NO1_MAY_2011.pdf*.
[4] ZÁSKALICKÝ, Pavel - ŤAHLA, Miroslav: Modelling of a separately excited dc motor suplied by a three-phase bridge rectifier using a complex fourier series. 2011. In: KOMEL-Maszyny Elektryczne: Zeszyty Problemove. Vol. 92, no. 4 (2011), p. 33-37. ISSN 0239-3646.
[5] FEDOR, Pavol - PERDUKOVÁ, Daniela: Riadiaci systém pre tester tepelnej spúšte ističov. Elektrotechnika v praxi. Vol. 21, no. 9-10 (2011), p. 70-72. ISSN 0862-9730.

National Journals

[1] BODOR, Marcel - DUDRIK, Jaroslav: DCDC menič s mäkkým spínaním s riadeným výstupným usmerňovačom. 2011.In: Časopis pre elektrotechniku a energetiku. Roč. 17, č. 1 (2011), pp. 22-23. ISSN 1335-2547.
[2] PÁSTOR, Marek - DUDRIK, Jaroslav - BODOR, Marcel - LACKO, Milan: Kaskádový mostíkový striedač pre fotovoltický system. 2011. In: EE Časopis pre elektrotechniku a energetiku. Roč. 17, č. 1 (2011), pp. 24-25. ISSN 1335-2547.

[3] EÖTVÖS, Erik - DUDRIK, Jaroslav - BÉREŠ, Tomáš: DC-DC rezonančný menič pre fotovoltický system. 2011. In: EE Časopis pre elektrotechniku a energetiku. Roč. 17, č. 1 (2011), pp. 26-27. ISSN 1335-2547.
[4] BÉREŠ, Tomáš - EÖTVÖS, Erik - DUDRIK, Jaroslav: Obojsmerný znižovaco-zvyšovací DCDC menič pre hybridnú batériu. 2011. In: Časopis pre elektrotechniku a energetiku. Roč. 17, č. 1 (2011), pp. 31-32. ISSN 1335-2547.
[5] KYSLAN, Karol - KEUSCH, Peter - ĎUROVSKÝ, František: HIL simulácia mechatronických systémov s využitím komerčných meničov. 2011.In: ATP Journal. Č. 2 (2011), pp. 44-46. ISSN 1335-2237.
[6] GIROVSKÝ, Peter - TIMKO, Jaroslav - ŽILKOVÁ, Jaroslava: Neurónový pozorovateľ uhlovej rýchlosti v riadení pohonu s asynchrónnym motorom. 2011. In: EE : Časopis pre elektrotechniku a energetiku. Roč. 17, č. 1 (2011), pp. 28-29. ISSN 1335-2547.
[7] ĎUROVSKÝ, František - KAŇUCH, Ján: Kreslenie výkresovej dokumentácie v elektrotechnike. 2011.In: ATP Journal. č. 4 (2011), pp. 1-13. ISSN 1336-233X *http://www.atpjournal.sk/buxus/docs/Durovsky_WEB.pdf*.
[8] FEDOR, Pavol - PERDUKOVÁ, Daniela - BANÍK, František: Energeticky optimálny regulátor jednosmerného pohonu. 2011. 1 elektronický optický disk (CD-ROM).In: Strojárstvo extra. č. 5 (2011), pp. 11/1-11/3. ISSN 1335-2938.
[9] FERKOVÁ, Želmíra: Optimalizácia spínacích uhlov spínaných reluktančných motorov 2p12p2=86 a 64. 2011. In: Strojárstvo. č. 5 (2011), pp. 26/1-26/3. ISSN 1335-2938.
[10] EÖTVÖS, Erik - DUDRIK, Jaroslav - PERDUĽAK, Ján: Jednosmerný nepriamy menič s mäkkým spínaním pre zdroje napätia a prúdu. 2011.In: Časopis pre elektrotechniku a energetiku. Roč. 17, č. 5 (2011), pp. 24-26. ISSN 1335-2547.
[11] BOBER, Peter: Comparison of Different Approaches to the Cutting Plan Scheduling. 2011. In: Kvalita Inovácia Prosperita. Roč. 15, č. 1 (2011), pp. 47-56. ISSN 1335-1745. *http://qip-journal.eu/index.php/QIP/article/view/35/23*.
[12] BODOR, Marcel - DUDRIK, Jaroslav - PERDUĽAK, Ján: ZVZCS PWM converter using secondary active clamp. 2011.In: Acta Electrotechnica et Informatica. Roč. 11, č. 3 (2011), pp. 26-30. ISSN 1335-8243.
[13] KOŠČ, Peter - GAMCOVÁ, Mária - ŠTEC, Ján - KOCUR, Dušan: Benchmarking of free authoring tools for multimedia courses development. 2011.In: Acta Electrotechnica et Informatica. Roč. 11, č. 3 (2011), pp. 36-41. ISSN 1335-8243.
[14] PÁSTOR, Marek - DUDRIK, Jaroslav: Kaskádový fotovoltický striedač pre distribuovaný zdroj elektrickej energie. 2011.In: Elektroenergetika. Roč. 4, č. 4 (2011), pp. 5-10. ISSN 1337-6756.
[15] DUDRIK, Jaroslav: Tvrdé a mäkké spínanie polovodičových súčiastok. 2011. In: Časopis pre elektrotechniku a energetiku. Roč. 17, č. 6 (2011), pp. 22-23. ISSN 1335-2547.
[16] PERDUKOVÁ, Daniela - FEDOR, Pavol: Implementácia webovo orientovaných technológií výučby do oblasti elektrotechnických a mechatronických systémov. 2011. In: Časopis pre elektrotechniku a energetiku. Roč. 17, č. 4 (2011), pp. 34-35. ISSN 1335-2547.
[17] KAŇUCH, Ján: Elektromobil - historický vývoj. 2011. In: EE Časopis pre elektrotechniku a energetiku. Roč. 17, č. 6 (2011), pp. 4-7. ISSN 1335-2547.
[18] ŽILKOVÁ, Jaroslava - TIMKO, Jaroslav: Riadenie vežového zásobníka. 2011. In: ATP journal. Roč.18, č.12 (2011), pp.12-13. ISSN 1335-2237.

9.4 Patents

[1] DUDRIK, Jaroslav: Prídavné obvody na dosiahnutie spínania v nule prúdu v nepriamych jednosmerných meničoch so šírkovým riadením. (Auxiliary circuits for achievement of zero current switching in PWM DC-DC converters.). Banská Bystrica: Úrad priemyselného vlastníctva SR-2011.4.p.

9.5 Other publications

Publication Type	Confereces		Other
	Foreign	Home	
Number	10	37	3

DEPARTMENT OF PHYSICS

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Tel.: ++421 55 602 2833, Fax: ++421 55 633 0115

Head of Department
doc. RNDr. Dušan Olčák, CSc.
E-mail: Dusan.Olcak@tuke.sk

1 DEPARTMENT'S PROFILE

Since the foundation of the Department of Physics (1952), the scientific activities of the department have been predominantly oriented to the study of magnetic properties of materials using radiospectroscopic and conventional magnetic methods. At present, the research is focused on the study of magnetic properties of amorphous ferromagnetic alloys using conventional magnetic methods and to the study of polymers using nuclear magnetic resonance (NMR) and some other complementary methods, such as dielectric and dynamic-mechanical spectroscopy.

The department is divided into three sections:

- Section of Physics of Magnetic Materials
- Section of Physics of Macromolecular Systems
- Section of Organization and Development of Tuition

In 2006 the Department of Physics began to participate in the project "Completion of building up of a modern nuclear magnetic resonance laboratory" in the framework of the state programme of research and development. The co-ordinator of this project is the Slovak University of Technology in Bratislava. Other institutions participating in the project are the institutes of Comenius University in Bratislava, P.J. Šafárik University in Košice, and Slovak Academy of Sciences in Bratislava. In 2007, the Slovak National NMR Centre was established, the Solid State NMR Centre of which is located at the Department of Physics. The role of this centre is to meet the research and education requirements in Slovakia in the field of solid state NMR study of materials.

The Department of Physics provides compulsory courses of basic physics as well as a number of optional courses in various fields of physics.

Since the academic year 2008/2009, the department offers new bachelor's and engineer's study programmes Physical Engineering of Modern Materials. The graduates of this programme:

- will acquire knowledge on the structure and physical properties of materials with emphasis on progressive materials,
- will acquaint with physical phenomena which are the basis of the methods for investigation and diagnostics of materials, possibilities and procedures of controlled modification of mechanical, thermal, electrical, magnetic and optical properties of various materials,
- will acquire basic knowledge on information technologies, and will be skilled in using computer in modelling and simulation of processes in microstructure of materials.

The graduates can find positions in industry (product testing, controlling production processes), in research and development institutes, and in testing, diagnostics and environmental centres. The extent of acquired knowledge creates conditions for a good adaptability of graduates in various fields of electrotechnics, electronics and related fields.

2 STAFF

Professors: prof. RNDr. Vladimír Lisý, DrSc.

Associate Professors:
doc. RNDr. Júlia Hlaváčová, CSc.
doc. RNDr. Ladislav Novák, CSc.
doc. RNDr. Dušan Olčák, CSc.
doc. RNDr. Barnabáš Zagyi, CSc. (till 7.7.2011)
doc. RNDr. Ján Ziman, CSc.

Assistant Professors:
RNDr. Oľga Fričová, PhD.
RNDr. Zuzana Gibová, PhD.
RNDr. Cyril Hospodár
RNDr. Viktor Hronský, CSc.
RNDr. Mária Hutníková, PhD.
RNDr. Kamila Jelšovská, CSc.
Mgr. Jana Kaššovicová, CSc.
RNDr. Ján Kecer, PhD.
RNDr. Mária Kladivová, PhD.
RNDr. Mária Kovaľaková, PhD.
RNDr. Jozef Kravčák, PhD.
RNDr. Mária Kravčíková (till 31.5.2011)
RNDr. Ľubomír Mucha
Ing. RNDr. Jozef Onufer
Mgr. Mária Rybárová, PhD.
RNDr. Ladislav Ševčovič, PhD.
RNDr. Jana Tóthová, PhD.

PhD. Students:
Mgr. Magdaléna Uhrínová
Mgr. Gabriela Vasziová
Mgr. Peter Duranka
Ing. Viktória Šuhajová

Technical Staff:
Ema Havlíková
Ing. František Mižák
Alena Jakabová

3 LABORATORIES

3.1 Teaching and Research Laboratories

- Students laboratories for basic course in physics
- Solid state NMR laboratory
- Laboratory of magnetic phenomena

3.2 Special Measuring Instruments

- Multinuclear solid state NMR spectrometer Varian 400 MHz
- Spectrometer for TSDC (thermally stimulated depolarization currents) study
- Experimental apparatus for the study of magnetization characteristics (magnetization curve, susceptibility, magnetoresistance) of ferromagnetic materials

4 TEACHING

The Department of Physics gives physical courses for students of the following faculties of the Technical University:

- Faculty of Civil Engineering (SvF)
- Faculty of Electrical Engineering and Informatics (FEI)
- Faculty of Mechanical Engineering (SjF)
- Faculty of Metallurgy (HF)
- Faculty of Mining, Ecology, Process Control and Geotechnologies (FBERG)

4.1 Undergraduate Study (Bc.)

Subject	**Semester**	**Lectures/exercises** (hours per week)	**Lecturer**
Applied Physics (SjF)	2nd	0/2	Novák
Applied Physics (SjF)	2nd	0/2	Kravčák
Electromagnetism and Optics(FEI)	3rd	3/2	Ziman, Lisý
Physics (FBERG)	2nd	2/2	Lisý, Jelšovská
Physics (FBERG)	2nd	2/0	Jelšovská
Physics 1 (FBERG)	2nd	2/2	Lisý, Jelšovská
Physics 1 (SjF)	1st	2/1	Novák
Physics (SjF)	1st	2/1	Novák
Physics (SjF)	1st	2/0	Novák
Physics (SjF)	1st	2/2	Novák
Physics (SjF)	1st	2/0	Novák
Physics (SvF)	1st	2/2	Kovaľaková
Physics (SvF)	2nd	2/2	Kovaľaková
Physics I (SvF)	1st	2/2	Kovaľaková
Physics I (FEI)	1st	2/2	Hlaváčová Kaššovicová Olčák, Gibová
Physics I (FEI, in English)	1st	2/2	Hlaváčová Kravčák
Physics (FEI)	2nd	3/2	Hlaváčová Kaššovicová Olčák, Gibová
Physics (FEI, in English)	2nd	3/2	Hlaváčová
Physics Fundamentals (HF)	2nd	4/3	Ziman

Physics Fundamentals (HF)	2nd	3/0	Kladivová
Physics II (SvF)	2nd	2/1	Kovaľaková
Physics II (SjF)	2nd	2/2	Novák
Physics II (SjF)	2nd	2/0	Kecer
Physics II (FBERG)	3rd	2/2	Jelšovská
Physics II (FBERG)	3rd	3/0	Jelšovská
Physics Seminar (HF)	2nd	0/2	Kladivová
Physics Seminar (FEI)	2nd	0/2	Ševčovič
Experimental Methods of Materials Study (FEI)	3rd	2/2	Hronský
Electromagnetism and Optics (FEI)	2nd , 3rd	3/2	Ziman, Lisý

4.2 Graduate Study (Ing.)

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Physics 2 (FBERG)	1st	2/2	Lisý, Jelšovská
Physics 3 (FBERG)	1st	2/2	Jelšovská
Physics 2 (FBERG)	1st	2/0	Jelšovská
Selected Topics in Modern Physics (FEI)	1st	2/2	Hlaváčová
Nuclei and Particles (FEI)		2/2	Hlaváčová
Physics (HF)	1st	3/2 and 4/3	Ziman
Physics (HF)	1st	2/0 and 3/0	Kladivová
Theory of Electromagnetic Field (FEI)	1st	2/2	Kaššovicová
Solid State Physics (FBERG)	1st	2/2	Hronský
Modern Magnetic Materials (FEI)	1st	2/2	Novák

5 RESEARCH PROJECTS

- ***Anomalous effects in the rheology of polymer liquids***, S.G.A. project No. 1/0300/09, Principal investigator: prof. RNDr. V. Lisý, DrSc.
- ***Structure of amorphous ferromagnetic materials and their selected magnetic properties***, S.G.A. project, No. 1/10136/10, Principal investigator: doc. RNDr. J. Ziman, CSc.
- ***Completion of building up of a modern nuclear magnetic resonance laboratory*** - Research and development project No 2003SP200280203 of a state thematic program of research and development " Complex Solution of Support and Effective Use of Science and Research Infrastructure" Co-ordinator of the project: doc. Ing. Tibor Liptaj, CSc., STU in Bratislava, Co-ordinator for TU in Košice: doc. RNDr. D. Olčák, CSc.
- ***The logistics system for mining enterprise of 21st century,*** S.G.A. project No. 1/4186/07, Principal investigator: doc. Ing. J. Spišák, PhD. (F BERG, TU Košice), collaborators: K. Jelšovská
- ***The logistics system of crisis situations in mining***, S.G.A. project No. 1/0267/08 Principal investigator: prof. Ing. M. Petruf, PhD. (F BERG, TU Košice), collaborators: K. Jelšovská
- ***Scouting and Education Talents in Physics by Physics Competitions on the Elementary and Secondary Schools,*** S.R.D.A. Project No. LPP-0067-07 Principal investigator: prof. Ing. Ivo Čáp, CSc., University of Žilina,

co-operating organization: Technical University of Košice, collaborators: L.Mucha, M. Kladivová

- ***Evaluation of home natural resources of alumosilicates (clinoptilolite) for water treatment***, S.G.A. project No. 1/0193/09, Principal investigator: Prof. RNDr. E. Chmielewská, CSc. (Faculty of Science, Comenius University in Bratislava), collaborators: M. Kovaľaková
- ***Revealing Microworld Mysteries through Experimental Data Analysis,*** S.R.D.A. project No. LPP-005-09 Principal investigator: RNDr. A. Dirner, CSc., Faculty of Science, Pavol Jozef Šafárik University in Košice, co-operating organisation: Technical University of Košice, collaborators: J. Hlaváčová, M. Kovaľaková, M. Kravčíková, Z.Gibová
- ***Cooperative phenomena and phase transitions in nanosystems with perspective applications in nano- and biotechnology***, Agency of the Ministry of Education, Science, Research and Sport of the Slovak Republic for the Structural Funds of EU, project No. 26220120021, Principal investigator: doc. RNDr. Peter Kopčanský, CSc. (Institute of Experimental Physics, SAS Košice), collaborators: V. Lisý
- ***Completion of building of the centre for cooperative phenomena and phase transitions in nanosystems with perspective applications in nano- and biotechnology***, Agency of the Ministry of Education, Science, Research and Sport of the Slovak Republic for the Structural Funds of EU, project No. 26220120033, Principal investigator: doc. RNDr. Peter Kopčanský, CSc. (Institute of Experimental Physics, SAS Košice), collaborators: J. Tóthová, V. Lisý
- ***Package of innovative features for education reform at TUKE,*** *ITMS* project No. 26110230018, Principal investigator: prof. Ing. Pavel Raschman, CSc., Technical University of Košice, collaborators: J. Ziman, J. Onufer, J. Kecer, Z. Gibová, O. Fričová, D. Olčák
- ***Centre of Excellence of the Integrated Research & Exploitation of the Advanced Materials and Technologies in the Automotive Electronics***, ITMS project No. 26220120055, Principal investigator: prof. Ing. Alena Pietriková, PhD., Technical University of Košice, department coordinator: D. Olčák, collaborators: P. Duranka, O. Fričová, V. Hronský, J. Kaššovicová, J. Kecer, M. Kladivová, M. Kovaľaková, J. Kravčák, L.Novák, J. Ziman
- ***Progressive constructions and technologies in transportation engineering***, Slovak Research and Development Agency, project No. SUSPP-0013-09, Principal investigator: doc. Ing. Jan Mandula, PhD., Technical University of Košice, collaborator: M. Kovaľaková
- ***Development of progressive technologies for utilization of selected waste materials in road construction engineering***, Agency of the Ministry of Education, Science, Research and Sport of the Slovak Republic for the Structural Funds of EU, ITMS project No. 26220220051, Principal investigator: doc. Ing. Jan Mandula, PhD., Technical University of Košice, collaborators: J. Hlaváčová, M. Kovaľaková
- ***New detection methods and technologies for acquiring non-conventional energy resources of the Earth***, ITMS project No. 26220220031, Principal investigator: prof. Ing. Juraj Janočko, CSc., Dr.Scient., FBERG, Technical University of Košice, collaborator: M. Rybárová

- ***Research Centre of the efficiency of combined force integration of renewable energy systems,*** ITMS project No. 26220220064, Principal investigator: prof. Ing. Juraj Sinay, DrSc., Technical University of Košice, collaborator: M. Rybárová

6 CO-OPERATION

6.1 Co-operation in Slovakia

- Institute of Physics, Faculty of Science, P. J. Šafárik University in Košice
- Institute of Experimental Physics of the Slovak Academy of Sciences, Košice
- Polymer Institute, Slovak Academy of Sciences, Bratislava
- Research Institute for Man-Made Fibers in Svit
- Faculty of Chemical and Food Technology, Slovak University of Technology, Bratislava

6.1.1. Visitors to the Department

- Dr. Lovas, A., Budapest University of Technology and Economics, Hungary
- Dr. Gábor Tarkányi, Institute of Structural Chemistry, Chemical Research Center, Hungarian Academy of Sciences, Budapest, Hungary
- Dr. Vadim Zorin, Agilent Technologies, Magnetic Resonance Systems, Oxford, United Kingdom
- RNDr. Jiří Spěváček, DrSc., Institute of Macromolecular Chemistry, Academy of Sciences of the Czech Republic, Prague, Czech Republic

6.2 International Co-operation

- Institute of Macromolecular Chemistry, Academy of Sciences of the Czech Republic, Prague, Czech Republic
- Central Physical Research Institute, RMKI KFKI, Budapest, Hungary
- Budapest University of Technology and Economics, Hungary
- Institute of Physics, A. Mickiewicz University, Poznan, Poland

6.3 Membership in International Organizations and Societies

- Mucha, Ľ.: member of the Board of the International Physics Olympiad
- Lisý, V.: member of the American Physical Society and the Institute of Physics (UK).

6.4 Membership in Slovak Organizations and Societies

- Gibová, Z.: member of the Slovak Physical Society (SFS)
- Hronský, V.: member of SFS and the Slovak Magnetic Society (SMAGS)
- Jelšovská, K.: member of SFS
- Kecer, J.: member of SMAGS
- Kladivová, M.: member of the Slovak Physics Olympiad, SFS, and SMAGS
- Kovaľaková, M.: member of SFS
- Kravčák, J.: member of SFS, treasurer of SMAGS
- Kravčíková, M.: member of SFS
- Lisý, V.: Scientific Grant Agency of the Slovak Republic, member of the joint commissions for the doctoral studies in Biophysics, and in General Physics

and Mathematical Physics (both at the P.J. Šafárik University in Košice and the Comenius University in Bratislava), member of the Working Group for Physics of the Accreditation Commission Counselling Body of the Government of the Slovak Republic, member of the permanent commission for the awards of DrSc. degrees in Condensed Matter Physics and Acoustics, member of SFS

- Mucha, Ľ.: vice-president of the Slovak Physics Olympiad, member of SFS
- Novák, L.: member of SFS and SMAGS
- Olčák, D.: member of SFS and SMAGS
- Onufer, J.: member of SFS and SMAGS
- Tóthová, J.: member of SFS
- Zagyi, B.: member of SFS and SMAGS
- Ziman, J.: member of SFS and vice-chairman of SMAGS

7 PUBLICATIONS

7.1 Books

[1] RYBÁR, Pavol - HAMRÁK, Henrich - KOŠČO, Ján - DOMARACKÁ, Lucia - DOMARACKÝ, Dušan - RYBÁROVÁ, Mária: **Polymetalické konkrécie, bohatstvo na dne morí a oceánov** - 1. vyd - Košice : TU, FBERG - 2011. - 257 s.. - ISBN 978-80-553-0326-0.

7.2 Journals

[1] TÓTHOVÁ, Jana - VASZIOVÁ, Gabriela - GLOD, Lukáš - LISÝ, Vladimír: **Langevin theory of anomalous Brownian motion made simple** In: European Journal of Physics. Vol. 32, no. 3 (2011), p. 645-655. - ISSN 0143-0807 Spôsob prístupu: *stacks.iop.org/EJP/32/645; http://iopscience.iop.org/0143-0807/32/3/002*.

[2] STEPHAN ET AL, E. - KISTRYN, St. - KALANTAR-NAYESTANAKI, N. - BIEGUN, A. - BODEK, K. - CIEPAL, I. - ESLAMI-KALANTARI, M. - JHA, V. - KIRILLOV, Da. - KIRILLOV, Di. - KIS, M. - KLICZEWSKI, St. - KLOS, B. - KOZELA, A. - KRAVČÍKOVÁ, Mária - KYRYANCHUK, V. M. - LESIAK, M. - MACHNER, H. - MAGIERA, A. - MAHJOUR-SHAFIEI, M. - MARTINSKÁ G. - MESSCHENDORP, J. - MICHENDZIRSKA, A. - PISKUNOV, N. - PROTIC, D. - RAMAZANI, A. - VON ROSEN, P. - ROY, B. J. - SAKAI, H. - SEKIGUCHI, K. - SITNIK, I. - SIUDAK, R. - SWORST, R. - URBAN, J. - ZEJMA, J. - ZIPPER, W.: **Three-nucleon interaction dynamics studied via the deuteron-proton breaup** In: International Journal of Modern Physics A. Vol. 26, no. 3 & 4 (2011), p. 725-727. - ISSN 0217-751X Spôsob prístupu: *www.worldscinet.com/ijmpa*.

[3] ZIMAN, Ján - ONUFER, Jozef - KLADIVOVÁ, Mária: **Domain wall dynamics and Hall effect in eddy current loop in amorphous ferromagnetic wire with small helical anisotropy** In: Physica B : Condensed Matter. Vol. 406, no. 19 (2011), p. 3576–3582. - ISSN 0921-4526 Spôsob prístupu: *http://www.sciencedirect.com/science*.

[4] ZIMAN, Ján - ONUFER, Jozef - KLADIVOVÁ, Mária: **DC magnetization processes in bistable glass-coated ferromagnetic microwires** In: Journal of Magnetism and Magnetic Materials. Vol. 323, no. 23 (2011), p. 3098–3103. - ISSN 0304-8853 Spôsob prístupu: *http://www.sciencedirect.com/*.

[5] TÓTHOVÁ, Jana - VASZIOVÁ, Gabriela - LUKÁŠ, Glod - LISÝ, Vladimír: **A note on ´Langevin theory of anomalous Brownian motion made simple´** In:

European Journal of Physics. Vol. 32, no. 6 (2011), p. L47 - L49. - ISSN 0143-0807 Spôsob prístupu: *http://iopscience.iop.org/0143-0807/32/6/L04*.

[6] HUTNÍK, Ondrej - HUTNÍKOVÁ, Mária: **On Toeplitz localization operators** In: Archiv der Mathematik. Vol. 97, no. 4 (2011), p. 333-344. - ISSN 0003-889X Spôsob prístupu: *http://www.springerlink.com/content/c319660452430x42/*.

[7] ILKOVIČ, Vladimír - KECER, Ján: **The Reorientation Temperature in an Antiferromagnetic Monolayer** In: Acta Physica Polonica. Vol. 118, no. 5 (2011), p. 854-855. - ISSN 0587-4246 Spôsob prístupu: *http://przyrbwn.icm.edu.pl/APP/PDF/118/a118z5p057.pdf*.

[8] ILKOVIČ, Vladimír - KECER, Ján: **Magnetic reorientation in a ferrimagnetic monolayer** In: Physica Status Solidi B-Basic Solid State Physics. DOI 10.1002/pssb.201147180 (2011), p. 1-4. - ISSN 0370-1972 Spôsob prístupu: *http://onlinelibrary.wiley.com/doi/10.1002/pssb.201147180/abstract*.

[9] TÓTHOVÁ, Jana - LISÝ, Vladimír: **Langevin-Vladimirsky approach to Brownian motion with memory** In: Diffusion Fundamentals. Vol. 15, no. 5 (2011), p. 1-10. - ISSN 1862-4138 Spôsob prístupu: *http://www.uni-leipzig.de/diffusion/journal/index.html*.

[10] KUDELAS, Dušan - ŠTRBA, Ľubomír - DOMARACKÝ, Dušan - RYBÁROVÁ, Mária: **Fyzikálne modelovanie prieniku roztavenej horniny do radiálnych trhlín v modelovom prostredí** In: Mineralia Slovaca. Roč. 43, č. 3 (2011), s. 338-340. - ISSN 1338-3523

7.3 Other publications

Publication Type	Articles on Internet	Conference Papers		Conference Abstracts		Textbooks
		Foreign	Home	Foreign	Home	
Number	3	3	18	2	3	1

DEPARTMENT OF CYBERNETICS AND ARTIFICIAL INTELLIGENCE

http://www.tuke.sk/kkui/
Tel./Fax: ++421 55 625 3574

Head of Department
prof. Ing. Ján Sarnovský, CSc.
E-mail: Jan.Sarnovsky@tuke.sk

1 DEPARTMENT'S PROFILE

The Department (DCAI) is responsible for education in the following bachelor study programs: Cybernetics, Intelligent Systems, and Business informatics; in the following master study programs: Cybernetics and Information-Control Systems, Artificial Intelligence, Business Informatics; and following PhD-study programs: Cybernetics and Information-Control Systems, Artificial Intelligence, and Business Informatics.

The main research topics at the Department are intelligent methods and

algorithms for control and modeling of large-scale systems; risk-sensitive diagnosis of uncertain systems; computational intelligence techniques for modeling of intelligent systems and miscellaneous applications; intelligent decision support systems; pattern recognition; knowledge discovery; knowledge technologies for information retrieval and knowledge management; business information systems; and computational and cognitive neuroscience.

The predecessor of the Department was founded in 1964. Department of Cybernetics and Artificial Intelligence was adapted in 1989. Currently it has 21 staff members, 28 internal and 15 external Ph.D. students. There are 3 sections within the department: Cybernetics and Automation, Artificial Intelligence, and Business Informatics. Within the Department there are active two research Centers: Centre for Cybernetics (http://cybernetics.fei.tuke.sk/cybervirtlab/) and Centre for Intelligent Technologies (www.ai-cit.sk).

The Department is involved in a number of research and educational projects. The following types of projects were under way in 2011: 1 European IST project, 1 Socrates thematic network, 1 US National Institutes of Health research project, 3 grants awarded by the Science Grant Agency, 2 grants awarded by the Slovak Research and Development Agency, 5 grants awarded by Cultural and Educational Grant Agency, 3 other international grants and 1 project supported by the Research & Development Operational Programme funded by the ERDF.

2 STAFF

Professors:	prof. Ing. Dušan Krokavec, CSc. Dr.h.c. prof. Ing. Ladislav Madarász, CSc. prof. RNDr. Eva Ocelíková, CSc. prof. Ing. Ján Paralič, PhD. prof. Ing. Tomáš Sabol, CSc. prof. Ing. Ján Sarnovský, CSc. prof. Ing. Peter Sinčák, CSc. prof. Ing. Iveta Zolotová, CSc.
Associate Professors:	doc. Ing. Anna Filasová, CSc. doc. Ing. Anna Jadlovská, PhD. doc. Ing. Ján Jadlovský, CSc. doc. Ing. Norbert Kopčo, PhD. doc. Ing. Marián Mach, CSc. doc. Ing. Kristína Machová, CSc.
Assistant Professors:	Ing. František Babič, PhD. Ing. Marek Bundzel, PhD. Ing. Karol Furdík, PhD. Dr. Ing. Vratislav Hladký Ing. Rudolf Jakša, PhD. Ing. Ján Liguš, PhD. Ing. Martin Sarnovský, PhD. Dr. Ing. Ján Vaščák
Researchers:	Ing. Rudolf Andoga, PhD. Ing. Ladislav Főző, PhD. Ing. Stanislav Laciňák, PhD.
Technical Staff:	Mária Feješová

Tatiana Baňasová

Ph.D. Students:

	Internal	External
1st.	Ing. Vladimír Gašpar Ing. Slávka Jadlovská Ing. Lukáš Laciňák Ing. Alexandra Lukáčová Ing. Anton Molčan Ing. Martin Paľa Ing. Peter Papcun Ing. Vladimír Serbák Ing. Ján Štofa	Ing. Mousa Younes Alfitorey Ing. Adrián Dringuš Ing. Marek Duľa Ing. Róbert Fónod Ing. Nikola Kabakov Ing. Jan Liguš Ing. Peter Szabó
2nd.	Ing. Matej Čopík Ing. Štefan Jajčišin Ing. Mgr. Peter Koncz Ing. Roman Mihaľ Ing. Adela Tušanová Ing. Mária Virčíková	
3rd.	Ing. Daniel Gontkovič Ing. Rastislav Hošák Ing. Ján Ilkovič Ing. Ján Kažimír Ing. Tomáš Karoľ Ing. Gabriel Lukáč Ing. Miloš Pavlík Ing. Martin Repka Ing. Peter Smolár Ing. Peter Šuster Ing. Beáta Tomoriová Ing. Attila Török Ing. Jaroslav Tuhársky	Ing. Stanislav Dvorščák Ing. Peter Kubičko Ing. Jaroslav Tuhársky
4th.		Ing. Marián Stanislav
5th.		Ing. Juraj Koščák Ing. Jozef Kováč RNDr. Marcel Kudláč Ing. Viliam Ročkai

3 LABORATORIES

- Centre for Intelligent Technologies: Laboratory of Autonomous Systems (LAS-CIT), Laboratory of Humanoid Robots (LHR-CIT) http://www.ai-cit.sk
- Centre of Cybernetics (L-513) http://cybervirtlab.fei.tuke.sk/CyberVirtLab/, http://web.tuke.sk/kybernetika/labaky/L513/
- Laboratory of Intelligent Information and Control Systems (L-535), http://web.tuke.sk/kybernetika/labaky/L535.html
- Laboratory of Distributed Control Systems - ROCKWELL AUTOMATION LABORATORY (L-536), http://web.tuke.sk/kybernetika/labaky/L536.html
- Laboratory of intelligent control systems of aircraft engines (in cooperation

with Faculty of Aeronautics) http://lirslm.fei.tuke.sk
- Laboratory of Knowledge Technologies (V-101a) https://hi.fei.tuke.sk/portal/?q=node/100#v101a
- Laboratory of Business processes (B11) https://hi.fei.tuke.sk/portal/?q=node/100#b11
- Laboratory of Intelligent Control Networks (L-509), http://web.tuke.sk/kybernetika/labaky/L509.html
- Laboratory of Computer Control Systems Design (V101b), http://kyb.fei.tuke.sk/Laboratoria/miest/V101b.htm
- Laboratory of Robotics (V134) http://kyb.fei.tuke.sk/Laboratoria/miest/V134.htm
- Laboratory of Mechatronics Systems (V142) http://kyb.fei.tuke.sk/Laboratoria/miest/V142.htm
- Laboratory of Process Control (V144) http://kyb.fei.tuke.sk/Laboratoria/miest/V144htm
- Laboratory of Production Lines and Image Recognition (V147) http://kyb.fei.tuke.sk/Laboratoria/miest/V147.htm
- Perception and Cognition Laboratory (V-31) http://pcl.tuke.sk

4 TEACHING

4.1 Undergraduate Study (Bc.)

Subject	Semester	Lectures/exercises (hours per week)	Name of lecturer
Computers and Algorithms	2nd	2/2	Jadlovská, Jadlovský
Introduction to Business Informatics	2nd	2/2	Paralič, J.
Elements of Control Systems	2nd	2/2	Hladký
Artificial Intelligence	2nd	2/2	Machová, Paralič
Simulation systems in Business Informatics	2nd	2/2	Jadlovská, Hladký
Foundations of Automatic Control	3rd	2/2	Madarász
Simulation Systems	3rd	2/2	Jadlovská
Artificial Intelligence	3rd	2/2	Sinčák, et al.
Knowledge-Based Systems	3rd	2/2	Machová
Office Information Systems	3rd	1/2	Zolotová
Applications of Operation Systems in Management	3rd	2/2	Liguš
Application Programming	3rd	2/2	Jakša
Analyses and design of Information Systems	4th	1/1	Sarnovský M., Babič
Control of Technological Processes	4th	2/2	Liguš
Control and Visualization Systems	4th	2/2	Zolotová
Identification and Modeling	4th	2/2	Filasová
Linux I.	4th	2/2	Jakša
Computer Tools for Technological Systems Control	4th	2,2	Jadlovský
Applications of Artificial Intelligence	4th	0/2	Sinčák
Scheduling and Logistics	4th	2/2	Paralič
Application programming	4th	0/2	Jakša
Computer (Based) Control	5th	2/2	Krokavec
Database Management System	5th	2/2	Ocelíková

Applications			
Protocols and Interfaces	5th	2/2	Jadlovský
Project Management	5th	2/2	Sabol
Introduction to Neurosciences	5th	2/2	Kopčo
Cybernetics and Management	6th	2/2	Sarnovský
System Analysis and Synthesis	6th	2/2	Madarász
Effective and financial management	6th	2/2	Babič
Heuristic Optimization Processes	6th	2/2	Mach

4.2 Graduate Study (Ing.)

Subject	Semester	Lectures/exercises (hours per week)	Name of lecturer
Optimal and Nonlinear Systems	1st	2/2	Jadlovská, A.
Computer Vision	1st	2/2	Tomori
Intelligent Control Networks	1st	2/2	Liguš
Knowledge Management	1st	2/2	Paralič, J.
Information Systems for Business Processes	1st	2/2	Zolotová
Discrete-time Systems	1st	3/2	Krokavec, D.
Theoretical Foundations of Artificial Intelligence	1st	2/2	Sinčák
Symbolic Artificial Intelligence	1st	2/2	Mach
IT Environment Control	1st	2/2	Sarnovský M., Furdík
Online Identification	1st	2/2	Krokavec
Logic Control	1st	2/2	Liguš
Distributed Control Systems	2nd	2/2	Jadlovský
Control and Artificial Intelligence	2nd	2/2	Jadlovská
Robust Control	2nd	2/2	Filasová
Evolutionary Algorithms	2nd	2/2	Mach
Multicriterial Decision Making	2nd	2/2	Ocelíková
Machine Learning	2nd	2/2	Machová
Logic Programming	2nd	1/1	Paralič
Stochastic Systems	2nd	2/2	Krokavec, D.
Fuzzy Decision	2nd	2/2	Vaščák
Complexity and Decision Making	2nd	2/2	Madarász
Engineering econometrics	2nd	2/2	Krokavec
Speech Recognition	2nd	2/2	Krokavec, D.
Intelligent Sensor Systems	2nd	2/2	Krokavec, D.
Interactive Systems	2nd	2/1	Jakša
Integrated manufacturing systems	3rd	3/2	Madarász
Humanoid Technologies	3rd	2/2	Jakša
Dynamic Systems Diagnostics	3rd	2/2	Krokavec, D.
Complex Systems Control	3rd	2/2	Hladký
LISP Applications	3rd	0/2	Mach
Management Information Systems	3rd	2/2	Jadlovský
Complexity and Decision Making	3rd	2/2	Madarász
Semantic Technologies	3rd	2/2	Machová
Neuro-fuzzy Systems	3rd	2/2	Vaščák
Cybernetics	3rd	2/2	Sarnovský
Knowledge Discovery	3rd	2/2	Paralič
Philosophic Problems of Cybernetics and AI	4th	2/2	Sarnovský
Repetition of AI Foundations	4th	0/2	Sinčák
AI Applications Seminar	4th	2/2	Sinčák

5 RESEARCH PROJECTS

- ***Knowledge Practices Laboratory (KP-Lab)*** is an integrated project funded by the European Commission within the IST Program (6th Framework Program) IST-2000-29207, coordinator: University of Helsinki. Duration: 2006-2011, Team members from DCAI: Ján Paralič (team leader), František Babič, Peter Bednár, Karol Furdík, Jozef Wagner, Gabriel Tutoky. Activity: KP-Lab is an ambitious project that focuses on developing a learning system aimed at facilitating innovative practices of sharing, creating and working with knowledge in education and workplaces. KP-Lab presents a unifying view of human cognition. It is based on the assumption that learning is not just individual knowledge acquisition or social interaction, but shared efforts of transforming ideas and social practices. The objective of the KP-Lab project is to develop theories, tools, and practical models to elicit deliberate advancement and the creation of knowledge, as well as the corresponding transformation of knowledge practices in education and workplaces. The essential way of developing the collaborative technologies is through a co-evolutionary process involving researchers, technological developers and users. Web page: http://www.kp-lab.org
- ***Prediction and detection methods of significant and hazardous meteorological phenomena based on meteorological data mining*** (project lead by MicroStep_MIS, Bratislava). Slovak Research and Development Agency, project no. VMSP-P-0048-09, duration: 2009 – 2011, members: Ján Paralič (project leader for TUKE), Peter Bednár, František Babič, František Albert, Jozef Kováč, Karol Furdík. Activities: This project provided interesting, contributions to the research of parametrized models and methods for detection and prediction of significant meteorological phenomena, especially fog and low cloud cover. The project covered methods for integration of distributed meteorological data necessary for running the prediction models, training models and then mining the data in order to be able to efficiently and quickly predict even sparsely occurring phenomena. The detection and prediction methods are based on knowledge discovery – data mining of meteorological data using neural networks and decision trees. The mined data were mainly METAR aerodrome messages, meteorological data from specialized stations and cloud data from special airport sensors – laser ceilometers. The business partner of this DMM consortium will use the generated models within already developed and operationally running products.
- ***Cognitive travelling in digital space of the Web and digital libraries supported by personalized services and social networks*** (project lead by FIIT STU Bratislava). Slovak Research and Development Agency, project no. APVV-0208-10, duration: 2011 – 2014, members: Ján Paralič (project leader for TUKE), Peter Butka, Peter Koncz, František Babič, Gabriel Tutoky. Activities: The metaphor of cognitive travelling in the digital space describes a (curious) user who moves in the web or libraries. Travelers leave traces in digital space – evaluations, recommendations, annotations etc. They communicate with others forming communities of shared interests. Users learn more if the information is suitably presented or visualized. Designed and implemented models and prototypes of web services will

make use of descriptions of semantics of a given domain, documents and user profile (ontologies, folksonomies). Methods will include both targeted search (e.g. query enrichment or reformulation before submitting to search engines, discovering users' specific needs) and also an exploratory search (browsing information sources without having a precise goal). This research contributes to shifting from providing documents in response to a query to providing answers.

- ***Dynamic hybrid architectures in multiagent network control systems*****,** Scientific Grant Agency project No. 1/0286/11, duration: 2011 – 2013, members: Ján Sarnovský (project leader), Ján Liguš, Vratislav Hladký, Ján Jadlovský, Anna Jadlovská, Iveta Zolotová, Eva Ocelíková, Jana Ligušová, Marek Duľa, Peter Karch, Ján Kažimír, Stanislav Laciňák, Rastislav Hošák, Peter Šuster, Slávka Jadlovská, Peter Papcun, Anton Molčan and Lukáš Laciňák. Activities: The project aims to research methods and algorithms for decision making and management of automatic control systems using the paradigm of hybrid approaches to managing complex systems utilizing methods of artificial intelligence. A tighter focus of the project is research, development and implementation of algorithms and methods for managing multi-agent network management systems (MANMS), where particular agents of MASRS cooperate and communicate via Wifi stochastic communication network. Based on MASRS modeling and formalizing of control processes will be further developed specific algorithms for optimal reconfiguration of MASRS architecture, taking into account redundancy to achieve the best quality of control for the selected MANMS configuration. When designing the control algorithms theoretical knowledge of cybernetics and information theory will be used with application of Ashby´s law of requisite Variety. The project is also intended to formalize the design of control algorithms and design of dynamic network architectures of industrial network management systems, which will be verified in the lab as well as in practice, in cooperation with the U. S. Steel Košice, Cybernetics Ltd., Košice and MDJ Ltd., Košice.
- ***Integrated design of reconfigurable control structures and embedded diagnostics***, Scientific Grant Agency project No. 1/0256/11, duration: 2011 – 2013, members: Dušan Krokavec (project leader), Filasová Anna, Hladký Vratislav, and Daniel Gontkovič. Activity: The project is focused on design of fault-tolerant control systems (FTCS). The basic research is fundamental part of the project, which is driven for active FTCS with embedded diagnosis in suitable reconfigurable structures, undertaken in performance of the fault detector embedded in the control loop, and constructed in the framework of the integrated design. The focal scientific points of the project are dedicated to development of new design algorithms guarantying stability of fault-tolerant systems and optimized with respect to conflicting requirements among stability, redundancy, and graceful performance degradation; the terminal scientific objectives are dedicated to residual signals embedded in the control loop, with explicit consideration on residual decoupling and evaluation, reconfiguration control methods, as well as to appropriate procedures associated with decoupling of interacting multiple control structures.
- ***Methods for identification, annotation, search, access and composition of services using semantic metadata in support of selected process***

types, Scientific Grant Agency project No. 1/0042/10, duration: 2010 – 2011, members: Marian Mach (project leader), Paralič Ján, Babič František, Furdík Karol, Sarnovský Martin, Wagner Jozef, Machová Kristína, Lukáč Gabriel. Activities: The project is focused on using semantic metadata to describe services in a way suitable for semantic processing. Activities will target mainly the importance of semantics within different phases of service life-cycle – from identifying services in processes and describing them through searching and accessing services to composing services into workflows. Attention will be paid to different service types including web services, services provided by human actors or electronic devices, and grid services. In connection with services, the project focuses on specific process types. One of these process types is text mining remarkable by considerable time complexity and strong dependence on employed data sets. Another process type is represented by new knowledge creation processes characterised by an occurrence of implicit knowledge practices. The last type of processes, the realisation of workflows in a grid environment, strongly depends on a distribution of tasks among available processing nodes.

- ***Utilisation of intelligent methods for control and modeling of aircraft engines in educational process***, Cultural and Educational Grant Agency project No. 001 – 010 TUKE4/2010, duration: 2010-2012, project leader: Ladislav Madarász. The aim of the project is to create a platform for the use of small turbojet engines in the Laboratory of Intelligent control systems of aircraft engines outside the frame of the ongoing research for educational purposes. This project will be oriented on the following areas of education: the area of digital acquisition of operating parameters of the engine in real-time, the area of basic analysis and visualization of the obtained data, visualization and creation of basic models and demonstration of control algorithms. Because the small turbojet engines have similar characteristics as normal engines they are appropriate objects for demonstration of characteristics of real engines, modern methods of measurement of extreme parameters, algorithms of modeling and control.

- ***Cybernetic education center.*** Cultural and Education Grant Agency Project No. 037-011TUKE-4/2010, duration 2010 – 2012, members: Iveta Zolotová (project leader), Ján Sarnovský, Eva Ocelíková, Ján Jadlovský, Anna Jadlovská, Vratislav Hladký, Ján Liguš, Jana Ligušová, Stanislav Laciňák, Ladislav Takáč, Marek Duľa, Ľuboš Popovič, Oľga Duľová, Peter Karch, Richard Lonščák, Rastislav Hošák, Miloš Pavlík, Roman Mihaľ. Activities: The project focuses on creating cybernetic education center, which will promote research and development of education sphere in the Cybernetics and Automation section and related sections within the department, based on the latest technologies. The center will integrate and develop existing education and training portals and distributed laboratories with the objective to achieve synergy effect. It will include functionalities like a modeling and control of real and simulated dynamic systems, accessing electronic educational materials of selected courses from the Cybernetics section or e-testing of students' knowledge. Designed center, especially its brand new central portal, will include also features of adaptive web based on the neural networks with Hebbian learning rules. Project will be compatible with the European project Enhanc-Life-Long-Learning-EIE Community.

- ***Virtual laboratory for business information systems***, Cultural and Educational Grant Agency project No. 065TUKE-4/2011, duration: 2011 - 2013, members: Ján Paralič (project leader), František Babič, Kristína Machová, Martin Sarnovský, Karol Furdík, Peter Butka, Peter Bednár, Gabriel Tutoky, Jozef Wagner, Adela Tušanová, Peter, Koncz, Alexandra Lukáčová, Ján Štofa. Activity: This project focuses on development and implementation of supporting on-line tools for education of selected courses in Business information systems at the Technical University in Košice. For this purpose there will be designed and implemented elektronic educational materials for particular courses, as well as suitable electronic services for active participation of students in virtual learning environment (including social network support and analysis), as well as methodology for Web based Training.
- ***Development of a Modern University Textbooks for a Core Units of the Newly Trasformed Study Programme Cybernetics and Information Control Systems***, Cultural and Educational Grant Agency project No. 034TUKE-4/2011, duration: 2011–2013, members: Anna Jadlovská (project leader), Ján Sarnovský, Iveta Zolotová, Ján Jadlovský, Zoltán Tomori, Vratislav Hladký, Ján Liguš, Stanislav Laciňák, Ľuboš Popovič, Ladislav Takáč, Peter Šuster, Matej Čopík, Štefan Jajčišin, Slávka Jadlovská, Anton Molčan. Activity: The objective of the project is the preparation, design and implementation of a number of modern university textbooks, the content of which will be methodically processed using the current level of knowledge in the discipline of "cybernetics" and oriented on the core units of the newly-transformed study program "Cybernetics and information-control systems" at the second (master) study degree. The project research team considers the existence of high-quality textbooks as an important basis for mastering the subjects at the second degree of studies. The textbooks will be accompanied by a set of solved and unsolved problems intended to be processed into functions, program modules and/or application libraries using an appropriately chosen programming environment (Matlab/Simulink, CPN Tools, Microsoft Visual Studio 2008 SQL Developer, Rockwell Automation software). The said problems can be addressed while solving individual tasks, assignments and semester projects, not least in the research, which takes place at the workplace of the project research team.
- ***Cognitive science – Middle European cross-disciplinary master study program***, Cultural and Educational Grant Agency project No. 3/7300/09, duration: 2009-2011, members: Norber Kopčo, Beata Tomoriová; Jan Rybár, Igor Farkaš, Comenius University Bratislava, Peter Sýkora, University of Constantine and Methodus, Trnava activity: Creation of a joint interdisciplinary Masters program of Cognitive science in collaboration with universities in the central-European region (Vienna, Budapest, Ljubljana, Zagreb).
- ***Perceptual, Contextual, and Cross-Modal Learning in Hearing and Vision***. The European Community's 7FP/2007-13 grant no GA-2009-247543 (Marie Curie program for Research Staff Exchange) PI Norbert Kopčo, staff Rudolf Andoga, Beáta Tomoriová. Collaboration with University of California, Boston University, Martinos Center/Harvard Medical School.
- ***Co-funding grant for Perceptual, Contextual, and Cross-Modal***

Learning in Hearing and Vision. Slovak Research and Development Agency Project, No. PP7RP-0027-09. PI Norbert Kopčo, staff Rudolf Andoga, Beáta Tomoriová. Reimbursement grant for the costs of grant preparation for successful applicants for EU research grants.

- ***Development of the Centre of information and communication technologies for knowledge-based systems***, project No. 26220120030 supported by the Research & Development Operational Programme funded by the ERDF, duration: 2010 - 2013.

6 CO-OPERATION

6.1 Co-operation in Slovakia

- Department of Automatic Control Systems Bratislava, Slovak University of Technology, Bratislava
- Institute of Intelligent Systems, Faculty of Informatics, Slovak University of Technology, Bratislava
- Institute of Computer Science, Slovak Academy of Sciences in Bratislava
- Department of Biophysics IEP Slovak Academy of Science
- Institute of Computer Science, University of P.J. Šafárik, Košice
- Economic University, Faculty of Business Economics, Košice
- Institute of Experimental Physics, Slovak Academy of Sciences
- Department of applied informatics (Centre for Cognitive Science), Faculty of Mathematics, Physics and Informatics, Comenius University, Bratislava
- Košice self-governing region
- Local Authority City Ward Ťahanovce, Košice
- The City of Košice
- Tatrabanka, a.s.
- IT Valley Kosice

6.2 International Co-operation

- The Open University, Knowledge Media Institute, United Kingdom
- University of Vaasa, Finland
- Helsinki University of Technology, Dipoli, Finland
- Department of Software Engineering and Interactive Systems, Vienna University of Technology, Austria
- University of Regensburg, Germany
- Hearing Research Center and Dept. of Cognitive and Neural Systems, Boston University, USA
- Center for Cognitive Neuroscience and Department of Psychology, Duke University
- Institute of Pathological Physiology, 1st Faculty of Medicine, Charles University, Prague
- Budapest Computational Neuroscience Group, Department of Biophysics, Hungarian Academy of Sciences
- Department of Psychology, University of California at Riverside
- Harvard Medical School – Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Boston, USA
- University of Dortmund, Germany
- Waseda University, Tokyo, Japan

- Technical University of Czestochowa
- Tokyo Institute of Technology, Japan
- Kuyshu Institute of Technology, Japan
- Université Joseph Fourier Grenoble, IUT 1 (Institut Universitaire de Technologie 1), Grenoble, France
- Heudiasyc UMR CNRS 6599, UTC, Compiegne, France
- Université Henri Poincaré, Laboratoire CRAN (Centre de Recherche en Automatique de Nancy), Nancy 1, France
- Department of Informatics, Technical University, Ostrava, Czech Republic
- Department of Control Systems and Instrumentation, Faculty of Mechanical Engineering Technical University of Ostrava, Czech Republic
- Department of Cybernetics, Czech Technical University Prague, Czech Republic
- Department of Control Engineering, Czech Technical University, Prague, Czech Republic
- Institute of Information Theory and Automation, Academy of Sciences of Czech Republic, Prague, Czech Republic
- Department of Information Engineering, Faculty of Economics and Management, Czech University of Agriculture, Prague, Czech Republic
- University of Hradec Králové, Czech Republic
- Faculty of Mechanical Engineering, Department of Automation, Institute of Information, University of Miskolc, Hungary
- Óbuda University, Budapest, Hungary
- Budapest University of Technology and Economics, Hungary
- California Institute of Technology, Jet Propulsion Laboratory (Dr. Antal, K. Bejczy), USA, California
- Hungarian Academy of Sciences, Computer and Automation Research Institute, Hungary (prof. Gyorgy Kovács)
- Regional Association of the Hungarian Academy of Sciences, Miskolc, Hungary
- Austrian Academy of Sciences, Acoustics Research Institute (Bernhard Laback)
- Auditory Neuroscience Group, Department of Physiology, University of Sydney

6.3 Membership in International Organizations and Societies

- Jakša, R.: IEEE, Computational Intelligence Society
- Karch, P.: EAEEIE – European Association for Education in Electrical and Information Engineering
- Kopčo, N.: Association for Research in Otolaryngology, Acoustical Society of America, Society for Neuroscience
- Krokavec, D.: Member of the International Federation of Automatic Control IFAC Technical Committee TC 1.4 Stochastic Systems
- Liguš, J.: EAEEIE – European Association for Education in Electrical and Information Engineering
- Madarász, L.: Doctor honoris causa, University of Miskolc (2009)
- Madarász, L.: Honorary professor, Óbuda University Budapest, Hungary (2009)
- Madarász, L.: Honorary Member of the Board of Hungarian Academy of Sciences (2000)

- Madarász, L.: Chairmanship member of the Technical Section, Association of Hungarian Professors (2001)
- Madarász, L.: Honorary Professor, Bánky Donát Polytechnic, Budapest, Hungary (1999)
- Madarász, L.: Membership of Associate Editors, Acta Polytechnica Hungarica, Budapest Tech, Hungary (2004)
- Madarász, L.: Honorary Membership in Hungarian Fuzzy Association, Budapest Hungary (2002)
- Madarász, L.: American Biographical Institute, Gold Record of Achievement, Control of Large Scale Systems, USA (1997)
- Madarász, L.: The American Biographical Institute, The Research Board of Advisors (1996)
- Madarász, L.: Honorary Fellow of micro'CAD The Univesity of Miskolc (2005)
- Ocelíková, E.; Sinčák, P.; Zolotová, I.: CPRS - Czech Pattern Recognition Society
- Ocelíková, E.: CSSS - Czech and Slovak Society for Simulation
- Machová, K.: ACM – Association of Computer Machinery
- Paralič, J.: ACM – Association of Computer Machinery, IEEE
- Sabol, T.: Information Society Technologies Program Committee (IST PC), 5th Framework Program, Brussels
- Sarnovský, J.: IEEE
- Sarnovský, J.: INES - International Network of Engineers and Scientists for Global Responsibility
- Sarnovský, J.: Principia Cybernetica Web PRNCYB-L
- Sarnovský, J.: SWIIS - Suplementary Ways for Improving International Stability
- Sinčák P.: European Society of Neural Networks
- Sinčák P.: IEEE, Computational Intelligence Society
- Vaščák, J.: IEEE, Computational Intelligence Society
- Zolotová, I.: IEEE, Education Society
- Zolotová, I.: EAEEIE – European Association for Education in Electrical and Information Engineering

6.4 Membership in Slovak Organizations and Societies

- The whole Department of Cybernetics and Artificial Intelligence is a team member of:
  - Slovak Society for Cybernetics and Informatics
  - Slovak AI Society
- Filasová, A.: Slovak Society for Cybernetics and Informatics
- Krokavec, D.: Slovak Electrical Engineering Society
- Krokavec, D.: Scientific Grant Agency of Slovak Republic
- Krokavec, D.: Member of the Editorial Board of the Journal AT&P, Bratislava
- Madarász, L.: Member of the Editorial Board of the Journal AT&P, Bratislava
- Madarász, L.: Slovak Society for Cybernetics and Informatics
- Madarász, L.: Member of the Editorial Board of the Journal Transfer Inovácií, Faculty of Mechanical Engineering (2006)
- Madarász, L.: Member of the Editorial Board of the Acta Polytechnica Hungarica, Budapest Tech, Hungary (2006)
- Jadlovská, A; Ocelíková, E.; Sarnovský, J.: Slovak Society for Cybernetics

and Informatics
- Paralič, J.: Slovak Society for Computer Science
- Sabol, T.: Board of the Open Society Fund, Bratislava
- Zolotová, I.: Slovak Research and Development Agency

6.5 International Networks and Exchange Programs

- EIE-Surveyor, REFERENCE POINT FOR ELECTRICAL AND INFORMATION ENGINEERING IN EUROPE, Project Nr. ELLEIEC-1428414-LLP-1-2008-FR-ERASMUS-ENW, Project funded by the European Commission (SOCRATES Thematic Network), Contact person: Ján Liguš
- Socrates - Erasmus agreement between TU of Košice and Czech University of Life Sciences, Prague, Czech Republic. Contact person: Eva Ocelíková
- Socrates - Erasmus agreement between TU of Košice and Université Henri Poincaré, Nancy 1, France, Contact person: Ján Sarnovský
- Socrates - Erasmus agreement between TU of Košice and University Hradec Kralove, Czech Republic. Contact person: Ján Vaščák
- Socrates - Erasmus agreement between TU of Košice and Univesite de Technologie Compiegne, France, Contact person: Ján Liguš
- Socrates - Erasmus agreement between TU of Košice and Institut Universitaire de Technologie 1 de Grenoble 1, France, Contact person: Jana Ligušová

7 THESES

Thesis type	Bachelor	Master	Doctoral
Number	176	107	5

8 OTHER ACTIVITIES

- 9th Slovak – Hungarian Joint Symposium on applied Machine Intelligence (SAMI 2011 - http://www.sami.tuke.sk/) has been organized in Smolenice, Slovakia, January 27-29
- 6th Workshop on intelligent and knowledge oriented technologies (WIKT 2011 – http://www.tuke.sk/fei-cit/wikt2011/) has been organized in Herľany, Slovakia, November 24-25

9 PUBLICATIONS

9.1 Books

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[2] LAZAR, Tobiáš - MADARÁSZ, Ladislav - ANDOGA, Rudolf - BUČKO, Marián - FŐZŐ, Ladislav - HOCKO, Marián - JUDIČÁK, Jozef - KABÁT, Ján - KAROĽ, Tomáš - MODROVIČOVÁ, Jana - NOVÁK, Branislav: Inovative outputs from the transformed experimental laboratory with a small turbojet engine (in Slovak). Košice: elfa, 2011, 348 p. ISBN 978-80-8086-170-4
[3] FILASOVÁ, Anna - KROKAVEC, Dušan: Design principles of active robust fault tolerant control systems. In: Robust Control, Theory and Applications. - Rijeca: InTech - Open Access Publisher, 2011, p. 309-338. ISBN 978-953-307-229-6

[4] FURDÍK, Karol - SABOL, Tomáš - HREŇO, Ján - BEDNÁR, Peter - LUKÁČ, Gabriel - MACH, Marián: A Platform for Semantically Enhanced Business Collaboration of Networked Enterprises. In: Introduction to the Semantic Web: Concepts, Technologies and Applications. Hong Kong: iConcept Press, 2011 p. 121-144. ISBN 978-0-9807330-1-3
[5] FILASOVÁ, Anna - KROKAVEC, Dušan: Partially decentralized design principle in large-scale system control. In: Recent Advances in Robust Control - Novel Approaches and Design Methods. Rijeka: InTech, 2011 p 361-388. ISBN 978-953-307-339-2
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[7] KOPČO, Norbert: Computational Neuroscience: Introduction to modeling of neurophysiological and behavioral data (in Slovak). 1st edition, Košice: TU - 2011. 66 p. ISBN 978-80-553-0816-6
[8] SARNOVSKÝ, Ján: Cybernetic world (in Slovak). 4. reworked edition. Košice: Elfa, 2011, 180 p. ISBN 978-80-8086-183-4

9.2 Journals

[1] VLADO, Martin - BIDULSKÝ, Róbert - GULOVÁ, Lucia - MACHOVÁ, Kristína - BIDULSKÁ, Jana - VALÍČEK, Ján - SAS, Ján: The Production of Cracks Evolution in Continuously Cast Steel. In: High Temperature Materials and Processes. Vol. 30, no. 1-2 (2011), p. 105-111, ISSN 0334-6455
[2] JADLOVSKÁ, Anna - HRUBINA, Kamil: Algorithms of Optimal Control Methods for Solving Game Theory problems. In: Kybernetes. Vol. 40, no. 1-2 (2011), p. 290-299, ISSN 0368-492X
[3] PARALIČ, Ján - RICHTER, Christoph - BABIČ, František - WAGNER, Jozef - RAČEK, Michal: Mirroring of knowledge practices based on user-defined patterns. In: The Journal of Universal Computer Science. Vol. 17, no. 10 (2011), p. 1474-1491, ISSN 0948-695X
[4] BEST, Virginia - CARLILE, Simon - KOPČO, Norbert - VAN SCHAIK, Andre: Localization in speech mixtures by listeners with hearing loss. In: Journal of the acoustical society of America. Vol. 129, no. 5 (2011), p. EL210-EL215. ISSN 0001-4966
[5] KOPČO, Norbert - SHINN-CUNNINGHAM, Barbara: Effect of stimulus spectrum on distance perception for nearby sources. In: Journal of the acoustical society of America. Vol. 130, no. 3 (2011), p. 1530-1541, ISSN 0001-4966
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[9] TUŠANOVÁ, Adela - PARALIČ, Ján: Improving of company's

competitiveness by means of Internet and social networks (in Slovak). In: Systems Integration. Vol. 18, no. 2 (2011), p. 137-145, ISSN 1210-9479

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[28] POPOVIČ, Ľuboš - SARNOVSKÝ, Ján - HLADKÝ, Vratislav: Laws of information in decentralized control systems. In: Acta Electrotechnica et Informatica. Vol. 11, No. 2 (2011), p. 3-10, ISSN 1335-8243
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[30] JADLOVSKÝ, Ján - LACIŇÁK, Stanislav - ČOPÍK, Matej - ILKOVIČ, Ján: Technological level of flexible manufacturing system control. In: Acta Electrotechnica et Informatica. Vol. 11, No. 1 (2011), p. 20-24, ISSN 1338-3957
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[32] SARNOVSKÝ, Ján: Theory of Crisis Control (in Slovak). In: ATP Journal. No. 10 (2011), p. 11-11, 1335-2237
[33] GONTKOVIČ, Daniel - FÓNOD, Róbert: Control and Stability Analyzing of the Time-Delay Systems with Time-Varying Delays. In: Acta Electrotechnica et Informatica. Vol. 11, No. 3 (2011), p. 70-74, ISSN 1335-8243
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[35] JADLOVSKÁ, Anna: Algorithms of Optimal Control Methods for Nonlinear Systems with Constrains. In: Industrial Engineering. No. 4 (2011), p. 34-39, ISSN 1335-7972
[36] FILASOVÁ, Anna - KROKAVEC, Dušan: Bounded real lemma improved forms. In: ATP Journal plus. Č. 2 (2011), p. 29-33, ISSN 1336-5010
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9.3 Other publications

Publication Type	Confereces		Other
	Foreign	Home	
Number	42	86	3

DEPARTMENT OF MATHEMATICS AND THEORETICAL INFORMATICS

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KMTI
KATEDRA MATEMATIKY A TEORETICKEJ INFORMATIKY

1 DEPARTMENT'S PROFILE

Department of Mathematics and Theoretical Informatics, before 1981 Department of Mathematical Informatics, was founded in 1969. The activities of the teachers are oriented to the mathematical research and education. The main educational goal is to prepare undergraduate students during the first two years of study in the following courses: Differential and integral calculus; Theory of complex variable functions; Ordinary differential equations; Qualitative theory of differential equations; Linear algebra; Mathematical statistics; Laplace, Fourier, and Z-Transformations; Numerical methods; Discrete mathematics and Mathematical modelling, Coding theory, Algorithms and complexity. In addition to the basic courses, the programs of the courses for graduate study were adjusted in co-operation with special departments. Members of the department prepared new lectures on various topics of applied mathematics for graduate study and for PhD students, such as Algorithms and complexity, Theory of queues, Fuzzy sets, Selected topics from mathematics, Financial mathematics, Optimization methods, Solving ill-posed problems. Since 2008 the Department offers its own study programme Computer modelling. This is focused on computer-aided mathematical simulation of diverse problems.

Present research projects of the Department of Mathematics and Theoretical Informatics are oriented on the next problems:

- Asymptotic properties of higher order functional differential equations
- The study of the scaling laws in nonlinear systems and in the developed turbulence using renormalization group methods
- Algebraic structures and graph algorithms in max-plus and max-min algebras
- Topological graph theory – crossing numbers of graphs
- E-learning of mathematical subjects

2 STAFF

Professors:
prof. RNDr. Jozef Džurina, CSc.
prof. RNDr. Ján Plavka, CSc.

Associate Professors:
doc. RNDr. Marián Klešč, PhD.
doc. RNDr. Viktor Pirč, CSc.

Assistant Professors:
RNDr. Blanka Baculíková, PhD.
RNDr. Štefan Berežný, PhD.
RNDr. Ján Buša, CSc.
Mgr. Ján Buša, PhD.
RNDr. Ivan Daňo, PhD.
RNDr. Emília Draženská, PhD.
RNDr. Anna Grinčová, PhD.
RNDr. Renáta Komariková, PhD.
RNDr. Daniela Kravecová, PhD.
RNDr. Monika Molnárová, PhD.
RNDr. Helena Myšková, PhD.
PhDr. Eva Ostertagová, PhD.
Mgr. Ján Pribiš, PhD.
RNDr. Štefan Schrötter, CSc.
RNDr. Michal Staš, PhD.

Technical Staff: Mária Schrötterová

The Department consists of two parts:

- Division of Mathematical Analysis and Discrete Mathematics
- Division of Applied Mathematics

3 LABORATORIES

- Laboratory of Mathematical and Computing Modelling

4 TEACHING

4.1 Undergraduate Study (Bc.)

Subject	Semester	Lectures/exercises (hours per week)	Name of lecturer
Mathematics I.	1st	3/3	Klešč, Kravecová, Daňo, Baculíková
Mathematics I.	1st	4/3	Molnárová,
Mathematics I. (English)	1st	3/3	Berežný
Continuous Optimization Methods	2nd	3/3	Džurina
Numerical Methods	2nd	2/0	Berežný
Algorithms and Complexity	2nd	2/2	Plavka
Numerical Methods, Probability and Statictic	2nd	3/2	Daňo, Buša Jr., Klešč, Pribiš, Draženská
Mathematics III. (English)	2nd	3/2	Berežný
Numerical Methods, Probability	2nd	2/0	Myšková

and Statictic			
Applications of Differential Equations	2nd	2/2	Džurina
Graph Algorithms and Discrete Optimization	2nd	2/2	Schrötter
Mathematics II.	3rd	3/3	Ostertagová, Pribiš
Mathematics II. (English)	3rd	3/3	Plavka
Mathematics II.	3rd	2/2	Grinčová
Discrete Mathematics	3rd	3/3	Schrötter
Theory of Coding	3rd	2/2	Kravecová
Mathematical Logic	3rd	3/2	Draženská, Myšková
Discrete Mathematics and Logic	3rd	2/0	Schrötter
Linux I	3rd	2/2	Valo
Operation Analysis	4th	2/2	Kravecová
Typographical System TEX	4th	0/2	Buša Jr.
Algorithms and Complexity	4th	2/2	Plavka
Computer-aided Mathematical Simulation	5th	3/2	Džurina
Financial Mathematics	6th	2/2	Pirč
Typographical System TEX	6th	2/1	Buša Jr.

4.2 Graduate Study (Ing.)

Subject	Semester	Lectures/exercises (hours per week)	Name of lecturer
Differentional Equations and Variational Calculus	7th	2/2	Džurina
Applied Mathematics	7th	3/2	Klešč
Optimization Methods	7th	2/2	Buša
Theory of Coding	7th	2/2	Plavka
Physical Processes Modelling	7th	2/2	Buša
Queueing Theory	7th	2/2	Berežný
Mathematical Methods for Neural Networks and Time Series	7th	2/2	Pirč, Plavka, Daňo
Selected Topics on Mathematics	7th	2/2	Pirč
Applied Mathematics	8th	2/2	Džurina
Applied Statistic	8th	2/2	Ostertagová
Discrete Dinamic Systems	8th	2/2	Molnárová

5 RESEARCH PROJECTS

- ***Crossings in non-planar graphs***, VEGA Slovak Grant Agency No. 1/0309/11, duration 2011-2013, co-ordinator: Marián Klešč.
- ***Two textbooks for first and second level for study program Computer Modelling.*** KEGA Slovak Grant Agency No. 3/7353/09, duration 2009-2011, co-ordinator: Ivan Daňo.
- ***E-learningová a softvérová podpora výučby matematických predmetov na TUKE a vybranej strednej škole*.** KEGA Slovak Grant Agency No. 019-025TUKE-4/2010, duration 2010-2011.

6 CO-OPERATION

6.1 Co-operation in Slovakia

The members of department work in the main research projects described above and they are involved in research projects at other institutions:

- Faculty of Science UPJŠ, Košice
- Faculty of Mathematics, Physics and Informatics UK, Bratislava
- Special Departments of FEI TU, Košice
- Institute of Experimental Physics of Slovak Academy of Sciences, Košice
- Faculty of Natural Science, Žilina

6.1.1. Visitors to the Department

- Dr. Edik Hayryan, Joint Institute for Nuclear Research, Dubna, Russia
- Dr. Alexander Ayriyan, Joint Institute for Nuclear Research, Dubna, Russia
- Prof. Marie Demlová, Czech Technical University in Prague, Czech Republic
- Prof. Vasile Berinde, North University of Baia Mare, Baia Mare, Romania
- Dr. Valdemar Melicher, Ghent University, Ghent, Belgium
- Dr. Shura Hayryan, Institute of Physics, Academia Sinica, Taipei, Taiwan
- Prof. Chin-Kun Hu, Institute of Physics, Academia Sinica, Taipei, Taiwan
- Dr. Ming-Chya, Institute of Physics, Academia Sinica, Taipei, Taiwan

6.2 International Co-operation

- Technical University in Graz, Austria
- Charles University in Prague, Czech Republic
- University of Birmingham, United Kingdom
- UHK in Hradec Králové, Czech Republic
- Ioaninna University, Greece
- Veszprem University, Hungary
- North University of Baia Mare, Romania
- JINR Dubna, Russia
- Institute of Physics, Academia Sinica, Taiwan
- Ghent University, Belgium

6.2.1. Visits of Staff Members to Foreign Institutions

- Berežný, Š.: ČVUT, Prague, Czech Republic
- Berežný, Š.: North University of Baia Mare, Romania
- Buša, J.: North University of Baia Mare, Romania
- Buša Jr. J.: North University of Baia Mare, Romania
- Buša Jr., J.: Institute of Physics, Academia Sinica, Taipei, Taiwan
- Džurina, J.: North University of Baia Mare, Romania
- Kravecová, D.: North University of Baia Mare, Romania
- Molnárová, M.: UHK Hradec Králove, Czech Republic
- Molnárová, M.: North University of Baia Mare, Romania
- Ostertagová, E.: North University of Baia Mare, Romania
- Staš, M.: North University of Baia Mare, Romania

6.3 Membership in International Organizations and Societies

- Buša, J.: Czechoslovak TeX Users Group (CSTUG)
- Buša Jr., J.: Czechoslovak TeX Users Group (CSTUG)
- Klešč, M.: American Mathematical Society

6.4 Membership in Slovak Organizations and Societies

- Baculíková, B.: Slovak Mathematical Society
- Berežný, Š.: Slovak Mathematical Society
- Buša, J.: Slovak Mathematical Society
- Buša, J: Committee for the Cooperation of the Slovak Republic with JINR, Dubna
- Daňo, I.: Slovak Mathematical Society
- Draženská, E.: Slovak Mathematical Society
- Džurina, J.: Slovak Mathematical Society
- Grinčová, A.: Slovak Mathematical Society
- Klešč, M.: OK 9-1-6 Discrete Mathematics
- Klešč, M.: Slovak Mathematical Society
- Kravecová, D.: Slovak Mathematical Society
- Molnárová, M.: Slovak Mathematical Society
- Pirč, V.: Slovak Mathematical Society
- Plavka, J.: OK 9-1-6 Discrete Mathematics
- Schrötter, Š.: Slovak Mathematical Society

6.5 Contracts, International Scientific Projects

- CEEPUS – partner in CEEPUS II program CII-HU-0028-03-0910/M/35079 - Active Methods in Teaching and Learning Mathematics

7 THESES

Thesis type	Bachelor	Master	Doctoral
Number	9	0	1

8 OTHER ACTIVITIES

8.1 Workshops:

- Buša, J. – Schrötter, Š.: 12-th Conference of Košice Mathematicians, April 2011, Herľany, co-organisers
- Schrötter, Š.: Workshop Cycles and Colourings, Nový Smokovec, September 2011, co-organiser
- Buša, J. – Buša Jr., J. – Schrötter, Š.: International Conference Mathematical Modeling and Computational Physics, July 4-8, 2011, Stará Lesná, High Tatra Mountains, Slovakia, co-organisers

8.2 Study tours:

- Pribiš, J.: JINR Dubna, Russia

9 PUBLICATIONS

9.1 Books

[1] BAČA, Martin – BUŠA, Ján – FEŇOVČÍKOVÁ, Andrea – KIMÁKOVÁ, Zuzana – OLEKŠÁKOVÁ, Denisa – SCSRÖTTER, Štefan: Zbierka riešených a neriešených úloh z matematiky pre uchádzačov o štúdium na TU v Košiciach. 1. vyd. Košice: TU 2011, 157 s. ISBN 978-80-553-0813-5.
[2] DAŇO, Ivan – OSTERTAGOVÁ, Eva: Numerické metódy, pravdepodobnosť a matematická štatistika. Teória, riešené príklady a praktické aplikácie s MATLABom. 2. doplnené vyd., Košice: EQUILIBRIA 2011, 198 s. ISBN 978-80-89284-74-0.
[3] DAŇO, Ivan - OSTERTAGOVÁ, Eva – PRIBIŠ, Ján: Matematické metódy pre neurónové siete a časové rady. 1. vyd. Košice: Equilibria 2011, 121 s. ISBN 978-80-89284-96-2.
[4] DRAŽENSKÁ, Emília – MYŠKOVÁ, Helena: Matematická logika. Košice: EQUILIBRIA 2011, 97 s. ISBN 978-80-89284-90-0.
[5] DŽURINA, Jozef – PIRČ, Viktor: Calculus 2. Košice: ELFA 2011, 108 s. ISBN 978-80-8086-178-0.
[6] OSTERTAGOVÁ, Eva: Aplikovaná štatistika. Košice: Elfa 2011, 161 s. ISBN 978-80-8086-171-1.
[7] PRIBIŠ, Ján: Úvod do matematickej logiky a teórie množín. 1. vyd., Košice: TU 2011, 81 s. ISBN 978-80-553-0772-5.

9.2 Journals

[1] AGARWAL, R. P. - BACULIKOVÁ, B. – DŽURINA, J. – Li, T.: Oscillation of third order nonlinear functional differential equations with mixed arguments. In: Acta Mathematica Hungarica. Vol. 133, no. 1 (2011), p. 1-14.
[2] ANDREJIVOVÁ, M. – BEREŽNÝ, Š. – BUŠA, J.: Analysis of Time Variations of Flights at Košice Airport in The Years 2006-2009 for Selected Airline Companies. In: Acta Avionica. Vol. 13, no. 21 (2011), p. 104-110.
[3] BACULIKOVÁ, B.: Properties of third-order nonlinear functional differential equations with mixed arguments. In: Abstract and Applied Analysis. Vol. 2011, doi : 10.1155 (2011), p. 1-15.
[4] BACULIKOVÁ, B. – DŽURINA, J.: Comparison theorems for the third-order delay trinomial differential equations. In: Advances in Difference Equations:. Vol. 2010 (2010), p. 1-12.
[5] BACULIKOVÁ, B. – DŽURINA, J.: Oscillation theorems for second order neutral differential equations. In: Computers and Mathematics with Applications. Vol. 61, no. 1 (2011), p. 94-99.
[6] BACULIKOVÁ, B. – DŽURINA, J.: Oscillation of third-order nonlinear differential equations. In: Applied Mathematics Letters. Vol. 24, no. 4 (2011), p. 466-470.
[7] BACULIKOVÁ, B. – Li, T. – DŽURINA, J.: Oscillation theorems for second order neutral differential equations. In: Electronic Journal of Qualitative Theory of Differential Equations. no. 74 (2011), p. 1-13.
[8] DAŇO, I. – TANCSÁKOVÁ, M.: Continuous-time neurodynamical system. In: Transfer inovácií. Vol. 16 (2010), p. 265-267.
[9] DRAŽENSKÁ, E.: The crossing number of $G \square C_n$ for the graph G on six vertices. In: Mathematica Slovaca. Vol. 61, no. 5 (2011), p. 675-686.
[10] DRAŽENSKÁ, E. – KLEŠČ, M.: On the crossing numbers of $G \square C_n$ for graphs G on six vertices. In: Discussiones Mathematicae Graph Theory. Vol.

31, no. 2 (2011), p. 239-252.
[11] DŽURINA, J.: Oscillation theorems for second order advanced neutral differential equations. In: Tatra Mountains. Vol. 48 (2011), p. 61-79.
[12] DŽURINA, J. – KOMARIKOVÁ, R.: Asymptotic Properties of the Third-Order Delay Trinomial Differential Equations. In: Abstract and Applied Analysis. Vol. 2011 (2011), Article ID 730128, p. 1-10.
[13] GAVALEC, M. – MOLNÁROVÁ, M.: Computation of the Second Maximum Path Weight in a Max-Plus Matrix. In: Acta Electrotechnica et Informatica. Vol. 11, no. 3 (2011), p. 51-56.
[14] KLEŠČ, M. – SCHRÖTTER, Š.: The crossing numbers of join products of paths with graphs of order four. In: Discussiones Mathematicae Graph Theory. Vol. 31, no. 2 (2011), p. 321-331.
[15] KOVÁČ, J. – OSTERTAGOVÁ, E.: Aplikácia morfologických metód pri výbere druhu montážneho systému. 1 elektronický optický disk (CD-ROM). In: Strojárstvo Extra. č. 5 (2011), s. 3/1-3/3.
[16] LI. T. - BACULIKOVÁ, B. – DŽURINA, J.: Oscillation results for second order neutral differential equations of mixed type. In: Tatra Mountains. Vol. 48 (2011), p. 101-116.
[17] LI. T. – ZHANG, C. - BACULIKOVÁ, B. – DŽURINA, J.: On the oscillation of third-order quasi-linear delay differential equations. In: Tatra Mountains. Vol. 48 (2011), p. 117-123.
[18] OSTERTAG, O. - OSTERTAGOVÁ, E. – MORAVIČ, M.: Riešenie pružného uloženia pojazdu mechanizmu. In: Transfer inovácií. č. 19 (2011), s. 257-258.
[19] OSTERTAGOVÁ, E.: Aplikácia exponenciálneho vyrovnávania časových radov. In: Transfer inovácií. č. 19 (2011), s. 68-70.
[20] OSTERTAGOVÁ, E.: Aplikácia Pearsonovho testu dobrej zhody v technickej praxi. In: Transfer inovácií. č. 19 (2011), s. 267-268.
[21] OSTERTAGOVÁ, E. - KOLESÁR, Š.: Analýza ekonomického časového radu s cieľom vytvorenia vhodného predikčného modelu. Transfer inovácií, č. 21/2011, s. 221 – 223. ISSN 1337-7094.
[22] PLAVKA, J. – SZABO, P.: On the λ-robustness of matrices over fuzzy algebra. In: Discrete Applied Mathematics. Vol. 159, no. 5 (2011), p. 381-388.
[23] STAŠ, M.: The Regularity Properties on The Real Line. In: Acta Universitatis Carolinae: Mathematica et Physica Supplementum. Vol. 51, no. 1 (2010), p. 73-82.

9.3 Other publications

Publication Type	Confereces		Other
	Foreign	Home	
Number	17	24	2

DEPARTMENT OF COMPUTERS AND INFORMATICS

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1 DEPARTMENT´S PROFILE

Department of Computers and Informatics (DCI) has been a principal body of the Faculty of Electrical Engineering and Informatics (FEI) conducting the process of education and scientific research in the area of Computer science and engineering (CSE) since 1989. DCI is one of two successors of the former Department of Technical Cybernetics at the FEI.

Education at DCI covers all forms of university studies in CSE and DCI grants bachelor (Bc), master (Ing) and doctoral (PhD) degree in CSE.

DCI consists of 5 laboratories:

- Informatics and Computer Languages Laboratory
- Software Engineering Laboratory
- Information Systems Laboratory
- Computer Networks Laboratory
- Computer Architectures and Security Laboratory

DCI programs enrollment counts approx. 720 students in bachelor and 300 students in master programs. Number of doctoral students studying towards PhD degree is more than 60.

The graduates can work as system engineers, specialists for development, installation and maintenance of the information systems and technologies in wide spectrum of applications, designers of the computer systems, specialists dealing with research, development and operation of computer systems and their components.

Scientific research at DCI covers following fields:

- formal methods for design and analysis of discrete systems,
- programming paradigms and theory of programming,
- parallel and distributed programming, real time systems,
- methods, tools and methodologies of analysis and design of software systems,
- computer graphics and virtual reality systems,
- agent and service-based technologies for design and implementation of distributed software systems,
- modeling and simulation of systems,
- advanced database and information technologies,
- information systems security,
- e-learning systems, intelligent tutoring systems,
- parallel architectures for specialized high performance computer systems,
- theory of design of MIMD computer architecture - data-flow,
- computer networks and advanced network infrastructures,
- transfer of the multimedia nature information with the required quality of services parameters, effective methods of quality service property parameters assessment,
- implementation of the powerful streaming technologies in the IP network environment,
- videoconference solution and voice services of the new generation,
- monitoring, control and visualization of topologies in LAN and WAN,
- virtual communication infrastructures and their use in practical, e-learning technologies and their solutions.

2 STAFF

Professors:
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doc. Ing. František Jakab, PhD.
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Ing. Miroslav Biňas, PhD.
Ing. Peter Feciľák, PhD.
Ing. Juraj Giertl, PhD.
Ing. Milan Hauliš
Ing. Katarína Kleinová, PhD.
Ing. Štefan Korečko, PhD.
Ing. Branislav Madoš, PhD.
Ing. Daniel Mihályi, PhD.
Ing. Marek Paralič, PhD.
Ing. Ondrej Pločica, PhD.
Ing. Martin Révés, PhD.
Ing. Viliam Slodičák, PhD.
Ing. Csaba Szabó, PhD.
Ing. Igor Sivý, CSc.
Ing. Viliam Slodičák, PhD.
Ing. Slavomír Šimoňák, PhD.
Ing. Stanislav Šuba
Ing. Henrieta Telepovská, PhD.
Ing. Martin Tomášek, PhD.
Ing. Peter Václavík, PhD.

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Ing. Martin Révés, PhD.

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Roman Ivančík
Ivana Macková
Jozef Šefčík
Helena Švarcová

Ph.D. Students:
Internal form:

Ing. Michal Augustín
Ing. Michaela Bačíková (Kreutzová)
Ing. Dávid Cymbalák
Ing. Marek Čajkovský
Ing. Eva Danková
Ing. Marek Domiter
Ing. Michal Ennert
Ing. Peter Fanfara
Ing. Peter Gábor
Ing. Ivan Halupka
Ing. František Hrozek
Ing. Róbert Hužvár
Ing. Sergej Chodarev
Ing. Peter Jakubčo
Ing. Jozef Janitor
Ing. Martin Kapa
Ing. Ivan Klimek
Ing. Dominik Lakatoš
Ing. Martina Ľaľová
Ing. Pavol Macko
Ing. Marián Mižík
Ing. Milan Nosáľ
Ing. Marek Novák
Ing. Adrián Pekár
Ing. Emília Pietriková
Ing. Tomáš Poklemba
Ing. Miroslav Sabo
Ing. Ivan Šestina
Ing. Iveta Tonhauserová (Adamuščínová)
Ing. Martin Varga
Ing. Milan Vrábeľ
Ing. Ľubomír Wassermann
Ing. Wasim Zahra
Ing. Jana Zimanová
Ing. Peter Žársky

External form:

Ing. Gabriel Bocek
Ing. Jozef Doboš
Ing. Ľuboš Dúbravec
Ing.Marek Dufala
Ing. Vratislav Fabián
Ing. Milan Hauliš
Ing. Rudolf Holodňák
Ing. Radovan Janošo
Ing. Marián Jenčík
Ing. Marián Keltika
Ing. Miloš Očkay
Ing. Ivan Peťko
Ing. Igor Petz
Ing. Ondrej Pločica
Ing. Ján Polák
Ing. Peter Prazňák
Ing. Štefan Sinčák
Ing. Kristián Šesták
Ing. Peter Špireng
Ing. Stanislav Šuba

Ing. Michal Kohut
Ing. Lukáš Mikula
Ing. Marcel Mojžiš
Ing. Matej Lakatoš
Ing. Juraj Vízi
Ing. Otto Železník
Ing. Marián Želinský

3 LABORATORIES

- *Laboratory of Inteligent Interfaces for Information and Communication Systems (LIRKIS)*
- *Computer Networks Laboratory (www.cnl.sk)*
- *Computer Architectures and Security Laboratory*
- *Operating Systems Laboratory*
- *Software Engineering Laboratory*
- *Information Systems Laboratory*
- *Informatics and Computer Languages Laboratory*
- *Administration and Operational Support*

4 TEACHING

4.1 Undergraduate Study (Bc.)

Subject	Semester	Lectures / exercises (hours per week)	Name of Lecturer
Introduction to Programming and Networks	1st	3/2	Sobota, Paralič, Korečko, Slodičák
Assembler	2nd	2/2	Šimoňák
Principles of Computer Engineering	2nd	2/2	Vokorokos
Programming	2nd	3/2	Paralič, Tomášek, Szabó
Object-Oriented Programming	3rd	2/2	Tomášek
Formal Languages and Compilers	3rd	2/2	Kollár
Theoretical Foundations of Informatics	3rd	2/2	Hudák, Tomášek
Data Structures and Algorithms	3rd	2/2	Šimoňák
OS Linux Administration I.	3rd	0/2	Biňas
Database Systems	4th	2/2	Telepovská
Operating Systems	4th	2/2	Sivý
Computer Networks	4th	2/2	Jakab
Programming in .NET Environment	4th	2/2	Václavík
Java Technologies	4th	2/2	Porubän
Security in Computer Systems	4th	2/2	Vokorokos, Baláž
Documentation in Informatics	4th	0/3	Šujanský
OS Linux Administration II.	4th	0/2	Biňas
Bachelor Project	5th	0/6	Novitzká
Logical Systems	5th	3/3	Bača
Computer Graphics	5th	3/2	Šujanský
Fundamentals of Software Engineering	5th	2/2	Havlice
Distributed Programming	5th	2/2	Paralič
Application of the Network Technologies	5th	2/2	Giertl
Principles of Programming Languages	6th	3/2	Kollár

Subject	Semester	Lectures / exercises (hours per week)	Name of Lecturer
Bachelor Thesis	6th	0/9	Kollár
Aspect-oriented Programming	6th	2/2	Václavík
Internet Security	6th	2/2	Vokorokos, Baláž
Technologies of IS Development I.	6th	2/2	Havlice

4.2 Graduate study (Ing.)

Subject	Semester	Lectures / exercises (hours per week)	Name of Lecturer
Compilers Design	1th	3/2	Havlice
Composition of Computers	1th	3/2	Vokorokos
Theoretical Informatics	1th	3/2	Hudák
Type Theory	1th	2/2	Novitzká
Database Administration	1th	2/2	Telepovská
Modeling and Simulation	1th	2/2	Šujanský
Design of Digital Systems	1th	1/3	Bača
Advanced Database Technologies	1th	2/2	Genči
Web Technologies	1th	2/2	Porubän
Technologies of IS Development II	1th	0/3	Telepovská
OpenView and HP UNIX Administration	1th	2/2	Baláž
Modeling and Generation of Software Architectures	2nd	2/2	Kollár
Semestral Project	2nd	0/5	Kollár
Semantics of Programming Languages	2nd	3/2	Novitzká
Diagnostics and Reliability	2nd	2/2	Bača
Formal Specifications of Systems	2nd	3/2	Hudák
Logics for Informaticians	2nd	2/2	Novitzká
Peripheral Devices and Connection to Environment	2nd	2/2	Vokorokos, Jadlovský
Virtual Reality Systems	2nd	2/2	Sobota
Technologies of Software Projects-I	2nd	2/2	Havlice
Routing Algorithms in Computer Networks	2nd	2/2	Genči
Security in Computer Systems	3rd	2/2	Vokorokos, Baláž
Diploma Project	3rd	0/8	Kollár
Parallel Programming	3rd	2/2	Kollár
Software Quality and Management	3rd	2/2	Samuelis
Parallel Computer Systems	3rd	3/2	Vokorokos, Ádám
Designing of Computer Networks	3rd	2/2	Giertl
Technologies of Software Projects-II	3rd	0/2	Szabó
Knowledge-based Systems	3rd	3/2	Sivý
Medical Informatics	3rd	2/0	Zorkovský, Tumidalský
Diploma Thesis	4th	0/18	Kollár

4.3 Undergraduate and Graduate Study for Foreign Students (In English Language)

All subjects listed in the table above are offered also in English language for foreign students.

5 RESEARCH PROJECTS

List of current research and educational projects:

- ***Centre of Information and Communication Technologies for Knowledge Systems***, Research and Development Operational Programme funded by the ERDF No. 26220120020, duration: 2009-2011
- ***Development of Centre of Information and Communication Technologies for Knowledge Systems***, Research and Development Operational Programme funded by the ERDF No. 26220120030, duration: 2010-2013
- ***IT4KT – Information Technologies for Knowledge Transfer***, Research and Development Operational Programme funded by the ERDF No. 26220220123, duration: 2010-2013
- ***Co-evolution of the Artifacts Written in Domain-specific Languages Driven by Language Evolution*** VEGA No. 1/0305/11, duration: 2011-2013, coordinator: doc. Ing. Jaroslav Porubän, PhD.
- ***Principles and Methods of Semantic Enrichment and Adaptation of Knowledge-based Languages for Automatic Software Development***, VEGA No. 1/0015/10, duration: 2010-2011, coordinator: prof. Ing. Ján Kollár, CSc.
- ***Modeling and Simulation of Security Attacks in Distributed Computing Environments and Networks***, VEGA No. 1/0026/10, duration: 2010–2011, coordinator: prof. Ing. Liberios Vokorokos, PhD.
- ***Tasks Solution for Large Graphical Data Processing in the Environment of Parallel***, ***Distributed and Network Computer Systems***, VEGA No. 1/0646/09, duration: 2009-2011, coordinator: doc. Ing. Branislav Sobota, PhD.
- ***Electronic Processing of English Names in Slovak Language***, VEGA No. 1/0102/09, duration: 2009–2011, cooperator: Ing. Ján Genči, PhD.
- ***Cooperation Between TUKE and NTNU in the Field of Distributed Computer Network Security***, Project NIL No. NIL-II-021, duration: 2009-2011, coordinator: prof. Ing. Liberios Vokorokos, PhD.
- ***Language Patterns in Domain-specific Languages Evolution***, APVV MVTS No. APVV SK-SI-0003-10, duration: 2011-2012, coordinator: prof. Ing. Ján Kollár, CSc.
- ***The Platform for Integration of Learning Materials and Tools Used in the Learning Process***, KEGA No. 021TUKE-4/2011, duration: 2011-2013, coordinator: prof. Ing. Ján Kollár, CSc.
- ***Modern Software Engineering in the Learning Process – Structure Design and Content Implementation of Current Software Engineering Courses for Computer Science Programs at Technical Universities***, KEGA No. 040TUKE-4/2011, duration: 2011-2013, coordinator: doc. Ing. Ladislav Samuelis, CSc.
- ***Learning Simulator for Information Technology Security Specialist***, KEGA No. 3/7110/09, duration: 2009-2011, coordinator: prof. Ing. Liberios Vokorokos, PhD.

- ***Development of Virtual and Remote Network of Laboratories,*** KEGA No. 3/7245/09, duration: 2009-2011, coordinator: doc. Ing. František Jakab, PhD.
- ***ZIPS – Mining, Integrating and Presenting Spatial Information about Services.*** Tatrabanka E-talent Grant, 2011, coordinator: doc. Ing. Jaroslav Porubän, PhD.
- ***International Cooperation in Computer Science, CEEPUS No. CII-HU-0019-01-0506 (H81)***, duration: since 2005, coordinator: doc. Ing. Ladislav Samuelis, CSc.
- ***Cisco Networking Academy Program – Regional Academy at DCI FEI TU, Cisco No. 8250,*** duration: since 1999, coordinator: doc. Ing. František Jakab, PhD.

6 CO-OPERATION

6.1 Co-operation in Slovakia

- Faculty of Informatics and Information Technologies, Slovak University of Technology in Bratislava
- Faculty of Management Science and Informatics, University of Žilina
- Department of Informatics, Armed Forces Academy of gen. M. R. Štefánik in Liptovský Mikuláš
- Department of Informatics, University in Trenčín
- Department of Informatics, Matej Bel University in Banská Bystrica
- Institute of Computer Science, Pavol Jozef Šafárik University in Košice
- Institute of Informatics, Slovak Academy of Sciences, Bratislava
- Department of Informatics, Constantine the Philosopher University, Nitra

6.1.1 Visitors to the Department

- Assoc. Prof. Ines Čeh – University of Maribor, Slovenia
- prof. Ing. Pavol Hováth, CSc., Faculty of Informatics and Information Technologies, Slovak University of Technology in Bratislava, Slovakia
- doc. Ing. Ladislav Hudec, CSc., Faculty of Informatics and Information Technologies, Slovak University of Technology in Bratislava, Slovakia
- doc. Ing. Valentino Vranić, Faculty of Informatics and Information Technologies, Slovak University of Technology in Bratislava, Slovakia
- doc. Mgr. Daniela Chudá, PhD., Faculty of Informatics and Information Technologies, Slovak University of Technology in Bratislava, Slovakia
- doc. Ing. Viera Rozinajová, PhD., Faculty of Informatics and Information Technologies, Slovak University of Technology in Bratislava, Slovakia
- doc. Ing. Pavel Čičák, PhD., Faculty of Informatics and Information Technologies, Slovak University of Technology in Bratislava, Slovakia
- prof. Ing. Mikuláš Alexík, CSc., Faculty of Management Science and Informatics, University of Žilina, Slovakia
- prof. Ing. Mária Bieliková, CSc., Faculty of Informatics and Information Technologies, Slovak University of Technology in Bratislava, Slovakia
- prof. Ing. Pavol Návrat, PhD., Faculty of Informatics and Information Technologies, Slovak University of Technology in Bratislava, Slovakia
- prof. Ing. Milan Kolesár, CSc., Faculty of Informatics and Information Technologies, Slovak University of Technology in Bratislava, Slovakia
- doc. Ing. Stanislav Racek, CSc., University of West Bohemia in Pilsen, Czech Republic
- prof. Ing. Jiři Šafařík, CSc., University of West Bohemia in Pilsen, Czech Republic

- doc. Ing. Jaroslav Zendulka, CSc., Brno University of Technology, Czech Republic
- prof. Ing. Miroslav Liška, CSc., Military Academy of gen. M. R. Štefanik in Lliptovský Mikuláš, Slovakia
- prfo. Ing. Marcel Harakaľ, CSc., Military Academy of gen. M. R. Štefanik in Lliptovský Mikuláš, Slovakia
- prof. Ing. Igor Mokriš, CSc., prof. Ing. Miroslav Liška, CSc., Military Academy of gen. M. R. Štefanik in Lliptovský Mikuláš, Slovakia
- doc. RNDr. Ľubomír Dedera, PhD., Military Academy of gen. M. R. Štefanik in Lliptovský Mikuláš, Slovakia
- doc. Ing. František Zbořil, CSc., Brno University of Technology, Czech Republic
- doc. Ing. Jiři Kunovský, CSc., Brno University of Technology, Czech Republic
- prof. RNDr. Viliam Geffert, DrSc., Pavol Jozef Šafarik University in Košice, Slovakia
- doc. RNDr. Gabriela Andrejková, CSc., Pavol Jozef Šafarik University in Košice, Slovakia
- doc. RNDr. Per Šaloun, PhD., VŠB-Technical University of Ostrava, Czech Republic
- doc. Ing. Vlastimil Jáneš, CSc., Czech Technical University in Prague, Czech Republic
- doc. Ing. Róbert Lórencz, CSc., Czech Technical University in Prague, Czech Republic
- Ing. Jarmila Škrinárová, PhD., Matej Bel University in Banská Bystrica, Slavakia
- Ing. Dana Horváthová, PhD., Matej Bel University in Banská Bystrica, Slavakia
- Mgr. PaedDr. Vladimír Siládi, PhD., Matej Bel University in Banská Bystrica, Slavakia
- Akademik prof. Ing. Ivan Plander, DrSc., University of Trencin, Slovakia
- Ing. Penka Martincová, PhD., Faculty of Management Science and Informatics, University of Žilina, Slovakia
- RNDr. Štefam Kovalík, PhD., Faculty of Management Science and Informatics, University of Žilina, Slovakia

6.2 International Co-operation

- University of Ostrava, Czech Republic
- VŠB – Technical University of Ostrava, Czech Republic
- University of West Bohemia in Pilsen, Czech Republic
- Czech Technical University In Prague, Czech Republic
- Brno University of Technology, Czech Republic
- Information Systems Institute, Technical University of Vienna, Austria
- Johannes Kepler University, Linz, Austria
- University of Klagenfurt, Austria
- University of Alcalá, Alcalá de Henares (Madrid), Spain
- Eötvös Loránd University, Budapest, Hungary
- Technical University of Budapest, Hungary
- University of Szeged, Hungary
- Technical University of Gdansk, Poland
- University of Oradea, Romania
- Babes-Bolyai University, Cluj-Napoca, Romania
- University of Maribor, Slovenia
- University of Kumamoto, Japan
- Frauhofer Institute for Open Communication System (FOKUS), Berlin, Germany
- International Solomon University Kiew, Ukraine
- The National University of T. Schevchenko, Kiew, Ukraine
- Kharkov National University of Radioelectronics, Ukraine

- Uzhgorod National University, Ukraine
- ISTASE, Universite de St-Etienne, France
- Paisii Hilendarski University, Plovdiv, Bulgaria
- Politecnico di Milano Dipartimento di Electronica, Milano, Italy
- Polytechn. Eng. College, Subotica, Serbia
- University of Jyväskylä, Finland
- Jyväskylä University of Applied Sciences, School of Information Technology, Finland
- University of Minho, Portugal
- Instituto Politécnico de Bragança, Bragança, Portugal
- NTNU, Institutt for Telematikk, Trondheim, Norway

6.2.1. Visits of Staff Members to Foreign Institutions

- doc. Ing. František Jakab, PhD., Bauman Moscow Technical University, Moscow, Russia
- Ing. Csaba Szabó, PhD., CEEPUS, BABES BOLYAI, University of Cluj-Napoca, Romania
- Ing. Marek Paralič, PhD., Erasmus Intensive Programm, Madrid, Spain
- Ing. Miroslav Biňas, PhD., Erasmus Intensive Programm, Madrid, Spain
- Ing. Viliam Slodičák, PhD., ETAPS 2011, Saarbrücken, Germany
- Ing. Juraj Giertl, PhD., IPFIX Interopetability Event, Prague, Czech Republic
- Ing. Martin Révés, PhD., IPFIX Interopetability Event, Prague, Czech Republic
- doc. Ing. František Jakab, PhD., European CATC meeting 2011, Lisbon, Portugal
- Ing. Peter Feciľák, PhD., European CATC meeting 2011, Lisbon, Portugal
- prof. Ing. Štefan Hudák, DrSc., National University T. Sevcenka, Kyiv, Ukraine
- prof. Ing. Ján Kollár, CSc., University of Malaga, Spain
- Ing. Emília Pietriková, POSTER 2011, Prague, Czech Republic
- Ing. Sergej Chodarev, POSTE 2011, Prague, Czech Republic
- Ing. Ľubomír Wassermann, POSTE 2011, Prague, Czech Republic
- Ing. Miroslav Sabo, POSTE 2011, Prague, Czech Republic
- doc. Ing. Jaroslav Porubän, PhD., University of Linz, Austria
- doc. Ing. Ladislav Samuelis, CSc., Conference on Innovation in Central Eastern supported by EIT ICT Labs, Budapest, Hungary
- prof. Ing. Ján Kollár, CSc., EMES 2011, Oradea, Romania
- doc. Ing. Jaroslav Porubän, PhD., EMES 2011, Oradea, Romania
- Ing. Peter Václavík, PhD., EMES 2011, Oradea, Romania
- Ing. Ľubomír Wassermann, EMES 2011, Oradea, Romania
- Ing. Miroslav Sabo, EMES 2011, Oradea, Romania
- Ing. Emília Pietriková, EMES 2011, Oradea, Romania
- Ing. Sergej Chodarev, EMES 2011, Oradea, Romania
- Ing. Dominik Lakatoš, EMES 2011, Oradea, Romania
- Ing. Michaela Kreutzová, EMES 2011, Oradea, Romania
- Ing. Peter Feciľák, PhD., NetAcad conference, Budapest, Hungary
- doc. Ing. František Jakab, PhD., NetAcad conference, Budapest, Hungary
- doc. Ing. František Jakab, PhD., Networking Academy Games 2011, Bucharest, Romania

- doc. Ing. Zdeněk Havlice, CSc., Brno University of Technology, Brno, Czech Republic
- doc. Ing. Branislav Sobota, PhD., Brno University of Technology, Brno, Czech Republic
- Ing. Viliam Slodičák, PhD., CEFP 2011, Budapest, Hungary
- Ing. Pavol Macko, CSc., CEFP 2011, Budapest, Hungary
- doc. Ing. František Jakab, PhD., Networking Academy, Hradec Králové, Czech Republic
- Ing. Miroslav Michalko, PhD., Networking Academy, Hradec Králové, Czech Republic
- Ing. Peter Feciľák, PhD., Networking Academy, Hradec Králové, Czech Republic
- Ing. Katarína Kleinová, PhD., Networking Academy, Hradec Králové, Czech Republic
- Ing. Juraj Giertl, PhD., Networking Academy, Hradec Králové, Czech Republic
- Ing. Jozef Janitor, Networking Academy, Hradec Králové, Czech Republic
- doc. Ing. František Jakab, PhD., Bauman Moscow Technical University, Moscow, Russia
- Ing. Štefan Korečko, PhD., CEEPUS mobility, Plovdiv, Bulgaria
- Ing. František Hrozek, CE-II, LIRKIS presentation, Budapest, Hungary
- Ing. Štefan Korečko, 15th Internation Conference on Computers, Corfu, Greece
- doc. Ing. František Jakab, PhD., University camp, Sevastopol, Ukraine
- doc. Ing. Ladislav Samuelis, CSc., CEE-SET 2011, Debrecen, Hungary
- Ing. Csaba Szabó, PhD., SISY 2011, Subotica, Serbia
- Ing. Štefan Korečko, PhD., CSSim Conference, Brno, Czech Republic
- doc. Ing. František Jakab, PhD., Bauman Moscow Technical University, Moscow, Russia
- Ing. Viliam Slodičák, PhD., CECIIS 2011, Varazdin, Croatia
- doc. Ing. Ján Genči, PhD., TEMPUS project, Kyiv, Ukraine
- Ing. Peter Feciľák, PhD., BANA Conference, Sofia, Bulgaria
- doc. Ing. Jaroslav Porubän, PhD., ACM SPY 2011, Prague, Czech Republic
- prof. Ing. Ján Kollár, CSc., GRIFO 2011, Mikulov, Czech Republic
- doc. Ing. Jaroslav Porubän, PhD., Imagine Cup, New York, USA
- Ing. Ivan Halupka, University of Maribor, Slovenia
- Ing. Dominik Lakatoš, University of Maribor, Slovenia
- Ing. Michaela Bačíková, Unviersity of Maribor, Slovenia
- Ing. Milan Nosáľ, University of Maribor, Slovenia
- doc. Ing. František Jakab, PhD., TEMPUS project, Kyiv, Ukraine
- doc. Ing. Ján Genči, PhD., TEMPUS project, Moscow, Russia

6.3 Membership in International Organizations and Societies

- Bača, J., Genči, J., Havlice, Z., Hudák, Š., Ivančík, R., Kollár, J., Korečko, Š., Novitzká, V., Porubän, J., Samuelis, L., Sobota, B., Straka, M., Šuba, S., Šujanský, M., Telepovská, H., Tomášek, M., Václavík, P.: Members of the CSSS - Czech and Slovak Society for Simulation
- Genči, J., Paralič, M.: Members of Association for Computing Machinery, New York, USA
- Hudák, Š.: Member of Publishing Board of Communications of The

International Solomol University: Mathematical Methods in Cybernetics, Kiev, Ukraine

- Jakab, F.: Member of EMEA NetAcad team, Bedfont Lakes, Feltham, Middlesex, United Kingdom
- Novitzká, V.: Member of European Association of Programming Languages and Systems
- Novitzká, V.: Member of Common Framework Initiative, European Strategic Programme for Research in Information Technology WG 29432
- Novitzká, V.: Member of European Association of Theoretical Computer Science
- Samuelis, L.: Member of the J.von Neumann Hungarian informatics society
- Paralič, M.: Member of the Institute of Electrical and Electronics Engineers
- Samuelis, L.: Member of the EuroPACE board (virtual university, Leuven, Belgium)
- Šujanský, M.: Member of CSSIM/Scientific Association

6.4 Membership in Slovak Organizations and Societies

- Bača, J., Biňas, M., Genči, J., Giertl, J., Havlice, Z., Hudák, Š., Ivančík, R., Kollár, J., Korečko, Š., Krokavec, M., Mihályi, D., Novitzká, V., Paralič, M., Pločica, O., Porubän, J., Samuelis, L., Slodičák V., Sobota, B., Sobotová, D., Straka, M., Szabó, Cs., Šimoňák, S., Šuba, S., Šujanský, M., Telepovská, H., Tomášek, M., Tóth, M., Václavík, P., Vokorokos, L.: Members of the SSAKI - „Slovak Society for Applied Cybernetics and Informatics"
- Genči, J., Havlice, Z., Kollár, J., Novitzká, V., Paralič, M., Samuelis, L., Sobota, B.: Members of the Slovak Society for Computer Science (SSCS)
- Genči, J.: The Second TU Košice representative in EUNIS-SK
- Havlice, Z.: Scientific board of the Faculty of Electrical Engineering and Informatics, Technical University of Košice
- Havlice, Z.: Scientific board of the Faculty of Faculty of Management Science and Informatics, Technical University of Žilina
- Havlice, Z.: State Examination Commission for state exams in the study field Computer Engineering and Informatics at the Faculty of Electrical Engineering and Informatics of Technical University of Košice
- Havlice, Z.: State Examination Commission for state exams in the study field Applied Informatics and Automation in Industry at the Faculty of Materials Science and Technology of Slovak University of Technology in Bratislava
- Hudák, Š.: Member of Slovak Commission for Defense of DrSc dissertation in the scientific field Computer Engineering and Informatics
- Hudák, Š.: Member of the Common Scientific Commission for Defense of PhD dissertation in the field „Computer Tools and Systems"
- Hudák, Š.: Member of examinational board for AMBI project In Slovak Republic EXIN.SR
- Jakab, F.: Communication Technology Forum in SR (since 1997, Head of the application section, www.ctf.sk)
- Jakab, F.: Chairman of Committee for Business-Academic Cooperation, American Chamber of Commers in Bratislava
- Jakab, F.: Coordinator of the Cisco Networking Academy program for Slovakia
- Jakab F.: Member of Košice IT Valley association board

- Kollár, J.: Member of the review group of the Journal of Electrical Engineering
- Kollár, J.: Member of the review group of the Computers and Informatics journal
- Kollár, J.: Member of the program committee of the international conference ICETA – International Conference on Emerging Telecommunications Technologies and Applications, Košice, Slovak Republic
- Kollár, J.: Member of Common Scientific Commission for Defense of PhD dissertation in the field „Programm and Information System“
- Sivý, I.: Member of the examinational board for AMBI project In Slovak republic EXIN.SR
- Šujanský, M.: Member of the Board of the SSAKI - „Slovak Society for Applied Cybernetics and Informatics”
- Šujanský, M.: EUNIS – the Board of the Association for Information Technologies
- Telepovská, H.: Member of the SIUG - Slovak Informix User Group
- Vokorokos, L.: Member of the Common Scientific Commission for Defense of PhD dissertation in the field „Computer Tools and Systems“.
- Vokorokos, L.: Member of the editorial board of the scientific international journal "Transport and Logistics International Journal".
- Vokorokos, L.: Vice-chairman of the editorial board of the scientific journal - "Transactions of the Universities of Košice".
- Vokorokos, L.: Member of the editorial board of the scientific journal "Acta Avionica".
- Vokorokos, L.: Member of the Scientific board at the Technical University of Košice.
- Vokorokos, L.: Member of the Scientific board at the Faculty of Electrical Engineering and Informatics, Technical University of Košice.
- Vokorokos, L.: Member of the Common Scientific Commission for Defense of PhD dissertation in the field "Informatics".
- Vokorokos, L.: Member of the Board for development and informatization of the Technical University in Košice
- Vokorokos, L.: Member of the Expert group for informatization and development, TU-FEI, Košice

6.5 Contracts, International Scientific Projects

- Cooperation with the Cisco company (www.cnl.sk)
- Cooperation with the Siemens PSE company
- Cooperation with the Sybase company
- Cooperation with the T- Systems company
- Cooperation with the Microsoft company
- Cooperation with the IBM company

7 THESES

Thesis type	Bachelor	Master	Doctoral
Number	211	138	4

8 OTHER ACTIVITIES

8.1 Symposia, Workshops, Conferences, Seminars

- INFORMATICS'2011 – International Scientific Conference, November 16th – 18th, 2011 in Rožňava, Slovakia
- SAMI 2011 – 9th International Symposium on Applied Machine Intelligence and Informatics, January 27 – 29, 2011 in Smolenice, Slovakia (DCI co-operation)
- ICETA 2011 – 9th International Conference on Emerging e-Learning Technologies and Applications, October 27 – 28, 2011, Stara Lesna, The High Tatras, Slovakia (DCI co-operation)

8.2 Study tours

- Ing. Peter Žársky, CEEPUS, BABES BOLYAI, University of Cluj-Napoca, Romania
- Ing. Sergej Chodarev, University of Malaga, Spain
- Ing. Emília Pietriková, University of Malaga, Spain
- Ing. Marek Novák, University of Jyväskylä, Finland
- Ing. Ivan Klimek, NTNU, Institutt for Telematikk, Trondheim, Norway
- Ing. Dominik Lakatoš, NTNU, Institutt for Telematikk, Trondheim, Norway
- Ing. Miroslav Sabo, NTNU, Institutt for Telematikk, Trondheim, Norway
- Ing. Peter Žársky, NTNU, Institutt for Telematikk, Trondheim, Norway

9 PUBLICATIONS

9.1 Books

[1] SOBOTA, B.: Neuniformné racionálne B-spline a modelovanie v počítačovej grafike. Košice, elfa, 2011, 96 pp. ISBN 978-80-8086-180-3 (in Slovak).

[2] SOBOTA, B. - PARALIČ, M. - KOREČKO, Š. - SLODIČÁK, V.: Úvod do programovania a sietí. 2nd edition, Košice, elfa, 2011, 388 pp. ISBN 978-80-8086-186-5 (in Slovak).

9.2 Journals

[1] FURDÍK, K. - TOMÁŠEK, M. - HREŇO, J.: A WSMO-based Framework Enabling Semantic Interoperability in e-Government Solutions. Acta Polytechnica Hungarica, Vol. 8, No. 2, 2011, pp. 117-127, ISSN 1785-8860.

[2] HROZEK, F. - SOBOTA, B.: Simulation and Visualization of Water Flow. Acta Electrotechnica et Informatica, Vol. 11, No. 1, 2011, pp. 25-32, ISSN 1335-8243.

[3] KHOURI, S. - CEHLÁR, M. - JURKASOVÁ, Z. - TELEPOVSKÁ, H.: Optimalization of security management of information systems and ERP system of enterprises. Acta Avionica, Vol. 13, No. 21, 2011, pp. 163-167, ISSN 1335-9479.

[4] KOREČKO, Š. - DANCÁK, M.: Some Aspects of BKPI B Language Compiler Design. Egyptian Computer Science Journal, Vol. 35, No. 3, 2011, pp. 33-43, ISSN 1110-2586.

[5] KREUTZOVÁ, M. - PORUBÄN, J. - VÁCLAVÍK, P.: First Step for GUI Domain Analysis: Formalization. Journal of Computer Science and Control Systems, Vol. 4, No. 1, 2011, pp. 65-69, ISSN 1844-6043.

[6] LAKATOŠ, D. - PORUBÄN, J. - SABO, M.: Assisted software language creation using internal model. Journal of Computer Science and Control Systems, Vol. 4, No. 1, 2011, pp. 71-74, ISSN 1844-6043.
[7] ĽAĽOVÁ, M. - MIHÁLYI, D. - NOVITZKÁ, V.: The role of bigraphs in modeling mobile processes. Journal of Information, Control and Management Systems, Vol. 9, No. 2, 2011, pp. 93-100, ISSN 1336-1716.
[8] MICHALKO, M.: Video Streaming In Wireless Networks Using Avismo Concept. Journal of Information, Control and Management Systems, Vol. 9, No. 2, 2011, pp. 109-117, ISSN 1336-1716.
[9] SABO, M.: Cause-Based Model of Software Evolution. Acta Electrotechnica et Informatica, Vol. 11, No. 1, 2011, pp. 62-65, 1335-8243.
[10] SLODIČÁK, V.: Some useful structures for categorical approach for program behavior. Journal of Information and Organizational Sciences, Vol. 35, No. 1, 2011, pp. 99-109, ISSN 1846-9418.
[11] SLODIČÁK, V. - MACKO, P.: Some new approaches in functional programming using algebras and coalgebras. Electronic Notes in Theoretical Computer Science, 279/3, 2011, pp. 41-62, ISSN 1571-0661.
[12] SLODIČÁK, V. - SZABÓ, C. - MACKO, P.: The rôle of action semantics in functional paradigm. Journal of Information, Control and Management Systems, Vol. 9, No. 2, 2011, pp. 129-138, ISSN 1336-1716.
[13] SOBOTA, B.: Control of Large Graphics Data Set Visualization Using Script Language. Acta Electrotechnica et Informatica, Vol. 11, No. 2, 2011, pp. 33-36, ISSN 1335-8243.
[14] SOBOTA, B.: 3D Modelling of CHua's Circuit Boundary Surface. Acta Electrotechnica et Informatica, Vol. 11, No. 1, 2011, pp. 44-47, ISSN 1335-8243.
[15] SZABÓ, C. - TONHAUSEROVÁ, I. - KOTOS, T.: Feature Driven Information System Development. Egyptian Computer Science Journal, Vol. 35, No. 2, 2011, pp. 104-111, ISSN 1110-2586.
[16] SZABÓ, C. - TONHAUSEROVÁ, I. - MAKAROV, V.: Shortening SQL Queries for Relational Database Converted from an Ontology. Journal of Computer Science and Control Systems, Vol. 4, No. 1, 2011, pp. 183-186, ISSN 1844-6043.
[17] TOMÁŠEK, M.: Language for a Distributed System of Mobile Agents. Acta Polytechnica Hungarica, Vol. 8, No. 2, 2011, pp. 61-79, ISSN 1785-8860.
[18] TOMÁŠEK, M.: Encoding Named Channels Communication by Behavioral Schemes. Acta Polytechnica Hungarica, Vol. 8, No. 2, 2011, pp. 5-19, ISSN 1785-8860.

9.3 Other publications

Publication Type	Confereces		Other
	Foreign	Home	
Number	27	52	1

DEPARTMENT OF TECHNOLOGIES IN ELECTRONICS

http://www.tuke.sk/fei-kte/
Tel./Fax: +421 55 602 3195

Head of Department
prof. Ing. Alena Pietriková, CSc.
E-mail: Alena.Pietrikova@tuke.sk

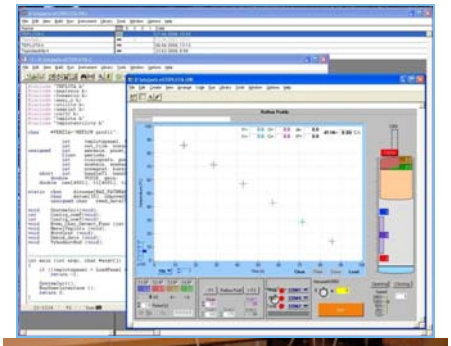
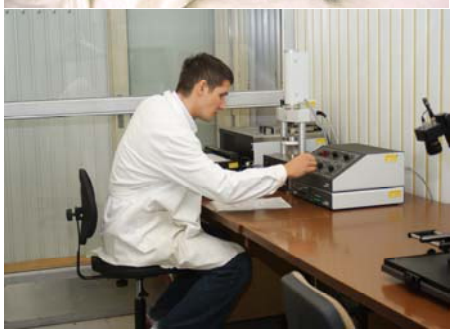
1 DEPARTMENT'S PROFILE

The Department of Technologies in Electronics (Katedra technológií v elektronike – KTE) was founded in 1991. The original name of department was Department of Hybrid Microelectronics (until 2003). The Department offers three types of full-time courses:

Bachelor's Degree course "*Automotive electronics*" lasts in normal way 3 years and is leading to degree Bc. The graduates get more-or-less practical skills in mastering automotive electronics.

Master's Degree course "*Progresive materials and technologies in automotive electronics*" lasts in normal way 2 years and is leading to degree Ing. The graduates get theoretical and practical skills in the area of automotive electronic with the aspect on progresive materials and technologies. Study programme "*Production Technologies in Electronics*" at the Department was finished and closed in the year 2011.

PhD. course "*Progresive materials and technologies in automotive electronics*" lasts in normal way 3 years and is leading to degree PhD. The graduates get erudition in scientific areas and acquire deeper knowledge in specific area of materials and technologies in automotive electronics.


The subjects in the degree courses are orientated to technologies in electronics with accent on automotive electronics: mounting technology in electronics, printed circuit boards, thick film technology, LTCC technology and polymer technology.

The basic research activities of Department are concentrated on:

- research, development and application of latest trends in the field of mounting technology in electronic,
- investigation of materials and structures of solder joints,
- research and development of microsystems and hybrid sensors,
- LTCC multilayer modules,
- quality and reliability of electronic systems.

2 STAFF

Professors:	prof. Ing. Alena Pietriková, CSc. prof. Ing. Stanislav Slosarčík, CSc. prof. Ing. Juraj Banský, CSc. Dr.h.c. prof. Ing. Miloš Somora, CSc.
Assistant Professors:	Ing. Slavomír Kardoš, PhD. Ing. Ľubomír Livovský, PhD. Ing. Juraj Ďurišin, PhD. Ing. Igor Vehec, PhD. Ing. Pavol Cabúk, PhD.
Research staff:	Igor Vehec
Secretary:	Mgr. Alena Focková
Internal Ph.D. Student:	Ing. Michal Jurčišin Ing. Michal Kravčík Ing. Dominik Demeter Ing. Kornel Ruman
External Ph.D. Student:	Ing. Pavol Cabúk (defended in June 2011)

3 LABORATORIES

- Laboratory of Technological Processes I.
- Laboratory of Technological Processes II.
- Virtual Technological Laboratory and CAD design systems.
- Laboratory of Diagnostics and Thermal Processing.
- Laboratory of Optical Diagnostics and Control of Electronic Structures.
- Laboratory of Measurements in Electronics.

4 TEACHING

4.1 Undergraduate Study (Bc.)

Subject	Semester	Lectures/exercises (hours per week)	Name of Lecturer
Fundamentals of Materials Engineering	1st	2/2	Pietriková, Banský, Kardoš, Ďurišin, Vehec, Cabúk
Materials for Electrical Applications	2nd	2/1	Pietriková
Production and Processing of Materials for Electrical Engineering	2nd	3/2	Pietriková
Design Systems and Mounting Technologies in Electronics	3rd	2/3	Pietriková Livovský
Technical Documentation at Electrotechnical Production	3rd	2/3	Livovský
Production and Properties of Pasive Components	3rd	2/2	Kardoš
Design Systems and Mounting Technologies in Electronics	4th	2/3	Pietriková Livovský
Quality in Materials and Production Processes	4th	2/2	Pietriková
Bachelor Thesis I.	5th	0/3	Pietriková
Basies of Production Processes in Electronics	5th	2/2	Slosarčík
Production Equipments and Systems in Electronic	5th	3/3	Cabúk
Bachelor Thesis II.	6th	0/9	Pietriková
Fundamentals of Microelectronic Technologies	6th	2/2	Vehec
Microstructural Analyses of Materials in Electronics	6th	3/3	Ďurišin
Technologic Practise in the Firm	6th	0/8	Pietriková
Fundamentals of Business and Marketing	6th	2/2	Banský
Automated Measuring Systems	6th	3/2	Livovský
Production Processes in Electronics[1]			Pietriková Slosarčík
CAD in Electronics	4th	2/2 (part of lectures)	Livovský Galajda

[1] for Bc. study programs “Applied informatics” (3rd semester) and “Electronics” (5th semester).

4.2 Graduate Study (Ing.)

Subject	Semester	Lectures/exercises (hours per week)	Name of Lecturer
Production Processes in Electronics I	1st	4/4	Pietriková
Production Processes in Electronics	1st	2/2	Slosarčík
Microsystems Technology	2rd	3/2	Somora
Semestral Project	2nd	0/3	Pietriková
Production Processes in Electronics II	2nd	2/4	Slosarčík
Quality and Reliability Management	2nd	2/2	Pietriková
Project Management	2nd	2/0	Pietriková
Electronics Technologies	2nd	2/2	Slosarčík
Diploma Thesis I.	3rd	0/4	Pietriková
Design Systems in Electronic	3rd	3/2	Livovský
Production Technologies, Structure, Properties and Applications of Sensors	3rd	2/3	Banský
Marketing of Modern Enterprise	3rd	2/1	Somora
Diploma Thesis II.	4th	0/18	Pietriková
Chosen Chapters from Progressive Materials and Technologies in Car Electronics	4th	2/3	Pietriková

4.3 Undergraduate and Graduate Study for Foreign Students (in nglish Language)

Subject	Semester	Lectures/exercises (hours per week)	Name of Lecturer
Fundamentals of Material Engineering	1st	2/2	Pietriková
Production Processes in Electronics	3rd	3/2	Pietriková

4.4 Postgraduate Study (PhD.)

Subject	Semester	Lectures/exercises (hours per week)	Name of Lecturer
Electrotechnologies and Materials	1st	0/2	Slosarčík
Analyse Methods of Electronic Materials and Structures	2nd	0/2	Pietriková
Scientific Research I.	2nd	0/2	Supervisors
Subject of the Branch	3rd	0/2	Banský
Scientific Research II.	4th	0/2	Supervisors
Scientific Research III.	5th	0/2	Supervisors
PhD Thesis		0/9	Supervisors
PhD Project		0/4	Supervisors

5 RESEARCH PROJECTS

5.1 Structural Funds

- ***Centre of Excellence of the Integrated Research and Exploitation of the Progressive Materials and Technologies in the Area of Automotive Electronics*** (Centrum excelentnosti integrovaného výskumu a využitia progresívnych materiálov a technológií v oblasti automobilovej elektroniky). ITMS: 26220120055. Coordinator: prof. Ing. Alena Pietriková, CSc. Duration: 09/2010 - 08/2013.
- ***Developmdent of Unique Low Power Static Source for Electrosystems*** (Vývoj unikátneho nízkoenergetického statického zdroja pre elektrosystémy) ITMS: 26220220029. Coordinator: prof. Ing. Pavol Fedor, CSc. Duration: 01/2010 - 12/2011.
- Participation on the project from structural funds: ***Innovation Tools Package for Reform of Education at TUKE*** (Balík inovatívnych prvkov pre reformu vzdelávania na TUKE). ITMS: 26110230018. Coordinator: prof. Ing. Pavel Raschman, CSc. Duration: 09/2010-12/2012.

5.2 Research Projects

- ***Progressive Materials and Construction Solutions for Technology of Miniaturized Systems Integration*** (Progresívne materiály a konštrukčné riešenia pre technológiu 3D integrácie miniaturizovaných systémov). Project VEGA No. 1/0108/09. Coordinator: prof. Ing. Stanislav Slosarčík, CSc. Members: majority of staff members. Short description: The project is oriented to construction solutions and technological process of 3D integration of miniaturized systems. Duration: 2009 – 2011.
- ***Analysis and Proposal of the Complex Methodology of the Quality Evaluation of the Assembly Components and Systems Based on Lead-free Solders*** (Analýza a návrh komplexnej metodiky hodnotenia kvality spojov montážnych prvkov a systémov na báze bezolovnatých spájok). Project VEGA No. 1/0298/09. Coordinator: prof. Ing. Alena Pietriková, CSc. Members: majority of staff members. Short description: The project solves several questions associated with design, development, preparation, and study of new materials, optimization of technology for new quality of interconnections in the electronics based on environmental materials. Duration: 2009 – 2012.
- ***Advanced Solder, Materials for High Temperature Application-HISOLD.*** *Project COST-MP0602.* Coordinator: prof. Ing. Alena Pietriková, CSc. Members: majority of staff members. Short description: The project is aimed to new materials, optimization of technology for new quality of interconnections in the electronics. Duration: 2008 – 2011.
- ***Time and Stress Degradation Phenomena in Lead-free Solder Joints*** (Jav degradácie vplyvom času a namáhania v bezolovnatých spájkovaných spojoch). Project APVV SK-RO-0025-10. Coordinator: prof. Ing. Alena Pietriková, CSc. Duration: 2011 - 2012.
- ***Concept Formulation of Transformation of Education Process with Orientation on Study Programs Aimed to Progressive Materials and Smart Technologies in Autoelectronics*** (Vypracovanie koncepcie transformácie edukačného procesu so zameraním na tvorbu študijných programov orientovaných na progresívne materiály a inteligentné

technológie autoelektroniky). Project KEGA 003TUKE-4/2011. Coordinator: prof. Ing. Alena Pietriková, CSc. Members: majority of staff members. Duration: 2011 - 2013.

- ***Creation of Multimedia and e-Learning-online Courses for Undergraduate Students in the Field of the Technology of Production of Sensors, their Properties and their Usage in the Biomedical Engineering with an Alternative for Students with Disabilities*** (Tvorba multimediálnych kurzov pre on-line a e-vzdelávanie vysokoškolských študentov v oblasti technológie výroby senzorov, ich vlastností a ich využitia v biomedicínskom inžinierstve s alternatívou pre študentov s postihnutím). Project KEGA 3/7117/09. Coordinator: prof. Ing. Juraj Banský, CSc. Members: majority of staff members. Short description: The aim of project is to make the generally accessible system for on-line education in the form of the e-learning by using multimedia technique. The project is divided to the partial modules of the individual topics from the area of the sensor's manufacturing technologies and their applications, CAD design systems and mounting technologies in electronic and their synergetic utilization in the biomedical engineering. Duration: 2009 – 2011.

6 CO-OPERATION

6.1 Co-operation in Slovakia

The Department of Technologies in Electronics has entered into the long-term based co-operation with:

6.1.1. Industrial Partners

- Magneti Marelli Slovakia, s.r.o. research, development, education
- ELCOM, s.r.o., Prešov research, development
- PreDops, s.r.o., Prešov research, development, education
- MICRONIC s.r.o., Kysak research, development, education
- ELPRO, s.r.o., Košice development, education

6.1.2. Academic Partners

All academic partners intensively co-operate on all of above fields – research, development and education, too:

- Department of Electrotechnology, FEI STU Bratislava,
- Department of Electronics and Electrotechnology, EF ŽU in Žilina,
- Slovak Academy of Science, Košice.

6.2 International Co-operation

The Department of Technologies in Electronics has entered into long-term international co-operation with:

- FEL ČVUT Prague, Czech Republic,
- IMT Bucharest, Romania, bilateral co-operation SK/Ro project,
- University POLITEHNICA of Bucharest (UPB), COST,
- Budapest University of Technology and Economics (BME), COST,
- Politechnika Rzeszow, Poland.

6.2.1. Foreign Visitors to the Department

- Marius Bazu, Romania 09.05. – 15.05.2011
- Rodica Voicu, Romania 09.05. – 15.05.2011

6.2.2. Visits of Staff Members to Foreign Institutions

- Ďurišin, J., Germany (Hamburg) 25.01. – 28.01.2011
- Banský, J., Hungary (Budapesť) 17.02. – 18.02.2011
- Slosarčík, S., Poland (Rzeszow) 25.03. – 25.03.2011
- Slosarčík, S., Poland (Rzeszow) 03.06. – 03.06.2011
- Somora, M., Poland (Rzeszow) 03.06. – 03.06.2011
- Cabúk, P., Poland (Rzeszow) 23.06. – 23.06.2011
- Kardoš, S., Poland (Rzeszow) 23.06. – 23.06.2011
- Jurčišin, M., Poland (Rzeszow) 23.06. – 23.06.2011
- Ďurišin, J., Germany (Hamburg) 23.06. – 27.06.2011
- Banský, J., CZ (Prague) 31.07. – 06.08.2011
- Vehec, I., CZ (Prague) 31.07. – 06.08.2011
- Banský, J., Germany (Regensburg, Nuremberg) 08.08. – 12.08.2011
- Vehec, I., Germany (Regensburg, Nuremberg) 08.08. – 12.08.2011
- Jurčišin, M., Poland (Zielona Góra) 28.08. – 31.08.2011
- Kravčík, M., CZ (Prague) 11.09. – 15.09.2011
- Livovský, Ľ., CZ (Brno) 14.09. – 16.09.2011
- Vehec, I., CZ (Brno) 14.09. – 16.09.2011
- Banský, J., Poland (Warsaw), Belgium (Brussels) 09.10. – 12.10.2011
- Jurčišin, M., Germany (Ilmenau) 09.10. – 08.12.2011
- Ruman, K., Germany (Ilmenau) 09.10. – 08.12.2011
- Kardoš, S., Romania (Bucharest, Sinaia) 13.10. – 19.10.2011
- Vehec, I., Romania (Bucharest, Sinaia) 13.10. – 19.10.2011
- Cabúk, P., Germany (Dresden) 25.10. – 28.10.2011

6.3 Membership in International Organizations and Societies

- Banský, J.: Honorary Consul of Federal Republic of Germany in Slovak Republic.
- Pietriková, A.: Member of the International Steering Committee for International Spring Seminar on Electronics Technology – ISSE.
- Pietriková, A.: Member of the International Steering Committee for International Symposium for Design and Technology of Electronics Packages – SIITME.
- Pietriková, A.: Member of the European Steering Committee for ESTC (Electronic system-integration Technology Conference).
- Slosarčík, S.: Member of the International Steering Committee for IMAPS – Czech and Slovak.

6.4 Membership in Slovak Organizations and Societies

- Banský, J.: Member of "The Convocation of Faculty of Electrical Engineering and Informatics", FEI TU Košice.
- Pietriková, A.: Member of Editorial Board „ACTA ELECTROTECHNICA ET INFORMATICA“.

- Pietriková, A.: Member of Editorial Board of Scientific Bulletin of University of Pitesti – Series: Electronics and Computer Science", (Romania).
- Pietriková, A.: Member of Cultural and Educational Commission KEGA No.3.
- Pietriková, A.: Chair of the Departmental Commission for Ph.D. Study in the Branch "5-2-12 Electrotechnology and Materials" at FEI TU Košice.
- Pietriková, A.: Member of working team of the Accreditation Commission at Ministry of Education, Science, Research and Sport of the Slovak Republic.
- Slosarčík, S.: Member of the Slovak Metrology Society.

7 THESES

Thesis type	Bachelor	Master	Doctoral
Number	13	4	1

8 OTHER ACTIVITIES

8.1 Symposia, Workshops, Conferences, Seminars

- Organizing of European conference ISSE 2011 – 34th International Spring Seminar on Electronics Technology, "New Trends in Micro/Nanotechnology" that was held on May 11 – 15, 2011 in High Tatras (http://isse2011.fei.tuke.sk/). Proceeding was published under IEEE Xplore.

9 PUBLICATIONS

9.1 Monographs

9.2 Journals

[1] PIETRIKOVÁ, A. - BEDNARČÍK, J. - ĎURIŠIN, J.: In situ investigation of the SnAgCu solder alloy microstructure. In: Journal of Alloys and Compounds. Vol. 509, no. 5 (2011), p. 1550–1553. ISSN 0925-8388. (Citations: 1)

[2] SLOSARČÍK, S. - BAUER, R. - CABÚK, P. - JURČIŠIN, M.: Aplikácia nízkoteplotne vypaľovanej keramiky v 3D integrácii systémov. In: Chemické listy. Vol. 105, no. S (2011), p. 571-573. ISSN 0009-2770.

[3] ĎURIŠIN, J. - PIETRIKOVÁ, A. - BEDNARČÍK, J.: Vplyv teploty na fázové transformácie spájkovacích zliatin. In: Chemické listy. Vol. 105, no. (S) (2011), p. 482-484. ISSN 0009-2770.

[4] PIETRIKOVÁ, A. - KRAVČÍK, M.: Reologické vlastnosti ne-newtonovských kvapalín. In: Chemické listy. Vol. 105 (S), no. Symposia (2011), p. 630-632. ISSN 0009-2770.

[5] PIETRIKOVÁ, A. - KRAVČÍK, M. - VEHEC, I.: Špecifiká nanášania bezolovnatých spájkovacích pást. In: Časopis pre elektrotechniku a energetiku. Roč. 17, č. 1 (2011), s. 8-10. ISSN 1335-2547.

[6] PIETRIKOVÁ, A. - KRAVČÍK, M. - VEHEC, I.: Špecifiká nanášania bezolovnatých spájkovacích pást. 2. časť. In: Časopis pre elektrotechniku a energetiku. Roč. 17, č. 2 (2011), s. 34-36. ISSN 1335-2547.

[7] VEHEC, I. - CABÚK, P.: Prehľad možností aplikácie a trendov pri spracovaní nízko teplotne vypaľovaných keramík. In: Časopis pre elektrotechniku a energetiku. Roč. 17, č. 3 (2011), s. 30-32. ISSN 1335-2547.

[8] PIETRIKOVÁ, A. - ĎURIŠIN, J. - LIVOVSKÝ, Ľ.: Hodnotenie kvality a spoľahlivosti spájkovaných spojov. In: EE – Časopis pre elektrotechniku a energetiku. Roč. 17, č. 3 (2011), s. 24-29, 32. ISSN 1335-2547.
[9] PIETRIKOVÁ, A. - KRAVČÍK, M. - BANSKÝ, J.: Solder Paste Dispensers and Their Parameters. In: Electrical Engineering and Informatics 2: Proceeding of the Faculty of Electrical Engineering and Informatics of the Technical University of Košice. - Košice: FEI TU, 2011 S. 413-416. ISBN 978-80-553-0611-7.
[10] PIETRIKOVÁ, A. - ĎURIŠIN, J.: Melting and solidification of solder alloys. - 1 elektronický optický disk (CD-ROM). In: Electrical Engineering and Informatics 2 : proceeding of the Faculty of Electrical Engineering and Informatics of the Technical University of Košice. - Košice: FEI TU, 2011 S. 431-434. ISBN 978-80-553-0611-7.
[11] LIVOVSKÝ, Ľ. - BANSKÝ, J. - PIETRIKOVÁ, A.: Vplyv vlhkosti na fukčnosť súčiastok. In: Electrical Engineering and Informatics 2: Proceeding of the Faculty of Electrical Engineering and Informatics of the Technical University of Košice. - Košice: FEI TU, 2011 S. 417-421. ISBN 978-80-553-0611-7.
[12] VEHEC, I. - BANSKÝ, J. - PIETRIKOVÁ, A.: Ultrazvukovo kontaktované spoje pre elektrotechniku a ich kvalita. In: Electrical Engineering and Informatics 2: Proceeding of the Faculty of Electrical Engineering and Informatics of the Technical University of Košice. - Košice: FEI TU, 2011 S. 422-427. ISBN 978-80-553-0611-7.
[13] KARDOŠ, S. - VEHEC, I. - BANSKÝ, J.: Animated Components and Their Utilization in the Education of the Electronic Materials. In: Electrical Engineering and Informatics 2: Proceeding of the Faculty of Electrical Engineering and Informatics of the Technical University of Košice. - Košice: FEI TU, 2011 S. 428-430. ISBN 978-80-553-0611-7.
[14] DEMETER, D. - BANSKÝ, J. - LIVOVSKÝ, Ľ.: Implementácia kamerového systému do výučby na Katedre technológií v elektronike. - 1 elektronický optický disk (CD-ROM). In: Electrical Engineering and Informatics 2: Proceeding of the Faculty of Electrical Engineering and Informatics of the Technical University of Košice. - Košice: FEI TU, 2011, S. 435-438. ISBN 978-80-553-0611-7.

9.3 Other publications

Publication Type	Conferences		Other
	Abroad	Home	
Number	6	15	1

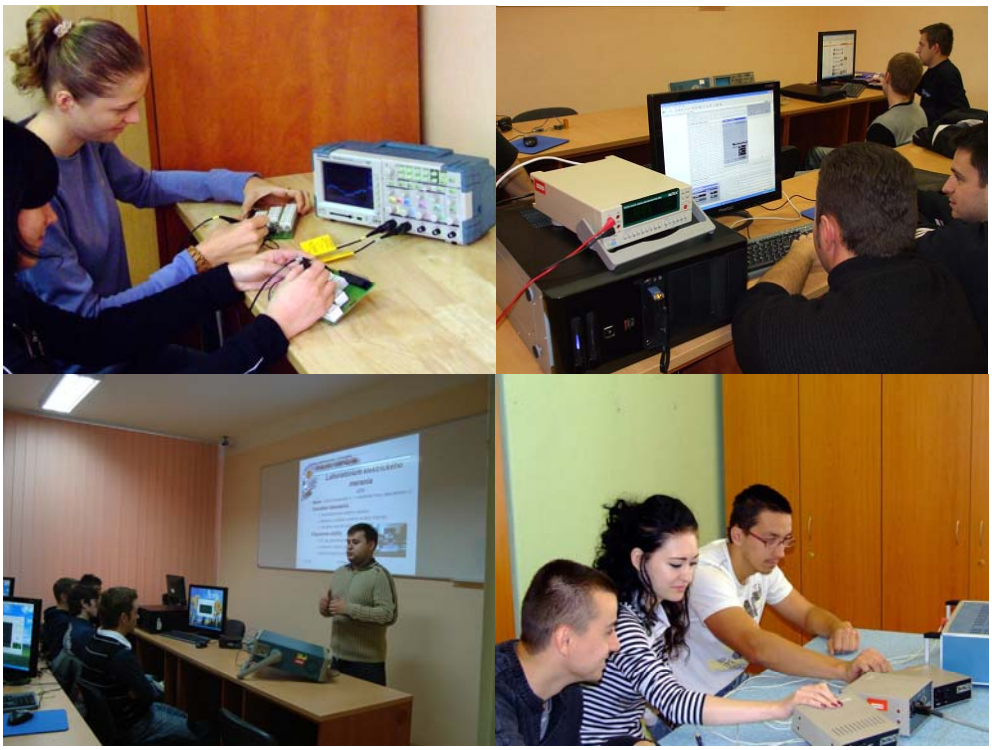
DEPARTMENT OF THEORETICAL ELECTRICAL ENGINEERING AND ELECTRICAL MEASUREMENT

http:/kteem.fei.tuke.sk
Tel./Fax: +421 55 602 2801

Head of Department
Prof. Ing. Dobroslav Kováč, PhD.
E-mail: Dobroslav.Kovac@tuke.sk

1 DEPARTMENT'S PROFILE

Department of Theoretical Electrical Engineering and Electrical Measurement is a workplace, which guarantees the bachelor, master and doctoral study program Industrial Electrical Engineering. In addition to that, department's employees provide education for FEI TU students on all three-education levels. Professional field of the department is oriented on area of theoretical electrical engineering, where students learn the fundamental laws of electrical engineering and area of electrical measurement where students learn basic information and skills regarding the construction of measurement devices and measurement methods. Graduates also gain knowledge about the application of modern methods of automated and industrial measurement.



The research activity of the department is concentrated in the following areas:

- Study of the electrical, magnetic and structural properties of lanthanides and their thin films at low temperatures and in magnetic fields
- Electromagnetic field analysis of the electrotechnical products from the point of view of its electromagnetic compatibility
- Integrated research and exploitation the advanced materials and technologies in the automotive electronics
- Modern virtual, intelligent and automated measuring and control systems.

2 STAFF

Professor: prof. Ing. Dobroslav Kováč, PhD.

Associate Professors: doc. Ing. Ján Dudáš, DrSc.
doc. Ing. Miroslav Mojžiš, PhD.
doc. RNDr. Darina Špaldonová, PhD.
doc. Ing. Iveta Tomčíková, PhD.

Assistant Professors: Ing. Radoslav Bučko
Ing. Milan Guzan, PhD.
Ing. Anna Hodulíková
Ing.Ján Molnár, PhD.
Ing. Tibor Vince, PhD.

Technical staff: Jozef Lenárt
Danuša Topolčaniová

PhD. Students: Ing. Martin Bačko
Ing. Ján Perduľak
Ing. Igor Kolla
Ing. Matúš Ocilka
RNDr. Jozef Bagi (part-time)

3 LABORATORIES

- laboratory for industrial control systems
- two laboratories for electrical measurement
- laboratory for basics of electrical engineering
- PC laboratory
- laboratory for Internet remote measuring systems

4 TEACHING

4.1 Undergraduate Study (Bc.)

Subject	Semester	Lectures/exercises (hours per week)	Name of Lecturer
Fundamentals of Electrical Engineering	1st	2/2	Tomčíková, Dudáš, Hodulíková
Electrotechnics	2nd	3/2	Dudáš, Kováč, Špaldonová, Tomčíková
Digital Measurement	2nd	2/2	Mojžiš
Electrotechnical Practical Lessons	2nd	0/3	Mojžiš, Bučko, Hodulíková, Molnár, Orendáč
MS Office in Technical Practice	2nd	2/2	Špaldonová
Programming of Industrial Applications I	2nd	2/2	Vince
Windows server	3rd	2/2	Vince
Industrial Electrical Engineering I	3rd	3/3	Kováč, Perduľak
CAD systems in Electrotechnics	3rd	2/3	Špaldonová, Tomčíková, Guzan
Informatics and Industrial Measurement	3rd	2/2	Mojžiš
Computational, Office and Multimedial Technique	4th	2/2	Kováč
Programming of Industrial Applications II	4th	2/2	Vince
Semestral Project II	4th	0/3	Kováč
Metrology	5th	2/2	Mojžiš
Modelling and Measurement	5th	2/2	Kováč
Applied Electronics	5th	2/3	Kováč
Database Systems SQL ORACLE	5th	2/2	Vince
Bachelor´s Project	5th	0/6	Kováč, Tomčíková

4.2. Undergraduate Study for Foreign Students (in English language)

Subject	Semester	Lectures/exercises (hours per week)	Name of Lecturers
Fundamentals of Electrical Engineering	1st	2/2	Dudáš, Tomčíková
Electrotechnics	2nd	3/2	Dudáš
Windows server	3rd	2/2	Vince

4.3. Graduate study (Ing.)

Subject	Semester	Lectures/exercises (hours per week)	Name of Lecturer
EMC	8th	2/2	Kováč
Linux II	7th	2/2	Molnár

5 RESEARCH PROJECTS

- ***Centre of Excellence of the Integrated Research & Exploitation the Advanced Materials and Technologies in the Automotive Electronics***. ITMS 26220120055, activity 2.5 - Laboratory for modeling and measuring (MODMER), duration: 2010-2013, co-ordinator: D. Kováč, members: I. Tomčíková, M. Guzan, T. Vince, R. Bučko, J. Molnár, M. Bačko, J. Perduľak.
- ***Virtual laboratory of telermetric systems – 2nd stage***. Project KEGA No. 003-003TUKE-4/2010, duration: 2010-2011, co-ordinator: D. Kováč, members: J. Molnár, T. Vince, I. Tomčíková, D. Špaldonová, M. Guzan, A. Hodulíková.

Non-state financed research projects

- ***Study of electric, magnetic and structural properties of thin films of lanthanides at low temperatures and in magnetic field***. Co-ordinator: J. Dudáš, members: M.Guzan, A. Hodulíková, From other Institutions: S.Gabáni (Slovak Academy of Sciences, Košice), V. Kavečanský (SAS, Košice), I. Gościańska (A. Mickiewicz University, Poznaň, Poland & Institute of Molecular Physics, Polish Academy of Sciences, Poznaň, Poland).

6 CO-OPERATION

6.1. Co-operation in Slovakia

- Department of Experimental Physics, Šafárik University, Košice
- Department of Metals Science, TU Košice
- Faculty of Electrical Engineering and Informatics, Slovak University of Technology, Bratislava
- Institute of Electrical Engineering, Slovak Academy of Science, Bratislava
- Department of Metals, Institute of Experimental Physics, Slovak Academy of Sciences, Košice
- Deparment of Low Temperatures, Institute of Experimental Physics, Slovak Academy of Sciences, Košice
- Institute of Materials Research, Slovak Academy of Sciences, Košice
- Institute of Neurobiology, Slovak Academy of Sciences, Košice
- Volkswagen, Slovakia
- LVD II Slovakia - Unicorn Tornaľa
- Molex Slovakia, a.s.
- SPP, a.s.
- US Steel, Košice

6.2. International Co-operation

- Academy of Science, Czech Republic, Praha
- Czech Technical University, Prague, Czech Republic
- Institute of Molecular Physics, Polish Academy of Sciences, Poznaň, Poland

- Institute of Physics, A.Mickiewicz University, Poznaň, Poland
- Politechnika Czestochowska, Poland
- Stefan cel Mare University, Suceava, Romania
- University of Gliwice, Gliwice, Poland
- University of Valencia, Spain
- University, Budapest, Hungary
- University, Florencia, Italy
- University Hartz, Germany
- University, Miskolcz, Hungary
- West Bohemia University, Plzeň, Czech Republic
- Magna Steyr, Gratz, Austria

6.3. Membership in International Organizations and Societies

- D. Kováč: Member of the team of evaluators of Czech Republic Grant Agency
- D. Kováč: Member of Editorial Board of Journal “Acta Technica”

6.4. Membership in Slovak Organizations and Societies

- J. Dudáš: Member of the Slovak Vacuum Society
- J. Dudáš: Member of the Slovak Electrotechnical Society
- J. Dudáš: Member of the Slovak Physical Society
- D. Kováč: Member of the Slovak Committee for Measuring and Evaluating of Electrical Power
- D. Kováč: Member of Editorial Board of Journal “Acta Electrotechnica et Informatica”
- D. Kováč: Member of Slovak Commission for Ph.D. Study in the Branch of Theoretical Electrical Engineering
- D. Kováč: Member of Scientific council of FEE&I TU of Košice
- D. Kováč: Member of Editorial Board of Journal „Kvalita, inovácia, prosperita“
- M. Mojžiš: Member of Technical Standardization Committee

7 THESES

Thesis type	Bachelor	Master	Doctoral
Number	7	0	2

8 OTHER ACTIVITIES

9 PUBLICATIONS

9.1 Books

[1] TOMČÍKOVÁ, I.: Computer modeling of electromagnetic field of elastomagnetic sensor (In Slovak), FEI TU Košice, 2011, 111 p., ISBN 978-80-553-0708-4.

[2] MOLNÁR, J. - KOVÁČ, D.: Diagnostic system of automobile power supply based on Internet (In Slovak), FEI TU Košice, 2011, 87 p., ISBN 978-80-553-0680-3.

[3] DUDÁŠ, J.: Absurdity of universities and intelligence in Slovakia (In Slovak),

Bratislava: Publisher SSS, 2011, 364 p., ISBN 978 80-8061-456-0.

9.2. Journals

[1] GUZAN, M. - ŠPALDONOVÁ, D. - HODULÍKOVÁ, A. - TOMČÍKOVÁ, I. - GLADYR, A.: Boundary Surface and Load Plane of the Ternary Memory. In: *Electromechanical and energy saving systems*, Vol. 15, No. 3 (2011), pp. 163-167, ISSN 2072–2052.

[2] TOMČÍKOVÁ, I. - ROMASHIHINA, Z.: Modelling of field problems in MATLAB. In: *Electromechanical and energy saving systems*, Vol. 14, No. 2 (2011), pp. 58-63, ISSN 2072-2052.

[3] ŠPALDONOVÁ, D. - RYKOV, G.: Simple simulation of long-distance line. In: *Electromechanical and energy saving systems,* Vol. 14, No. 2 (2011), p. 166-170, ISSN 2072-2052.

[4] ORENDÁČOVÁ, J. - ORENDÁČ, M. - MOJŽIŠ, M. - LABUN, J. - MARTONČÍKOVÁ, M. - SAGANOVÁ, K. - LIEVAJOVÁ, K. - BLAŠKO, J. - ABDIOVÁ, H. - GÁLIK, J. - RAČEKOVÁ, E.: Effects of short-duration electromagnetic radiation on early postnatal neurogenesis in rats: Fos and NADPH-d histochemical studies. In: *Acta Histochemica*, Vol. 113, No. 7 (2011), p. 723-728, ISSN 0065-1281.

[5] GUZAN, M. - MOJŽIŠ, M.: Line voltage comparing at two places of consumption by automated measuring (In Slovak). In: *Časopis pre elektrotechniku a energetiku*, Vol. 17, No. 2 (2011), pp. 27-30, ISSN 1335-2547.

[6] ŠPÁNY, V. - GALAJDA, P. - GUZAN, M. - PIVKA, L. - OLEJÁR, M.: Chua's singularities: Great miracles in circuit theory. In: *International Journal of Bifurcation and Chaos (IJBC)*, Vol. 20, No. 10 (2010), pp. 2993-3006, ISSN 0218-1274.

[7] GUZAN, M. - SOBOTA, B.: Visualization of chaotic attractor in 3D space. In: *Journal of Electrical and Electronics Engineering*, Vol. 3, No. 2 (2010), pp. 95-98, ISSN 1844-6035.

[8] - SOBOTA, B.: 3D visualization of Chua`S circuit dynamics. In: *Journal of Information, Control and Management Systems*, Vol. 8, No. 4 (2010), pp. 311-316, ISSN 1336-1716.

[9] GUZAN, M.: Elementary memory structures (In Slovak). In: *Transfer*, Vol. 2, No. 4 (2010), pp. 14-15, ISSN 1337-9747.

[10] GUZAN, M. - BUČKO, R.: Morphological Complexity of State Space Quaternary Memory. In: *Electrical Engineering and Informatics 2: Proceeding of the Faculty of Electrical Engineering and Informatics of the Technical University of Košice. - Košice: TU*, 2011, pp. 518-521, ISBN 978-80-553-0611-7.

[11] BODOR, M. - DUDRÍK, J. - PERDUĽAK, J.: ZVZCS PWM converter using secondary active clamp. In: *Acta Electrotechnica et Informatica*, Vol. 11, No. 3 (2011), pp. 26-30, ISSN 1335-8243.

9.3. Textbooks

[1] VINCE, T. - BAČKO, M. - BUČKO, R.: Windows Server, Lectures (In Slovak) *FEI TU Košice*, 2011, 82 p., ISBN 978-80-553-0757-2.

[2] TOMČÍKOVÁ, I.: Basics of electrical engineering, Lectures (In Slovak) *FEI TU Košice*, 2011, 104 p., ISBN 978-80-8086-179-7.

[3] ŠPALDONOVÁ, D.: Introduction to the OrCAD program using (In Slovak), *FEI TU Košice*, 2011, 77 p., ISBN 978-80-553-0765-7.

[4] MOJŽIŠ, M. - MOLNÁR, J.: Practical Electrotechnics 2 (In Slovak), *FEI TU Košice*, 2011, 67 p., ISBN 978-80-553-0656-8.

[5] DUDÁŠ, J. - MOLNÁR, J.: Electrotechnics: Basic circuit analysis, Technical University of Košice, 2011, 112 p., ISBN 978-80-89284-76-4.

[6] MOJŽIŠ, M.: Digital measurement equipments (In Slovak), *FEI TU Košice*, 2011, 71 p., ISBN 978-80-553-0657-5.

[7] MOJŽIŠ, M.: Industrial measurement, (In Slovak), *FEI TU Košice*, 77 p., ISBN 978-80-553-0683-4.

[8] MOJŽIŠ, M. - GUZAN, M.: Metrology Laboratory Exercises (In Slovak), *FEI TU Košice*, 2011, 81 p., ISBN 978-80-553-0682-7.

[9] KOVÁČOVÁ, I. - KOVÁČ, D.: Industrial electrical engineering – modeling of converters, I. part (In Slovak), *FEI TU Košice*, 2011, 66 p., ISBN 978-80-553-0617-9.

[10] KOVÁČOVÁ, I. - KOVÁČ, D.: Industrial electrical engineering – modeling of converters, II. part (In Slovak), *FEI TU Košice*, 2011, 68 p., ISBN 978-80-553-0618-6 .

[11] KOVÁČ, D. - KOVÁČOVÁ, I.: Automated measuring systems (In Slovak), *FEI TU Košice*, 2011, 80 p., ISBN 978-80-553-0616-2.

9.4. Other publications

Publication Type	Confereces		Other
	Foreign	Home	
Number	21	23	2