TECHNICAL UNIVERSITY OF KOŠICE

FACULTY OF ELECTRICAL ENGINEERING AND INFORMATICS

ANNUAL REPORT 2015

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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 (TUKE). 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. The number of students currently attending nine TUKE Faculties exceeds 16,000. Approximately 13,000 of them are full-time students, out of which there are 8,500 Bachelor students, 4,000 Master students and over 500 PhD students. Almost 900 teachers work here, and the same number of research and administrative staff.

Allow me to introduce Faculty of Electrical Engineering and Informatics, Technical University in Košice in Slovakia. Faculty is a school with approx. 2000 students and 158 teachers and research associates. We have 136 PhD students in our courses. We offer more than 35 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 11 educational and 8 research international projects granted by agencies from EEC countries and also participates on more than 55 research projects granted by Slovak agencies. All this activity brings very interesting and highly valuable results.

There is a small community of 8 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 kindin 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 15 000 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 223 and among them 29 professors, 35 associate professors, 86 assistant professors, 4 research workers, 65 administrative staff and technicians.
- The number of BSc. students is approximately 1400, number of MSc. students is 600 and number of PhD students approximately 130, every year.

Number of the Bc. students in academic year 2015-2016

Bc. level			
1. year	**2. year**	**3. year**	**Sum**
665	390	338	1393

Number of the Ing. students in academic year 2015-2016

MSc. (Ing.) level		
1. year	**2. year**	**Sum**
279	357	636

Overall number of the students in academic year 2015-2016

Bc. level	MSc. (Ing.) level	PhD. level	Total number
1393	636	136	2165

The student numbers in the academic year 2015/16 by study programs area (number of students vs. study program).

Branch of study	Bc.	Ing.	PhD.	Total
Advanced Materials and Technologies in Automotive Electronics	0	20	1	21
Electric Power Engineering	141	48	18	207
Informatics	590	252	34	876
Automotive Electronics	40	0	0	40
Electronics	32	0	0	32
Infoelectronics	0	15	4	19
Telecommunications	98	0	1	99
Multimedia telecommunications	0	42	0	42
Cybernetics	113	0	0	113
Cybernetics and info control systems	0	35	5	40
Intelligent Systems	0	0	17	17
Industrial Control Engineering	46	25	0	71
Electrical Engineering	0	48	0	48
Computer modeling	46	22	0	68
Business Informatics	176	108	12	296
Physical Engineering of modern materials	9	4	1	14
Artificial Intelligence	0	17	1	18
Control of Electromechanical Systems	102	0	0	102
Mechatronics systems	0	0	2	2
Electrotechnics systems	0	0	10	10
Electronic systems and signal processing	0	0	12	12
Multimedia communication technology	0	0	11	11
Industrial Electrical Engineering	0	0	2	2
Technology in automotive electronics	0	0	5	5
Total	**1393**	**636**	**136**	

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. Alena Pietriková, CSc..	responsible for research and development and doctoral studies
	Ing. Mária Gamcová, PhD.	responsible for the Faculty promotion and International Relationships
	doc. Ing. Ľubomír Beňa, PhD.	responsible for Bachelor and Master's studies
	prof. Ing. Ján Šaliga, PhD.	responsible for International projects coordinating and for publicising activities
	prof. Ing. Roman Cimbala, PhD.	responsible for development and External Relations
Faculty Secretary:	JUDr. Mária Girmanová 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 and Industrial Electrical Engineering	KTPE
Department of Electrical Engineering and, Mechatronics	KEM
Department of Electric Power Engineering	KEE

CENTRES OF EXCELLENCE

The faculty has two Centres of Excellence:

1. **Centre 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

COMPUTER CENTRE

Address: Park Komenského 2, 042 00 Košice, Slovak Republic
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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 more than 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.

EDUCATION AND COURSES

Courses offered

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

- Bachelor's Degree courses (3 years) leading to degree Bc.
- Master's Degree courses (2 years) leading to degree Ing.
- Doctoral Study courses (4 years) leading to degree PhD.

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

Bachelor courses

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

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

Master's Degree courses

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

- Informatics
- Multimedia Telecommunication

- Electrical Engineering
- Electric Power Engineering
- Computer modeling
- Advenced Materials and Technologies in Automotive Electronics
- Industrial Control Engineering
- Artificial Intelligence
- Cybernetics and Information-Control Systems
- Infoeletronics
- Business Informatics

PhD. courses

Ph.D. courses lasts in daily form 4 years:

- Electric Power Engineering
- Electrical Engineering Systems
- Mechatronic Systems
- Infoelectronics
- Informatics
- Business Informatics
- Cybernetics and Information-Control Systems
- Telecommunications
- Artificial Intelligence
- Intelligent systems
- Industrial Electrical Engineering
- Advanced Materials and Technologies in Automotive Electronics
- Electronic systems and Signal processing
- Multimedia communication technology
- Technology in automotive electronics
- Physical Engineering of modern materials

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)	8
7th EU program	0
Slovak – Hungarian program	1
Slovak – Czech program	2
CEEPUS	2
Leonardo da Vinci	1
Erasmus program	2
Erasmus MUNDUS	1
TEMPUS program	2
Subtotal	19
National projects supported by VEGA	22
National projects supported by KEGA	17
National projects supported by APVV	3+5
National projects supported by Agency	9+4
Total	**79**

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)
- The Agency of the Ministry of Education, Science, Research and Sport of the Slovak Republic for the Structural Funds of EU (Agency)

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 2015 there were accomplished 17 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:

CEEPUS program

- Active Methods in Teaching and Learning Mathematics, CIII-HU-0028-09-1516 (co-ordinator: Štefan Berežný, department: KM)
- International Cooperation in Computer Science, CIII-HU-0019-11-1516 (co-ordinator: Csaba Szabó, department: KPI)

Leonardo da Vinci program

- Virtual and Practical Applications to Electronic Assembling Technology (co-ordinator: Alena Pietriková, department: KTE)

COST projects

- Truthworthy Manufacturing and Utilization of Secure Device COST IC1204 (co-ordinator: Miloš Drutarovský, department: KEMT)
- Cooperative Radio Communication for Green Smart Environments – COST IC1004 (co-ordinator: Ľubomír Doboš, department: KEMT)
- Integrating Biometrics and Forensics for the Digital age COST IC1106 (co-ordinator: Matúš Pleva, department: KEMT)
- Wireless Power Transmission for Sustainable Electronics (WiPE) COST IC1301 (co-ordinator: Pavol Galajda, department: KEMT)
- Algorithms, Architectures and Platforms for Enhanced Living environments COST IC 1303 (co-ordinator: Dušan Kocur, department: KEMT)
- Semantic keyword-based search on structured data sources COST IC 1302 (co-ordinator: Peter Butka, department: KKUI)
- Autonomous Control for a Reliable Internet of Services COST IC 1304 (co-ordinator: Peter Bednár, department: KKUI)
- Civil Engineering Applications of Ground Penetrating Radar COST TU 1208 (co-ordinator: Dušan Kocur, department: KEMT)

Slovak – Hungarian program

- Výskum a vývoj modulov prejazykovo-adaptívne multimodálne rozhrania (co-ordinator: Stanislav Ondáš, department: KEMT)

Slovak – Czech program

- Modern informetric methods for the evaluation of scientific research (co-ordinator: Ján Paralič, department: KKUI)
- Multifyzikálne výpočty v elektrických pohonoch (co-ordinator: Želmíra Ferková, department: KEM)

Erasmus projects

- Strategic Alignment of Electrical and Information Engineering in European Higher Education Institutions (contact: Ján Liguš, department: KKUI)
- European Digital Virtual Design Lab (abbr. eDiViDe, contact: Miloš Drutarovský, department: KEMT)
- INNOSOC – Inovative ICT Solutions for the Societal Challenges (contact: Ľubomír Doboš, Mária Gamcová, department: KEMT)

Erasmus MUNDUS

- THELXINOE: Erasmus Euro-Oceanian Smart City Network (contact: Ľubomír Doboš, department: KEMT)

TEMPUS program

- Informatics and Management: Bologna-style Qualifications Frameworks (co-ordinator: Ján Genči, department: KPI)
- Technological Transfer Network (abbr.: TecTNet, co-ordinator: Ján Šaliga, department: KEMT)

DEPARTMENT OF ELECTRIC POWER ENGINEERING

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Head of Department
Dr.h.c.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 independent science and research unit of the faculty. The most important structural changes of the department were:

- 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 Engineering into the Department of Electric Power Engineering on the 1st October 2003

These structural changes influenced the department activities and staff changes. The Department of Electric Power Engineering currently has 3 professors, 3 associate professors, 10 assistant professors and 16 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 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 enhances and improves educational process also in cooperation with foreign universities through 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 and solar system properties
- Diagnostics of electric power equipment
- High-quality results of science and research activities of the department staff are ensured by the extensive 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, Ph.D.
Dr.h.c. prof. Ing. Michal Kolcun, Ph.D.
prof. Ing. Iraida Kolcunová, Ph.D.

Associate Professors:
doc. Ing. Ľubomír Beňa, Ph.D.
doc. Ing. Alexander Mészáros, Ph.D.
doc. Ing. Juraj Kurimský, Ph.D.

Assistant Professors:
Ing. Jozef Balogh, Ph.D.
Dr. Ing. Bystrík Dolník
Ing. Jaroslav Džmura, Ph.D.
Ing. Marek Hvizdoš, Ph.D. (until 31.05.2015)
Ing. Stanislav Ilenin, Ph.D.
Ing. Martin Kanálik, Ph.D.
Ing. Dušan Medveď, Ph.D.
Ing. Marek Pavlík Ph.D. (since 01.02.2015)
Ing. Jaroslav Petráš, Ph.D.
Ing. Ján Tkáč, CSc.

Technical Staff: doc. Ing. Pavel Novák, CSc.
Dagmar Kramolišová
doc. Ing. Ladislav Varga, Ph.D.
Ing. Jana Varnavčinová

Ph.D. Students: Ing. Martin German-Sobek (until 30.06.2015)
Ing. Roman Jakubčák (until 30.06.2015)
Ing. Jozef Király (until 31.01.2015)
Ing. Matúš Novák (until 31.01.2015)
Ing. Marek Pavlík (until 31.01.2015)
Ing. Ján Zbojovský (until 30.06.2015)
Ing. Zsolt Čonka
Ing. Miroslav Kmec
Ing. Lukáš Lisoň
Ing. Miroslav Mikita
Ing. Samuel Bucko
Ing. Michal Kosterec
Ing. Martin Vojtek
Ing. Lukáš Kruželák (since 01.09.2015)
Ing. Daniel Kuchár (since 01.09.2015)
Ing. Michal Špes (since 01.09.2015)

3 LABORATORIES

- Three PC Laboratories
- Laboratory of Electrical Relays
- 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 Intelligent Systems
- Electric Power Systems Control Laboratory, Joint Laboratory of Department of Electric Power Engineering TU FEI Košice and ABB ELEKTRO, Ltd., Bratislava
- Laboratory of Electro-Magnetic Compatibility
- Laboratory of Photovoltaics

4 TEACHING

4.1 Undergraduate Study (Bc.)

Subject	Semester	Lectures/exercises (Hours per week)	Lecturer
Fundamentals of Electrical Engineering	1st	2/2	Cimbala
Introduction to programming and networks	1st	0/2	Petráš

Subject	Semester	Lectures/exercises (Hours per week)	Lecturer
Fundamentals of environmental engineering	2nd	2/2	Mészáros
Programming	2nd	0/2	Petráš
Power transmission	3rd	2/2	Varga
Light - technology	3rd	2/2	Beňa
Designing in electric power engineering	3rd	2/2	Ilenin
Database systems - SQL Oracle	4th	2/2	Petráš
Electric Power Plants	4th	2/2	Kolcun
Measurement in electric power engineering	4th	2/2	Kurimský
Faults in Electric Power System	4th	2/2	Beňa
Computers in Electric Power Engineering	4th	1/2	Cimbala
Overvoltage protection of computer networks	4th	3/1	Dolník
Bachelor Project	5th	0/8	(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)
Electrical relaying in electric power system	6th	2/3	Hvizdoš
Conversion of Electrical Energy	6th	2/2	Medveď
Unconventional energy sources	6th	2/2	Tkáč
Prophylactics of power engineering equipment	6th	2/2	Kolcunová
Professional experience in an enterprise	6th	0/4	Džmura
Safety at work on electric devices	6th	2/2	Balogh
Overvoltage protection of computer networks	6th	3/1	Dolník

4.2 Graduate Study (Ing.)

Subject	Semester	Lectures/exercises (Hours per week)	Lecturer
Automatization of Electric Power Plant Service	7th	2/2	Cimbala
Quality and reliability of electric power delivery	7th	2/2	Beňa Kanálik
Simulation in Electric Power System	7th	2/3	Medveď
Optimisation of Electric Power System Operation	7th	2/3	Kolcun
Electroheat Technology	7th	2/2	Novák
Overvoltages in Electric Networks	7th	2/2	Dolník
Basics of Research Work	7th	1/3	Kurimský
Electrical power network	8th	2/2	Varga
Term project	8th	0/4	(Supervisors)
Transient stability of power	8th	2/2	Džmura

Subject	Semester	Lectures/exercises (Hours per week)	Lecturer
system			
Electric power system operation control	8th	2/3	Kolcun
Electric power systems and the environment	8th	2/2	Mészáros
Design of the illuminating systems	8th	1/3	Beňa
Thesis project 2	9th	0/8	(Supervisors)
Diagnostic in electric power engineering	9th	2/2	Kolcunová
Protection Systems of Electric Power System	9th	2/2	Hvizdoš
Automated electrical installation systems	9th	2/2	Džmura
Electromagnetic compatibility	9th	3/1	Dolník
Master Thesis II	10th	0/18	(Supervisors)
Management of Electric Power Enterprises	10th	2/0	Cimbala
Safety at work on electric devices	10th	2/2	Balogh

4.3 Postgraduate Study (PhD.)

Subject	Semester	Lectures/exercises (Hours per week)	Lecturer
Theoretic electric power engineering (4)	1st	0/2	Cimbala Kolcun Kolcunová Meszáros Beňa
Scientific Activity 1 (4)	1st	0/8	(Supervisors)
Electricity supply system analysis (4)	2nd	0/10	Cimbala Kolcun Kolcunová Mészáros Beňa
Subject of specialised area (4)	3rd	0/2	Cimbala Kolcun Kolcunová Mészáros Beňa
Scientific Activity 2 (4)	3rd	0/16	(Supervisors)
Scientific Activity 3 (4)	5th	0/10	(Supervisors)
Scientific Activity 4 (4)	6th	0/16	(Supervisors)
Scientific Activity 5 (4)	7th	0/10	(Supervisors)

5 RESEARCH PROJECTS

- *Research of dynamic processes in the electric power system of the Slovak Republic.* Scientific grant agency project (S.G.A.) No. *1/0388/13,* duration: *2013-2015,* co-ordinator: Kolcun, M.
- *Analysis of Influences of Degrading Factors on Electro - Physical Structure Changes of Progressive Electrical Engineering Insulation Materials.* Scientific grant agency project (S.G.A.) No. *1/0311/15,* duration: *2015-2018,* co-ordinator: Cimbala, R.

- *Research of the penetrating of high frequency electromagnetic waves through ecological building materials.* Scientific grant agency project (S.G.A.) No. *1/0312/15,* duration: *2015-2018,* co-ordinator: Kolcunová, I.
- *Smart electric installation as a tool for life quality enhancement for seniors and handicapped.* Cultural and Educational Grant Agency project (KEGA) No. 002TUKE-4/2015, duration: 2015 - 2016, co-ordinator: Džmura, J.
- *University Science Park Technicom for innovative applications with support of knowledge technologies (Univerzitný vedecký park TECHNICOM pre inovačné aplikácie s podporou znalostných technológií),* Agency of the Ministry of Education, Science, Research and Sport of the Slovak Republic for the Structural Funds of EU, No. 26220220182, duration: 2013 – 2015
- *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 – 2015

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
- Nuclear Power Plant EMO, Mochovce
- 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.,

6.1.1. Visitors to the Department

- Ing. Lukáš Radil, Ph.D. – Brno University of Technology, Czech Republic
- Ing. Michal Krbal, Ph.D. – Brno University of Technology, Czech Republic
- Dr. Ing. Wieslawa Malska, Ph.D. – Rzeszow University of Technology, Poland
- Dr. Ing. Tomasz Binkowski, Ph.D. – Rzeszow University of Technology, Poland
- Dr. hab Ing. Janusz Sowinski – Czestochowa University of Technology, Poland

- Dr. Rafal Sobota – Czestochowa University of Technology, Poland
- Prof. Ph.D. Vladimír J. Frolov DrSc., Polytechnical University Saint Petersburg State, Russia
- Assoce prof. Sergei M. Dudkin, Ph.D., Polytechnical University Saint Petersburg State, Russia

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
- Czestochowa University of Technology, Poland
- Akademia Górniczo - Hutnicza, Krakow, Poland
- Technical University of Riga, Latvia
- Technical University of Tallinn, Estonia
- COMTEST Ltd. Netherlands
- 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 of Varna, Bulgaria
- ABB Switzerland Ltd, Switzerland

6.2.1. Visit of Staff Members to Foreign Institutions

- Balogh, J.: ABB, Ltd., Elektro-Praga, Education Centre KNX, Jablonec nad Nisou, Czech Republic, 8.-14.2.2015
- Džmura, J.: ABB, Ltd., Elektro-Praga, , Education Centre KNX, Jablonec nad Nisou, Czech Republic, 8.-14.2.2015
- Petráš, J.: ABB, Ltd., Elektro-Praga, , Education Centre KNX, Jablonec nad Nisou, Czech Republic, 8.-14.2.2015
- Mikita, M.: Brno University of Technology, Czech Republic, 15.2.-15.5.2015
- Bucko, S.: WBU Pilsen, Czech Republic, 22.2.-22.5.2015
- Hvizdoš, M.: Czech Technical University in Prague, Czech Republic, 3.-8.5.2015
- Ilenin, S.: Czech Technical University in Prague, Czech Republic, 3.-8.5.2015
- Mészáros, A.: ÓBUDA University Budapest, Hungary, 12.-15.5.2015
- Kolcun, M.: VŠB-Technical University of Ostrava, Czech Republic, 20.-22.5.2015
- Kolcunová, I.: VŠB-Technical University of Ostrava, Czech Republic, 20.-22.5.2015
- Pavlík, M.: VŠB-Technical University of Ostrava, Czech Republic, 20.-22.5.2015
- Čonka, Z.: VŠB-Technical University of Ostrava, Czech Republic, 20.-22.5.2015
- Lisoň, L.: VŠB-Technical University of Ostrava, Czech Republic, 20.-22.5.2015
- Dolník, B.: VŠB-Technical University of Ostrava, Czech Republic, 20.-22.5.2015
- Tkáč, J.: Czech Technical University in Prague, Czech Republic, 14.-19.6.2015
- Pavlík, M.: WBU Pilsen, Czech Republic, 23.-29.8.2015
- Lisoň, L.: WBU Pilsen, Czech Republic, 23.-29.8.2015

- Cimbala, R.: Frankfurt am Main, Germany, 6.8.2015
- Čonka, Z.: ÓBUDA University Budapest, Hungary, 18.-19.11.2015
- Kolcunová, I.: Polytechnic University Saint Petersburg, Russia, 7.-13.12.2015

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.: Member of Editorial Board Journal Rynek Energii, Lublin, Poland
- Kolcun, M.: Honorary Professor of Óbuda University, Hungary
- Kolcunová, I.: Honorary Professor of Sankt - Petersburg Power Education Institute of Power Engineering, State Department of Russian Federation, Russia
- Kolcun, M.: nomination of Dr.h.c. Czestochowa University of Technology, Poland
- 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
- 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
- Ilenin, S.: 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
- 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
- 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

7 THESES

Thesis type	Bachelor	Master	Doctoral
Number	16	34	8

8 OTHER ACTIVITIES

8.1 Conferences, Seminars

- Symposium: Elektroenergetika 2015, 16.-18.9.2015, Stará Lesná - High Tatras, Slovak Republic
- Specialized Seminar: Aktuálne otázky elektroenergetiky SR (SMART GRID, SMART HOME, SMART...) (Current topics of Slovak Electric Power Engineering), 5.-6.11.2015, Poráč, Slovak Republic.

8.2 Projects for Industry Companies

- Kolcun, M.: Rozvojový odborný kurz Technika pre netechnikov II počas LS 2015 (Developing expert course Technology for non-technicians). VSE, a.s. Košice, 2015 Slovak Republic
- Kolcun, M.: Kurz Elektroenergetika pre netechnikov (Course of Electric Power Engineering for non-technicians). SEPS, a.s. Bratislava, 2015 Slovak Republic
- Kolcun, M.: Vypracovanie vstupných podkladov pre vykonanie reálnej skúšky "Štartu z tmy" DG Moldava alebo PVE Ružín – EVO v termíne 10/11/2015, vyhodnotenie skúšok a návrh riešení – štúdia (The study of input parameter evaluation for real test of "start from the dark" in DG Moldava or PVE Ružín – EVO in 10/11/2015). SEPS, a.s. Bratislava, 2015 Slovak Republic
- Cimbala, R.: Kalibrácia (Calibration), U.S. Steel Košice, s.r.o. 2015 Slovak Republic
- Kolcun, M.: štúdia "Databáza atribútov zariadení prenosovej sústavy" (The study of Transmission system device database). SEPS, a.s. Bratislava, 2015 Slovak Republic
- Cimbala, R.: Analýza charakteru reaktorov elektroenergetickej napájacej siete (Electric supply network reactor analysis). PSM, s.r.o. Košice, 2015 Slovak Republic
- Cimbala, R.: Skúšky chráničov na impulz 3000A, 8/20μs (Protector tests with the pulse 3000A, 8/20μs). SEZ Krompachy, a.s. 2015 Slovak Republic
- Beňa, Ľ.: Kurz návrhu osvetlenia v programme Dialux (The course of lighting design in Dialux programme), O.S.V. O. comp, a.s. Prešov, 2015 Slovak Republic

8.3 Compositions for Dissertation Examinations

- Bucko, S.: Modern Liquid Insulation Systems in Electric Power Engineering (Cimbala, R.)
- Kosterec, M.: Analysis of electromagnetic fields from sources affecting technical and biological systems. (Kurimský, J.)
- Kurimský, P.: Research of the Electromagnetic Waves Propagation in Environment (Mészáros, A.)
- Mikita, M.: Research of cooperation of renewable energy sources in distribution system (Kolcun, M.)
- Vojtek, M.: Optimization of the operation of renewable energy sources in the electric power system (Kolcun, M.)

9 PUBLICATIONS

9.1 Journals

1. CIMBALA, R. - KIRÁLY, J. - GERMAN-SOBEK, M. - BUCKO, S. - KURIMSKÝ, J. - DŽMURA, J.: Polarizačné procesy v magnetických kvapalinách - 2015. In: Chemické listy. Vol. 109, no. 2 (2015), p. 117-124. ISSN 0009-2770

2. RAJŇÁK, M. - KOPČANSKÝ, P. - GDOVINOVÁ, V. - ZÁVIŠOVÁ, V. - ANTAL, I. - KURIMSKÝ, J. - DOLNÍK, B. - JAZDYN, J. - TOMAŠOVIČOVÁ, N. - KONERACKÁ, M. - TIMKO, M.: Dielectric Spectroscopy of Ferronematics Based on 6CHBT Liquid Crystal - 2015. In: Molecular Crystals and Liquid Crystals. Vol. 611, no. 1 (2015), p. 40-48. ISSN 1563-5287 *http://dx.doi.org/10.1080/15421406.2015.1027993*.
3. RAJŇÁK, M. - PETRENKO, V. I. - AVDEEV, M. V. - IVANKOV, O. I. - FEOKTYSTOV, A. - DOLNÍK, B. - KURIMSKÝ, J. - KOPČANSKÝ, P. - TIMKO, M.: Direct observation of electric field induced pattern formation and particle aggregation in ferrofluids - 2015. In: Applied Physics Letters. Vol. 107, no. 7 (2015), p. 073108-1-073108-5. ISSN 0003-6951
4. KOŠICKÝ, T. - KOLCUN, M. - BEŇA, Ľ.: Influence of State of Charge Level on Frequency Control Reserve Provision by Energy Storage Systems - 2015. In: Transactions on Electrical Engineering. Vol. 4, no. 2 (2015), p. 36-41. ISSN 1805-3386
5. DOLNÍK, B.: The analysis of voltage variation in low voltage network - 2015. In: Electrotehnica, Electronica, Automatica. Vol. 63, no. 3 (2015), p. 7-15. ISSN 1582-5175
6. KURIMSKÝ, J. - VÝROSTKO, P.: Variácia prierazného napätia polypropylénovej fólie počas urýchleného starnutia - 2015. In: Starnutie elektroizolačných systémov. Vol. 10, No. 1 (2015), p. 10-12. ISSN 1337-0103 *http://jeen.fei.tuke.sk/index.php/JSES/article/view/357*.
7. KURIMSKÝ, J. - KOSTEREC, M.: Analýza tepelného poľa vo vn cievkach točivých strojov - 2015. In: Starnutie elektroizolačných systémov. Vol. 10, No. 1 (2015), p. 7-9. ISSN 1337-0103 *http://jeen.fei.tuke.sk/index.php/JSES/article/view/356*.
8. KURIMSKÝ, J.: Wavelet-based filter for PD signal processing - 2015. In: Starnutie elektroizolačných systémov. Vol. 10, No. 1 (2015), p. 5-6. ISSN 1337-0103
9. KOŠICKÝ, T. - KOLCUN, M. - BEŇA, Ľ.: Vplyv udržania hodnoty nabitia batériových systémov na kvalitu regulačného výkonu - 2015. In: Elektroenergetika. Vol. 8, No. 1 (2015), p. 5-9. ISSN 1337-6756 *http://jeen.fei.tuke.sk/index.php/jeen/article/view/351*.
10. KOŠICKÝ, T. - BEŇA, Ľ. - KOLCUN, M.: Optimalizácia nasadenia systémov akumulácie elektrickej energie - 2015. In: Elektroenergetika. Vol. 8, No. 1 (2015), p. 15-19. ISSN 1337-6756 *http://jeen.fei.tuke.sk/index.php/jeen/article/view/353*.
11. DZIAK, J. - KMEC, M. - BEŇA, Ľ.: Admitančný model pre simulovanie TCSC na riadenie tokov výkonov v prostredí Simulink - 2015. In: Elektroenergetika. Vol. 8., No. 1 (2015), p. 10-14. ISSN 1337-6756 *http://jeen.fei.tuke.sk/index.php/jeen*.
12. KAPRAĽ, T. - KOLCUNOVÁ, I. - PAVLÍK, M. - DOLNÍK, B.: Porovnanie manuálneho a automatizovaného merania účinnosti tienenia elektromagnetického poľa - 2015. In: Elektroenergetika. Vol. 8, No. 1 (2015), p. 24-27. ISSN 1337-6756 *http://jeen.fei.tuke.sk/index.php/jeen/article/view/360*.
13. KANÁLIK, M.: Výpočet vplyvu parametrov štvorsystémového vzdušného vedenia na úroveň nesymetrie napätia - 2015. In: Elektroenergetika. Vol. 8, No. 2 (2015), p. 5-8. ISSN 1337-6756

14. MEDVEĎ, D. - KANÁLIK, M.: Riešenie usporiadania elektromagnetického poľa v okolí elektrických silových vedení - 2015. In: Elektroenergetika. Vol. 8, No. 2 (2015), p. 9-12. ISSN 1337-6756
15. MIKITA, M. - KOLCUN, M.: Simulation Model Of Pumped Hydroelectric Power Plant - 2015. In: Acta Electrotechnica et Informatica. Vol. 15, No. 2 (2015), p. 57-61. ISSN 1335-8243 *http://aei.tuke.sk/papers/2015/2/11.pdf*.
16. HALAMA, M. - TKÁČ, J. - MONBALIU, O. - ZHU, Y.: Non-destructive technique for evaluation of degradation on solar cells - 2015. In: Materials Science Forum: Corrosion in power industry. Vol. 811 (2015), p. 3-10. ISSN 0255-5476

9.2 Textbooks

1. KOLCUN, M. - RUSEK, B.: Use of selected forecasting methods for the planning of price for biomass applicable to renewable energy sources – 1st ed. - Košice: TU - 2015. 95 p. [CD-ROM]. ISBN 978-80-553-1944-5.
2. ILENIN, S.: Designing in electric power engineering – 1st ed. - Košice: TU - 2015. 164 p. [CD-ROM]. ISBN 978-80-553-1978-0.
3. ILENIN, S. - VARGA, L.: Elektrické siete Výpočty z mechaniky vonkajších elektrických vedení - 1st ed. - Košice: TU - 2015. 69 p. [CD-ROM]. ISBN 978-80-553-2055-7.
4. CIMBALA, R.: Computers in Electric Power Engineering – 1st ed. - Košice: TU - 2015. - 122 p. ISBN 978-80-553-1963-6.
5. MÉSZÁROS, A.: Ekonomika v elektroenergetike – 1st ed. - Košice: Technická univerzita - 2015. - 229 p. ISBN 978-80-553-2146-2.
6. MÉSZÁROS, A.: Základy environmentalistiky – 1st ed. - Košice: Technická univerzita - 2015. - 269 p. - ISBN 978-80-553-2145-5.
7. TKÁČ, J. - BALOGH, J. - DŽMURA, J.: Meranie v technike vysokých napätí – 1st ed. - Košice: Technická univerzita - 2015. - 77 p. ISBN 978-80-553-2087-8.
8. DOLNÍK, B.: Overvoltage protection of PC networks – 1st ed. - Košice: Technická univerzita - 2015. - 180 p. ISBN 978-80-553-1655-0.
9. TKÁČ, J. - HVIZDOŠ, M.: Netradičné zdroje energie – 1st ed. - Košice: TU - 2015. - 104 p. [CD-ROM]. ISBN 978-80-553-2061-8.
10. DOLNÍK, B.: Prepätia v elektrických sieťach – 1st ed. - Košice: Technická univerzita - 2015. - [129] p. ISBN 978-80-553-1975-9.
11. MEDVEĎ, D.: Modelovanie v elektroenergetike - 1st ed. - Košice: TU - 2015. - 161 p. [CD-ROM]. ISBN 978-80-553-2071-7.
12. BEŇA, Ľ. - HVIZDOŠ, M. - KANÁLIK, M.: Poruchy v elektrizačnej sústave – 1st ed. - Košice: Technická univerzita - 2015. - 65 p. ISBN 978-80-553-2060-1.

9.3 Conferences

1. KOLCUN, M. - KANÁLIK, M. - MEDVEĎ, D. - ČONKA, Zs.: Measuring of real value of short-circuit power in Island Operation Condition - 2015. In: Electric Power Engineering (EPE). - Ostrava: VŠB-TU, 2015 P. 418-422. ISBN 978-1-4673-6787-5
2. ČONKA, Zs. - KOLCUN, M. - KANÁLIK, M. - MEDVEĎ, D. - VOJTEK, M.: Increasing Net Transfer Capacity (NTC) by UPFC in Central East Europe power

system - 2015. In: Electric Power Engineering (EPE). - Ostrava: VŠB-TU, 2015 P. 132-136. ISBN 978-1-4673-6787-5

3. KOLCUN, M. - VOJTEK, M. - ČONKA, Zs.: The implementation of an ideal photovoltaic module in MatlabSimulink using simpowersystems Toolbox - 2015. In: Electric Power Engineering (EPE). - Ostrava: VŠB-TU, 2015 P. 579-583. ISBN 978-1-4673-6787-5
4. MICHAELI, L. - ŠALIGA, J. - LIPTÁK, J. - BUŠA, J. - CIMBALA, R.: Dielectric Parameters Estimation by the Measurement of the Relaxation Current - 2015. In: IMEKO World Congress. - Praha: Czech Technical University, 2015 P. 653-657. ISBN 978-80-01-05793-3
5. DOLNÍK, B.: Contribution to analysis of daily diagram of supply voltage in low voltage network: working days versus non-working days - 2015. In: Electric Power Engineering (EPE). - Ostrava: VŠB-TU, 2015 P. 373-376. ISBN 978-1-4673-6787-5
6. GERMAN-SOBEK, M.: The Assessment of Dielectric Parameters of XLPE Insulation Using Dielectric Relaxation Spectroscopy - 2015. In: SCYR 2015. Košice: TU, 2015 p. 129-130. ISBN 978-80-553-2130-1
7. KMEC, M.: Effect of series FACTS devices on distance protection - 2015. In: SCYR 2015. Košice: TU, 2015 p. 50-51. ISBN 978-80-553-2130-1
8. ZBOJOVSKÝ, J.: Modelling the distribution of electromagnetic field and calculation of shielding effectiveness - 2015. In: SCYR 2015. - Košice: TU, 2015 p. 84-85. ISBN 978-80-553-2130-1
9. KOSTEREC, M.: Effects of non - ionizing electromagnetic fields exposing biological systems - 2015. In: SCYR 2015. - Košice: TU, 2015 p. 52-55. ISBN 78-80-553-2130-1
10. VOJTEK, M.: Optimization the operation of renewable energy sources in electric power system/ - 2015. In: SCYR 2015. - Košice : TU, 2015 p. 102-105. ISBN 978-80-553-2130-1
11. PAVLÍK, M. - KOLCUNOVÁ, I. - DOLNÍK, B. - KURIMSKÝ, J. - MÉSZÁROS, A. - KOLCUN, M. - MEDVEĎ, D. - ZBOJOVSKÝ, J. - KURIMSKÝ, P.: Meracia metóda pre určenie účinnosti tienenia elektromagnetického poľa - 2015. In: DIS 2014. - Košice : TU, 2015 p. 1-9. ISBN 978-80-553-1858-5
12. LISOŇ, L.: The influence of accelerated ageing on the oil impregnated paper - 2015. In: SCYR 2015. - Košice: TU, 2015 p. 135-136. ISBN 978-80-553-2130-1
13. ČONKA, Zs.: Research of special equipment to improve transient stability of power systems - 2015. In: SCYR 2015. - Košice: TU, 2015 p. 112-114. ISBN 978-80-553-2130-1
14. MIKITA, M.: Simulation of hybrid system - 2015. In: SCYR 2015. - Košice: TU, 2015 p. 116-118. ISBN 978-80-553-2130-1
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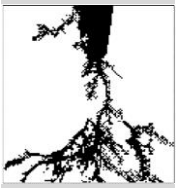

EXPERT'S ACTIVITY FOR PRACTICE

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

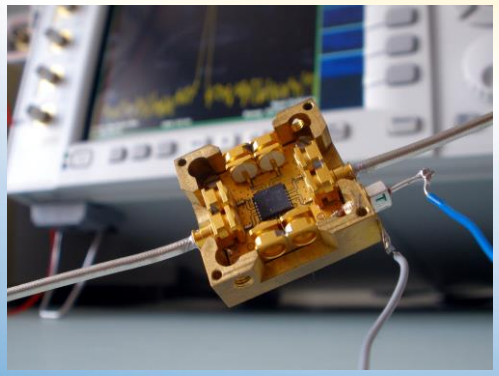
The Department of Electronics and Multimedia Communications was founded in 1969. The original name of department was Department of Electronics. The Department offers three types of full-time courses:

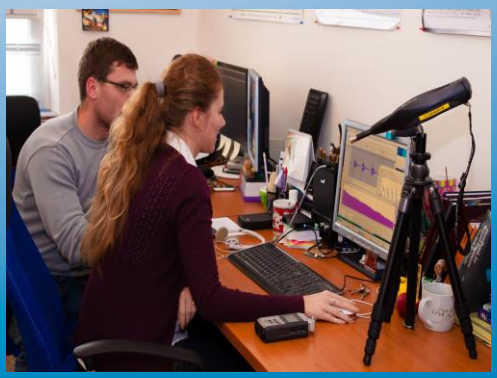
Bachelor's Degree lasts in normal way 3 years and is leading to degree Bc. The graduates get more-or-less practical skills in mastering

- Smart Electronics,
- Multimedia Communication Technologies.

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

- Smart Electronics,
- Multimedia Communication Technologies.





Doctoral Study course lasts in normal way 4 years and is leading to degree PhD. The graduates get erudition in scientific areas

- ♦ Electronic Systems and Signal Processing,
- ♦ Multimedia Communication Technologies.

Teaching and research activities of the department are focused on advanced technologies of electronics, telecommunications and smart measuring systems. In addition to the theoretical and practical basics, the teaching is more concentrated on mobile and satellite technologies and services, automotive electronics, digital processing and transmission of multimedia signals (image, video, speech), cryptography and security in telecommunication networks, optoelectronics and optical communication, sensor systems, interactive telecommunications systems and services.

2 STAFF

Professors:
Dr.h.c. prof. Ing. Anton Čižmár, CSc.
prof. Ing. Jozef Juhár, CSc.
prof. Ing. Dušan Kocur, CSc.
prof. Ing. Dušan Levický, CSc.
prof. Ing. Stanislav Marchevský, CSc.
prof. Ing. Ján Mihalík, CSc.
prof. Ing. Linus Michaeli, DrSc.
prof. Ing. Ján Šaliga, CSc.
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doc. Ing. Miloš Drutarovský, CSc.
doc. Ing. Pavol Galajda, CSc.
doc. Ing. Ján Gamec, CSc.
doc. Ing. Ľuboš Ovseník, PhD.

Assistant Professors:

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Ing. Mária Gamcová, PhD.	Ing. Stanislav Ondáš, PhD.
Ing. Iveta Gladišová, CSc.	Ing. Ján Papaj, PhD.
Ing. Daniel Hládek, PhD	Ing. Ján Staš, PhD.

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Ing. Martin Lojka, PhD.	Ing. Jozef Vavrek, PhD.
Ing. Matúš Pleva, PhD.	Ing. Peter Viszlay PhD.
Mgr. Mária Švecová, PhD.	

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Ph.D. students:

Internal form:

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Ing. Martin Broda	Ing. Tomáš Koctúr
Ing. Dávid Čonka	Ing. Lenka Macková
Ing. Pavol Dolinský	Ing. Martin Matis
Ing. Jozef Greššák	Ing. Daniel Novák
Ing. Vladimír Hajduk	Ing. Jakub Oravec
Ing. Tomáš Ivaniga	Ing. Ján Pastirčák

Ing. Martin Petrvalský

Ing. Miroslav Repko
Ing. Ján Ružbarský
Ing. Lukáš Sendrei
Ing. Ján Schneider
Ing. Stanislav Slovák
Ing. Dávid Solus
Ing. Martin Sulír

Ing. Ján Tóth
Ing. Daniel Zlacký

External form: Ing. Martin Kmec
Ing. Matúš Kozák
Ing. František Rakoci
Ing. Peter Strnisko
Ing. Matej Žiga

3 LABORATORIES

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 Sensor and Wireless Communication Technologies (SeWiTechLab)
- 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)	Lecturer
Basics of electronics	2nd	2/3	Galajda
Analogue circuits	3rd	3/2	Kocur
Digital electronics	3rd	3/2	Galajda
Signals and systems	3rd	3/2	Mihalík, Gladišová
Measurements in electronics and telecommunications	4th	2/3	Šaliga
In electronics design environment	4th	3/2	Galajda
Active and passive safety systems of cars	5th	3/2	Gamec
Automotive electronics	5th	3/2	Gamec
Microwave circuits and systems	6th	3/3	Gamec
Programming of embedded systems	6th	2/3	Drutarovský

4.2. Undergraduate Study (Bc.) – Smart Electronics

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Basics of electronics	2nd	2/3	Galajda
Analogue circuits	3rd	3/2	Kocur Gamcová
Basics of telecommunications technology	3rd	3/2	Levický
Digital electronics	3rd	3/2	Galajda
Signals and systems	3rd	3/2	Mihalík, Gladišová
Measurements in electronics and telecommunications	4th	2/3	Šaliga
Microwave circuits and systems	4th	3/3	Gamec Gamcová
In electronics design environment	4th	3/2	Galajda
Networks technology 1	4th	3/2	Levický
Communication acoustics	4th	3/2	Juhár
Bachelor thesis	5th	0/6	Juhár
Graphical programming	5th	3/2	Šaliga
Microprocessor technology	5th	3/2	Drutarovský
Networks architecture	5th	3/2	Čižmár
Automotive electronics	5th	3/2	Gamec
Electromagnetic waves and antennas	5th	3/2	Ovseník
Interactive electronic and communication systems	5th	2/3	Juhár
Videocommunications	5th	3/2	Mihalík
Multimedia database systems	5th	2/3	Juhár
Networks technology 2	5th	2/2	Levický
Programming of embedded systems	6th	2/3	Drutarovský
Active and passive safety systems of cars	6th	3/2	Gamec
Optoelectronic systems	6th	3/2	Turán
In electronics design environment	6th	3/2	Galajda
Satellite technology and services	6th	3/2	Marchevský

4.3. Undergraduate Study (Bc.) – Multimedia Communication Technologies

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Basics of electronics	2nd	2/3	Galajda
Analogue circuits	3rd	3/2	Kocur Gamcová
Basics of telecommunications technology	3rd	3/2	Levický
Digital electronics	3rd	3/2	Galajda
Signals and systems	3rd	3/2	Mihalík, Gladišová
Measurements in electronics and telecommunications	4th	2/3	Šaliga
Multimedia technology	4th	3/2	Levický
Networks technology 1	4th	3/2	Levický
Communication acoustics	4th	3/2	Juhár
Microwave circuits and systems	4th	3/3	Gamec
Bachelor thesis	5th	0/6	Juhár
Communication technology 1	5th	3/2	Marchevský

Networks architecture	5th	3/2	Čižmár
Electromagnetic waves and antennas	5th	3/2	Ovseník
Graphical programming	5th	3/2	Šaliga
Interactive electronic and communication systems	5th	2/3	Juhár
Multimedia database systems	5th	2/3	Juhár
Mobile technologies and services	5th	3/2	Doboš
Videocommunications	5th	3/2	Mihalík
Networks technology 2	5th	2/2	Levický
Communication technology 2	6th	3/2	Maceková
Programming of embedded systems	6th	2/3	Drutarovský
Optoelectronic systems	6th	3/2	Turán
Satellite technology and services	6th	3/2	Marchevský

4.4. Graduate Study (Ing.) – Smart Electronics

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Circuit theory	1th	3/2	Galajda
Digital signal processing	1th	3/2	Mihalík, Gladišová
Optoelectronics	1th	3/2	Turán
Signal and communication interfaces	1th	3/2	Šaliga
Applied cryptography	1th	3/2	Levický
Programmable logic circuits	1th	3/2	Drutarovský
Signal processors	1th	3/2	Drutarovský
Smart antennas	1th	3/2	Ovseník
Digital image processing and coding	2nd	3/2	Mihalík
Diploma project 1	2nd	0/6	Juhár
Processing and transmission of speech and audio signals	2nd	3/2	Juhár
Smart measuring systems	2nd	3/2	Šaliga
Design of integrated circuits for smart applications	2nd	3/2	Galajda
Optical communication systems	2nd	3/2	Turán
High frequency and microwave technology	2nd	3/2	Gamec
Telecommunication systems theory	2nd	3/2	Čižmár
Diploma project 2	3rd	0/6	Juhár
Digital television systems	3rd	3/2	Marchevský
Photonics	3rd	3/2	Turán
Advanced speech applications for communication technology	3rd	3/2	Juhár
Advanced communication systems	3rd	3/2	Kocur
Medical electronics	3rd	3/2	Michaeli
Smart security systems	3rd	3/2	Marchevský
UWB sensor networks	3rd	2/2	Kocur

4.5. Graduate Study (Ing.) – Multimedia Communication Technologies

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Applied cryptography	1th	3/2	Levický
Digital signal processing	1th	3/2	Mihalík, Gladišová
Optoelectronics	1th	3/2	Turán
Signal and communication interfaces	1th	3/2	Šaliga

Programmable logic circuits	1th	3/2	Drutarovský
Signal processors	1th	3/2	Drutarovský
Smart antennas	1th	3/2	Ovseník
Localization in wireless and mobile systems	1th	3/2	Doboš
Diploma project 1	2nd	0/6	Juhár
Processing and transmission of speech and audio signals	2nd	3/2	Juhár
Optical communication systems	2nd	3/2	Turán
Telecommunication systems theory	2nd	3/2	Čižmár
Design of integrated circuits for smart applications	2nd	3/2	Galajda
Digital image processing and coding	2nd	3/2	Mihalík
High frequency and microwave technology	2nd	3/2	Gamec
Smart measuring systems	2nd	3/2	Šaliga
Diploma project 2	3rd	0/6	Juhár
Mobile communications	3rd	3/2	Doboš
Multimedia technologies	3rd	3/2	Levický
Advanced speech applications for communication technology	3rd	3/2	Juhár
Advanced communication systems	3rd	3/2	Kocur
Digital television systems	3rd	3/2	Marchevský
Photonics	3rd	3/2	Turán
UWB sensor networks	3rd	2/2	Kocur
Satellite technology and services	6th	3/2	Marchevský

4.6. Graduate Study (Ing.) – Advanced Materials and Technologies in Automotive Electronics

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Digital signal processing	1th	3/2	Mihalík, Gladišová
Programmable logic circuits	1th	3/2	Drutarovský
High frequency and microwave technology	2nd	3/2	Gamec
Design of integrated circuits for smart applications	2nd	3/2	Galajda
Smart measuring systems	2nd	3/2	Šaliga
Advanced communication systems	3rd	3/2	Kocur
Smart security systems	3rd	3/2	Marchevský
UWB sensor networks	3rd	2/2	Kocur

4.7. Postgraduate Study (PhD.) – Electronic Systems and Signal Processing

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Electronic circuits and signals and systems theory	1th	0/5	Kocur
Foreign language 1	1th	0/2	
Research activities 1	1th	0/5	Turán
Foreign language 2	2nd	0/2	
Complex electronic systems and advanced signal processing methods	2nd	0/5	Kocur
Specialization subject	3rd	0/5	Turán
Research activities 2	3rd	0/5	Turán

Research activities 3	5th	0/5	Turán
Research activities 4	6th	0/5	Turán
Research activities 5	7th	0/5	Turán

4.8. Postgraduate Study (PhD.) – Multimedia Communication Technologies

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Multimedia and communication systems theory	1th	0/5	Juhár
Foreign language 1	1th	0/2	
Research activities 1	1th	0/5	Levický
Foreign language 2	2nd	0/2	
Modern multimedia communication technologies	2nd	0/5	Juhárr
Specialization subject	3rd	0/5	Levický
Research activities 2	3rd	0/5	Levický
Research activities 3	5th	0/5	Levický
Research activities 4	6th	0/5	Levický
Research activities 5	7th	0/5	Levický

5 RESEARCH PROJECTS

- Integrating Biometrics and Forensics for the Digital Age (COST Action IC1106)
- Trustworthy Manufacturing and Utilization of Secure Devices (COST Action IC1204)
- Civil Engineering Applications of Ground Penetrating Radar (COST Action TU1208)
- Wireless Power Transmission for Sustainable Electronics (COST Action IC1301)
- Technological Transfer Network (544197-TEMPUS-1-2013-1-IT-TEMPUS-JPHES)
- Innovative ICT Solutions for the Societal Challenges (2015-1-HR01-KA203-013124 ERASMUS+)
- COST Action IC1303: Algorithms, Architectures and Platforms for Enhanced Living Environments (AAPELE), (COST Action IC1303)
- Wireless Sensor Network for Water Quality Monitoring (Hungary-Slovakia Cross-border Co-operation HUSK/1101/1.2.1/0091)
- Research and Development of Modules for Language-Adaptive Multimodal Interfaces (SK-HU-2013-0015)
- The Use of TUKE PON Experimental Model in Teaching (Ministry of Education of Slovak Republic KEGA Project, No. 006TUKE-4/2014)
- Interactive Multiview Video Streaming for Supporting Education (Ministry of Education of Slovak Republic KEGA Project, No. 062TUKE-4/2014)
- Electromagnetic Compatibility of Technological Equipment in Tyre Industry (Project of Agency for Science and Research, No. APVV-0333-11)
- Digital Signature Power Analysis Attack and Countermeasures (Project of Agency for Science and Research, No. APVV-0586-11)
- Mitigation of Stochastic Effect in High-Bitrate All Optical Networks (Project of Agency for Science and Research, No. APVV-0025-12)
- Persons Localization in 3D Under Emergency Event based on UWB Radar System (Project of Agency for Science and Research, No. APVV-0404-12)
- The Research of Coexistence between Broadband LTE Networks and Digital Terrestrial TV Broadcasting DVB-T/DVB-T2 (Project of Agency for Science and

Research, No. APVV-0696-12)
- Short-Range UWB Sensor Networks for Detection, Localization and Tracking of Moving Persons (Scientific Grant Agency Project VEGA, No. 1/0563/13)
- Utilization of the Maximum Likelihood Method for Analog to Digital Interface Testing and for the Measurement of Distorted Waveforms by the Non-orthogonal Components (Scientific Grant Agency Project VEGA, No. 1/0281/14)
- Agent Based Modelling of the Spectrum Distribution in the Cognitive Radio Networks (Scientific Grant Agency Project VEGA, No. 1/0766/14)
- Selected Security Topics in Advanced Telecommunications (Scientific Grant Agency Project VEGA, No. 1/0075/15)

6 CO-OPERATION

6.1. Co-operation in Slovakia

- Elcom s.r.o., Prešov
- Slovak Academy of Science
- Slovak Telekom, a.s.
- VUS - Výskumný ústav spojov, n.o., Banská Bystrica
- ZŤS výskumno-vývojový ústav Košice, a.s.

6.1.1. Visitors to the Department

- prof. Roger King, Mississippi State University, USA, November 10-11, 2015.
- prof. Ing. Volodymyr Palahin, DrSc. (guest professor)

6.2. International Co-operation

- Austrian Research Institute for Artificial Intelligence (OFAI) of the Austrian Society for Cybernetic Studies
- FTW Telecommunications Research Center Vienna, Austria
- Ingenieur Büro Ralf Klukas, Germany
- INESC Lisabon, Portugal
- Instituto Superior Técnico (IST), Lisbon, Portugal
- Statens Räddningsverk, Sweden
- ŠkodaAuto Mladá Boleslav, Czech Republic
- Wuhan Technological Institute, Wuhan, China
- Second University of Naples, Italy
- Technische Universität Ilmenau, Germany
- Hamburg University of Technology, Germany
- AGH University of Science and Technology Krakow, Poland
- Gdansk University of Technology, Poland
- Bulgarian Academy of Sciences, Bulgaria
- Technische Universiteit Delft, Netherlands
- Universitat Ramon Llull, Barcelona, Spain
- Universitat Politècnica de Catalunya Barcelona Tech (UPC), Barcelona, Spain
- Technical University Budapest, Hungary
- Technical University of Ljubljana, Slovenia
- Technical University of Cluj-Napoca, Romania
- University of Firenza, Italy

- University of Gent, Belgium
- University of Maribor, Slovenia
- University of Sannio, Benevento, Italy
- University of Reggio Di Calabria, Italy
- University of Gävle, Sweden
- University in Oulu, Finland
- Gjøvik University College, Norway
- Mississippi State University, Starkville, USA

6.2.1. Visit of Staff Members to Foreign Institutions

- Čonka, D., Pardubice, Czech Republic April 20-23, 2015
- Drutarovský, M., BUTE Budapest, Hungary February 3-5, 2015
- Drutarovský, M., Dubai, United Arab Emirates February 19-26, 2015
- Drutarovský, M., TU Ilmenau, Germany April 11-18, 2015
- Drutarovský, M., University of Malta, Msida, Malta May 27-31, 2015
- Drutarovský, M., Barcelona, Spain June 28 – July 1, 2015
- Drutarovský, M., Saint Malo, France September 15-19, 2015
- Drutarovský, M., TU Ilmenau, Germany November 22-29, 2015
- Drutarovský, M., Cancun, Mexico December 5-13, 2015
- Galajda, P., BUTE Budapest, Hungary February 3-5, 2015
- Galajda, P., Graz, Austria March 29-31, 2015
- Galajda, P., TU Ilmenau, Germany April 11-18, 2015
- Galajda, P., TU Brno, Czech Republic June 15-16, 2015
- Galajda, P., Dresden, Germany June 23-27, 2015
- Galajda, P., Barcelona, Spain June 28 – July 1, 2015
- Galajda, P., Ostravice, Czech Republic September 9-11, 2015
- Galajda, P., Thessaloniki, Greece September 22-26, 2015
- Galajda, P., TU Ilmenau, Germany November 22-29, 2015
- Gamcová, M., Dresden, Germany June 23-27, 2015
- Gamcová, M., Athens, Greece October 18-21, 2015
- Gamec, J., Dresden, Germany June 23-27, 2015
- Gazda, J., BUTE Budapest, Hungary February 19-21, 2015
- Hajduk, V., University of Zadar, Croatia Sept. 27 – Oct. 2, 2015
- Hládek, D., Ostravice, Czech Republic September 9-11, 2015
- Hládek, D., Miskolc, Hungary October 16, 2015
- Hládek, D., Athens, Greece September 19-25 2015
- Hládek, D., Poznan, Poland November 26-30, 2015
- Juhár, J., EC, Brussels, Belgium February 16-18, 2015
- Juhár, J., Pardubice, Czech Republic April 20-23, 2015
- Juhár, J., Ostravice, Czech Republic September 9-11, 2015
- Kažimír, P., Pardubice, Czech Republic April 20-23, 2015
- Koctur, T., Pardubice, Czech Republic April 20-23, 2015
- Kiktová, E., Gjøvik University College, Norway March 2-5, 2015
- Kocur, D., BUTE Budapest, Hungary February 3-5, 2015
- Kocur, D., London, Great Britain March 3-7, 2015
- Kocur, D., VUT Brno, Czech Republic March 17-18, 2015
- Kocur, D., Graz, Austria March 29-31, 2015
- Kocur, D., TU Ilmenau, Germany April 11-18, 2015

- Kocur, D., University of Malta, Msida, Malta May 27-31, 2015
- Kocur, D., BUTE Budapest, Hungary May 10-12, 2015
- Kocur, D., Siena, Italy May 14-17, 2014
- Kocur, D., VUT Brno, Czech Republic June 8-9, 2015
- Kocur, D., Dresden, Germany June 21-27, 2015
- Kocur, D., Barcelona, Spain June 28 – July 1, 2015
- Kocur, D., Thessaloniki, Greece September 22-26, 2015
- Lipták, J., Chisinau, Moldova May 3-9, 2015
- Macková, Ľ., Pardubice, Czech Republic April 20-23, 2015
- Maceková, Ľ BUTE Budapest, Hungary February 3-5, 2015
- Maceková, Ľ BUTE Budapest, Hungary June 28-30, 2015
- Matis, M., Nový Hrozenkov, Czech Republic August 16-19, 2015
- Matis, M., Ostravice, Czech Republic September 9-11, 2015
- Michaeli, L., Chisinau, Moldova May 16-23, 2015
- Michaeli, L., CVUT Prague, Czech Republic Aug. 29 – Sept. 5, 2015
- Michaeli, L., TU Ilmenau, Germany December 1-4, 2015
- Novák, D., Karlsruhe, Germany April 19-25, 2015
- Novák, D., London, Great Britain March 3-7, 2015
- Ondáš, S., Miskolc, Hungary October 16, 2015
- Ondáš, S., Gyor, Hungary October 20, 2015
- Ovseník, Ľ., London, Great Britain September 9-13, 2015
- Papaj, J., Valencia, Spain May 4-7, 2015
- Pastirčák, J., Munich, Germany November 8-10, 2015
- Petrvalský, M., Saint Étienne, France March 17 - June 16, 2015
- Pleva, M., EC, Brussels, Belgium February 16-18, 2015
- Pleva, M., Gjøvik University College, Norway March 2-5, 2015
- Pleva, M., Pardubice, Czech Republic April 20-23, 2015
- Pleva, M., Wien, Austria July 6-7, 2015
- Pleva, M., Ostravice, Czech Republic September 9-11, 2015
- Pleva, M., Nice, France Aug. 31 - Sept. 1, 2015
- Pleva, M., Bonn, Germany September 3-6, 2015
- Pleva, M., Lisbon, Portugal October 19-22, 2015
- Pleva, M., Ulm, Germany October 26-29, 2015
- Pleva, M., AGH Krakow, Poland November 24-25, 2015
- Sendrei, L., Pardubice, Czech Republic April 20-23, 2015
- Sendrei, L., California, USA Sept. 23 – Dec. 18, 2015
- Schneider, J., Karlsruhe, Germany April 19-25, 2015
- Schneider, J., VUT Brno, Czech Republic May 3 – June 28, 2015
- Schneider, J., Nový Hrozenkov, Czech Republic August 17-19, 2015
- Slovák, S., BUTE Budapest, Hungary February 19-21, 2015
- Slovák, S., TU Ilmenau, Germany April 11-18, 2015
- Slovák, S., Dresden, Germany June 23-27, 2015
- Slovák, S., CVUT Prague, Czech Republic July 8-11, 2015
- Slovák, S., Ostravice, Czech Republic September 9-11, 2015
- Slovák, S., TU Ilmenau, Germany Oct. 28 – Dec. 18, 2015
- Staš, J., Athens, Greece September 19-25 2015
- Staš, J., Miskolc, Hungary October 16, 2015
- Sulír, M., Pardubice, Czech Republic April 20-23, 2015
- Sulír, M., Vietri sul Mare, Italy May 7-21, 2015

- Sulír, M., Mons, Belgium Aug. 9 – Sept. 5, 2015
- Šaliga, J., BUTE Budapest, Hungary February 3-5, 2015
- Šaliga, J., Chisinau, Moldova April 29 – May 1, 2015
- Šaliga, J., Chisinau, Moldova May 4-7, 2015
- Šaliga, J., CVUT Prague, Czech Republic Aug. 30 – Sept. 10, 2015
- Šaliga, J., Lisbon, Portugal October 19-22, 2015
- Šaliga, J., TU Ilmenau, Germany December 1-4, 2015
- Šaliga, J., Chisinau, Moldova December 10-13, 2015
- Šaliga, J., CVUT Prague, Czech Republic December 20-22, 2015
- Švecová, M., Dresden, Germany June 23-27, 2015
- Švecová, M., Athens, Greece October 18-21, 2015
- Turán, J., Szilvásvárda, Hungary May 27-30, 2015
- Turán, J., London, Great Britain September 9-13, 2015
- Varchola, M., Grenoble, France March 10-14, 2015
- Varchola, M., Lyon, France May 12-14, 2015
- Varchola, M., Leuven, Belgium June 16-17, 2015
- Varchola, M., Paris, France November 2-5, 2015
- Varchola, M., Cancun, Mexico December 5-28, 2015
- Vavrek, J., Ostravice, Czech Republic September 9-11, 2015
- Vavrek, J., Wurzen, Germany September 13-16, 2015
- Viszlay, P., Ostravice, Czech Republic September 9-11, 2015
- Zlacký, D., Pardubice, Czech Republic April 20-23, 2015
- Zlacký, D., Miskolc, Hungary October 16, 2015
- Žiga, M., BUTE Budapest, Hungary February 3-5, 2015
- Žiga, M., Dresden, Germany June 23-27, 2015
- Žiga, M., BUTE Budapest, Hungary June 28-30, 2015

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.
- Galajda, P.: Member of the editorial board of the journal "Radioengineering".
- Galajda, P.: Member of EUROPRACTICE IC Service.
- 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.
- Juhár, J.: Member of the editorial board of the journal "Slaboproudý obzor".
- Kocur D.: Member of the editorial board of the journal "Infocommunications Journal 2014".
- 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".
- Šaliga, J.: Member of the editorial board of the journal "Radioengineering".
- 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 Dušan, Member of committee of Scientific Grant Agency of the Ministry of Education of the Slovak Republic and of Slovak Academy of Sciences.
- 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".
- Šaliga, J.: Scientific Grant Agency of Slovak Republic.
- Šaliga, J.: Member of scientific board of Slovak Institute of Metrology.
- Šaliga, J.: Member of the editorial board of the journal "Acta Electrotechnica et Informatica".
- 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

- Integrating Biometrics and Forensics for the Digital Age (COST Action IC1106)
- Trustworthy Manufacturing and Utilization of Secure Devices (COST Action IC1204)
- Wireless Power Transmission for Sustainable Electronics (COST Action IC1301)

- Technological Transfer Network (544197-TEMPUS-1-2013-1-IT-TEMPUS-JPHES)
- Innovative ICT Solutions for the Societal Challenges (2015-1-HR01-KA203-013124 ERASMUS+)
- Wireless Sensor Network for Water Quality Monitoring (Hungary-Slovakia Cross-border Co-operation HUSK/1101/1.2.1/0091)
- Research and Development of Modules for Language-Adaptive Multimodal Interfaces (SK-HU-2013-0015)

7 THESES

Thesis type	Bachelor	Master	Doctoral
Number	21	60	5

8 OTHER ACTIVITIES

9 PULICATIONS

9.1. Books

1. DOBOŠ, Ľ.: Mobile technologies and services. In: Košice: TU, Slovakia, 2015, 123 pp.
2. GALAJDA, P.-GAMCOVÁ, M.: Základy elektroniky. In: Košice: TU, Slovakia, 2015, 404 pp.
3. GAMEC, J.: Automobilová elektronika 1. In: Košice: TU, Slovakia, 2015, 248 pp.
4. GLADIŠOVÁ, I.-MIHALÍK, J.: Spojité signály. In: Košice: TU, Slovakia, 2015, 62 pp.
5. JUHÁR, J.-ONDÁŠ, S.: Spracovanie a prenos rečových a audio signálov. In: Košice: TU, Slovakia, 2015, 90 pp.
6. JUHÁR, J.-ONDÁŠ, S.: Interaktívne telekomunikačné systémy a služby. In: Košice: TU, Slovakia, 2015, 90 pp.
7. KOCUR, D.-GAMEC, J.-GAMCOVÁ, M.-FORTES, J.-URDZÍK, D.: UWB senzorové systémy. In: Košice: TU, Slovakia, 2015, 172 pp.
8. KOCUR, D.-GAZDA, J.: Prenosové systémy s rozprestretým spektrom. In: Košice: TU, Slovakia, 2015, 220 pp.
9. MACEKOVÁ, Ľ.: Malá encyklopédia prístupových sietí. In: Košice: TU, Slovakia, 2015, 133 pp.
10. MARCHEVSKÝ, S.: Satelitné technológie a služby. In: Košice: TU, Slovakia, 2015, 234 pp.
11. MARCHEVSKÝ, S.: Digitálna televízia. In: Košice: TU, Slovakia, 2015, 229 pp.
12. OVSENÍK, Ľ.-TURÁN, J.-TATARKO, M.: Systémy optickej komunikácie voľným prostredím. In: Košice: TU, Slovakia, 2015, 147 pp.
13. ZAVACKÝ, J.-MIHALÍK, J.-GLADIŠOVÁ, I.: Lineárne spojité sústavy. In: Košice: TU, Slovakia, 2015, 65 pp.
14. MIHALÍK, J.: Videokomunikácie. In: Košice: TU, Slovakia, 2015, 80 pp.

9.2. Journals

1. BOURS, P.-KIKTOVÁ, E.-PLEVA, M.: Static Audio Keystroke Dynamics, In: MCSS, CCIS Vol. 566, Springer (2015), pp. 159-169.
2. DROTÁR, P.-MEKYSKA, J.-REKTOROVA, I.-MASAROVA, L.-SMEKAL, Z.-FAUNDEZ-ZANUY, M.: Decision Support Framework for Parkinson's Disease Based on Novel Handwriting Markers. In: IEEE Transactions on neural and rehabilitation engineering, Vol. 23, no. 3 (2015), pp. 508-516.
3. GLADIŠOVÁ, I.-MIHALÍK, J.-PETRÁŠ, J.: Vnútrosnímková segmentácia obrazu. In: Posterus.sk, Vol. 8, no. 2 (2015), pp. 1-18.
4. HLÁDEK, D.-STAŠ, J.-JUHÁR, J.: Morphological Analysis of the Slovak Language. In: Advances in Electrical and Electronic Engineering. Vol. 13, no 4 (2015) pp. 289-294.
5. IVANIGA, T.-OVSENÍK, Ľ.-TURÁN, J.: Influence of Self-Phase Modulation on 8 and 16- Channel DWDM System with NRZ and Miller Coding. In: Carpathian Journal of Electronic and Computer Engineering, Vol. 8, no. 1 (2015), pp. 17-22.
6. IVANIGA, T.-OVSENÍK, Ľ.: Experimentálne overenie vplyvu SPM na DWDM systém v programovom prostredí OptSim. In: Posterus.sk, Vol. 8, no. 7 (2015), pp. 1-10.
7. KIKTOVÁ, E.-JUHÁR, J.-ČIŽMÁR, A.: Feature Selection for Acoustic Events Detection. In: Multimedia Tools and Applications, Vol. 74, no. 12 (2015), pp. 4213-4233.
8. KIKTOVÁ, E.-JUHÁR, J.: Comparison of Diarization Tools for Building Speaker Database. In: Advances in Electrical and Electronic Engineering. Vol. 13, no. 4 (2015), pp. 314-319.
9. KOVÁČ, O.-MIHALÍK, J.: Modelovanie ľudskej hlavy. In: Elektrorevue, Vol. 17, no. 2 (2015), pp. 45-49.
10. KOVÁČ, O.-HAJDUK, V.-MIHALÍK, J.: Videokompresia. In: Posterus.sk, Vol. 8, no. 3 (2015), pp. 1-10.
11. LOJKA, M.-PLEVA, M.-KIKTOVÁ, E.-JUHÁR, J.-ČIŽMÁR, A.: Efficient Acoustic Detector of Gunshots and Glass Breaking. In: Multimedia Tools and Applications, Springer (2015). pp. 1-29, OnlineFirst.
12. MACKOVÁ, L.-ČIŽMÁR, A.-JUHÁR, J.: A Study of Acoustic Features for Emotional Speaker Recognition in I-Vector Representation. In: Acta Electrotechnica et Informatica, Vol. 15, no. 2 (2015), pp. 15-20.
13. ONDÁŠ, S.-JUHÁR, J.: Event-based Dialogue Manager for Multimodal Systems. In: Advances in Intelligent Systems and Computing, Vol. 316 (2015), pp. 239-247.
14. ORAVEC, J.-BUGÁR, G.-TURÁN, J.: Robust Steganographic Method Utilizing Properties of MJPEG Compression Standard. In: Carpathian Journal of Electronic and Computer Engineering, Vol. 8, no. 1 (2015), pp. 38-42.
15. PALKO, T.-BRODA, M.: Obrazová stegoanalýza v DWT oblasti. In: Posterus.sk, Vol. 8, no. 5 (2015), pp. 1-11.
16. PAPAJ, J.-DOBOŠ, Ľ.-ČIŽMÁR, A.: Communication of Mobile Robots in Temporary Disconnected MANET. In: Advances in Intelligent Systems and Computing, Vol. 316 (2015), pp. 325-333.
17. PASTIRČÁK, J.-FRIGA, L.-KOVÁČ, V.-GAZDA, J.-GAZDA, V.: An Agent-Based Economy Model of Real-Time Secondary Market for the Cognitive Radio

Networks. In: Journal of Network and Systems Management, Springer US, (2015), pp. 1-17.

18. PETRVALSKÝ, M.-PETURA, O.-DRUTAROVSKÝ, M.: Remote FPGA Laboratory for Testing VHDL Implementations of Digital FIR Filters. In: Acta Electrotechnica et Informatica, Vol. 15, no. 2 (2015), pp. 3-8.
19. PLEVA, M.-ČIŽMÁR, A.: Car Trajectory Correction and Presentation Using Google Maps. In: Komunikacie, Vol. 17, no. 1 (2015), pp. 121-126.
20. PLEVA, M.-KIKTOVÁ, E.-JUHÁR, J.-BOURS, P.: Acoustical User Identification Based on MFCC Analysis of Keystrokes. In: Advances in Electrical and Electronic Engineering. Vol. 13 no. 4 (2015), pp. 309-313.
21. REPKA, M.-VARCHOLA, M.-DRUTAROVSKÝ, M.: Improving CPA Attack Against DSA and ECDSA. In: Journal of Electrical Engineering, Vol. 66, no. 3 (2015), pp. 159-163.
22. RUŽBARSKÝ, J.-TURÁN, J.-OVSENÍK, Ľ.: Influence of Stimuled Raman Scattering on Transmitted Optical Signal in WDM System. In: Carpathian Journal of Electronic and Computer Engineering, Vol. 8, no. 2 (2015), pp. 23-26.
23. SENDREI, L.-MARCHEVSKÝ, S.: On the Performance of GFDM Systems Undergoing Nonlinear Amplification. In: Acta Electrotechnica et Informatica, Vol. 15, no. 1 (2015), pp. 9-14.
24. SOLUS, D.-OVSENÍK, Ľ.-KRAVČÁKOVÁ, V.: Optický korelátor v inventarizačnom systém pre evidenciu zvislých dopravných značiek. In: Posterus.sk, Vol. 8, no. 9 (2015), pp. 1-11.
25. SOLUS, D.-OVSENÍK, Ľ.-TURÁN, J.: Image Pre-processing in Vertical Traffic Signs Detection System. In: Carpathian Journal of Electronic and Computer Engineering, Vol. 8, no. 1 (2015), pp. 35-38.
26. ŠTEFAN, D.-OVSENÍK, Ľ.-TATARKO, M.: Optická komunikácia voľným prostredím a jej simulácia. In: Posterus.sk, Vol. 8, no. 6 (2015), pp. 1-5.
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28. TÓTH, J.-OVSENÍK, Ľ.-TURÁN, J.: Free Space Optics – Monitoring Setup for Experimental Link FSO sensors monitoring system. In: Carpathian Journal of Electronic and Computer Engineering, Vol. 8, no. 2 (2015), pp. 27-30.
29. VAGASKÝ, M.-SENDREI, L.: Techniky snímania spektra v kognitívnych rádiových sieťach. In: Posterus.sk, Vol. 8, no. 7 (2015), pp. 1-11.
30. VAVREK, J.-JUHÁR, J.: Multi-Level Audio Classification Architecture. In: Advances in Electrical and Electronic Engineering. Vol. 13, no. 4 (2015), pp. 303-308.
31. VAVREK, J.-VISZLAY, P.-LOJKA, M.-PLEVA, M.-JUHÁR, J.-RUSKO, M.: TUKE at MediaEval 2015 QUESST, In: CEUR-WS, Vol. 1436 (2015), pp. 1-3.
32. VIRÁG, L.-GLADIŠOVÁ, I.-GAMEC, J.: Parameter magnitúdy chybového vektora v štandarde IEEE 802.11n. In: Posterus.sk, Vol. 8, no. 1 (2015), pp. 1-11.
33. VISZLAY, P.-ECEGI, M.-JUHÁR, J.: Improving the Slovak LVCSR Performance by Cluster-Sensitive Acoustic Model Retraining. In: Advances in Electrical and Electronic Engineering. Vol. 13, no. 4 (2015), pp. 295-302.
34. ZAVACKÝ, J.-MIHALÍK, J.-KOVÁČ, O.: Multiwaveletová transformácia obrazu. In: Slaboproudý obzor, Vol. 71, no. 1 (2015), pp. 1-5.

35. ZAVACKÝ, J.-MIHALÍK, J.: Diskrétna multiwaveletová transformácia a jej implementácia s DGHM multiwaveletmi. In: Posterus.sk, Vol. 8, no. 3 (2015), pp. 1-14.

9.3. Other publications

Publication Type	Conferences		Other
	Foreign	Home	
Number	35	73	4

DEPARTMENT OF ELECTRICAL ENGINEERING AND MECHATRONICS

http://kem.fei.tuke.sk
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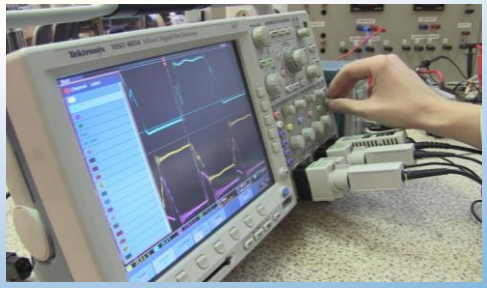
Head of Department
prof. Ing. Daniela Perduková, PhD.
E-mail: Daniela.Perdukova@tuke.sk

1 DEPARTMENT'S PROFILE

The Department was established at foundation of the Faculty of Electrical Engineering in 1969 as the Department of Electrical Drives but originally it is derived from the Department of Electrical Egineering established at foundation of the Technical University of Kosice (1953). Through the years the name of the department was changed in order to express closier its activities and development.

Staff members of the department are experienced in wide areas of electrical engineering, incl. automotive electrical engineering, mechatronics, and robotics what they utilise in teaching and research. Currently, the department is responsible for education and research in systems of electrical engineering, namely in fields of power and industrial electronics, electrical machines and apparatuses, sensors, electromechanical systems, controlled drives, multi-motor drives, control systems, industrial and automotive mechatronic systems up to drives of robots.

The Department offers all types of university courses: bachelor course, master course and two Ph.D. courses.

2 STAFF

Professors:
prof. Ing. Jaroslav Dudrik, PhD.
prof. Ing. Pavol Fedor, PhD.
prof. Ing. Daniela Perduková, PhD.
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. Jaroslava Žilková, PhD.

Assistant Professors:
Ing. Peter Bober, PhD.
Ing. Peter Girovský, PhD.
Ing. Ján Kaňuch, PhD.
Ing. Karol Kyslan, PhD.
Ing. Milan Lacko, PhD.
Ing. Marek Pástor, PhD.

Senior Scientists:
Ing. Peter Hajsák

Technical Staff:
Ing. Gabriela Brečková
Zuzana Olexová
doc. Ing.Michal Kostelný, CSc.
prof. Ing. Jaroslav Timko, CSc.

Full time Ph.D. Students:
Ing. Ján Bačík
Ing. Milan Biroš
Ing. Godem Ali M. Ismeal
Ing. Martin Lešo
Ing. Radoslav Sivý
Ing. Ľuboš Suchý (since September 2015)
Ing. Viktor Šlapák
Ing. Peter Talian
Ing. Marek Vacek (till June 2015)
Ing. Róbert Üveges (since September 2015)
Ing. Róbert Žatkovič

3 LABORATORIES

- Laboratory of Electrical Engineering
- Power Electronics Laboratory
- Laboratory for CAD (COSMOS, ProEngineer, MATLAB, PSpice, and applied SW, ABBRobotStudio)
- Laboratory of Industrial Automation
- Laboratory of Electrical Machines
- Laboratory of Electrical Drives
- Laboratory of Controlled Electrical Drives and Mechatronics
- Laboratory of Automotive Mechatronics
- Laboratory of Pneumatic and Hydraulic Systems
- 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

4 TEACHING

4.1. Undergraduate Study (Bc.) - Control of electromechanical systems

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Fundamentals of Electrical Engineering	1st	2/2	Kaňuch
Computer Applications	3th	2/2	Perduková
Electrical Machines	3rd	2/2	Záskalický
Electrotechnics in Vehicles	3th	2/2	Ďurovský
Industrial Electronics	3th	2/2	Záskalický
Electrical Drives	4th	2/2	Žilková
CAD Programs in Electrical Engineering	4th	2/2	Fedák
Power Semiconductor Converters and Sources	4th	2/2	Dudrik
Sensors and Measurement of Nonelectrical Variables	4th	2/2	Girovský
Industrial Control Systems	4th	2/2	Fedor
Bachelor Thesis I.	5th	0/8	Supervisor
Simulation of Production Systems	5th	2/2	Bober
Controlled Electrical Drives	5th	2/2	Ďurovský
Microprocessor Technique	5th	2/2	Lacko
ManMachine Interface	5th	2/2	Peduková
Bachelor Project	5th	0/8	Supervisor
Bachelor Thesis II.	6th	0/8	Supervisor
Modeling of Electromechanical Systems	6th	2/2	Fedák
Projecting of Electrical Systems	6th	2/2	Ferková
Pneumatic and Hydraulics Drives	6th	2/2	Bober

4.2. Graduate Study (Ing.) - Electrical Engineering

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Power Semiconductor Systems	7th	2/2	Dudrik
Non-linear Electro-Mechanical Systems	7th	2/2	Fedor
Servosystems	7th	2/2	Ďurovský
Dynamic Phenomena of Electrical Machines	7th	2/2	Záskalický
Electrical Machines for Automation	7th	2/2	Ferková
Technology of Production in Electronics	7th	2/2	Slosarčík
Vehicle Mechatronics	8th	2/2	Ďurovský
Construction and Design of Converters	8th	2/2	Dudrik
Control of Assembly Lines with Programming Controllers	8th	2/2	Fedor
Statistical Process Control	8th	2/2	Bober
Diploma Project	8th	0/4	Supervisor
Robotics	8th	2/2	Žilková
Diploma Project II	9th	0/6	Supervisor
Mechatronic Production Systems	9th	2/2	Ďurovský
Intelligent Control in El Systems	9th	2/2	Žilková
Three-Dimensional Modelling and Simulation	9th	2/2	Ferková
Signal Processors	9th	2/2	Lacko
Technology of Production in Electrotechnics	9th	2/2	Girman
Diploma Thesis	10th	0/18	Supervisor

4.3. Postgraduate Study (PhD.) - Electrical Engineering

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Power Electronics	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

4.4. 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

- *University Science Park TECHNICOM for Innovation Applications Supported by Knowledge Technology*, ITMS: 26220220182, supported by the Research & Development Operational Programme funded by the ERDF. Participation on Activity 3.2, Pilot Project 2 (PP2).
- *Research of Modulus for Intelligent Robotic Systems.* ITMS: 26220220141. Research & Development Operational Programme funded by the ERDF. Call: OPVaV-2009/2.2/05-SORO. Prinipal investigator: ZTS VVÚ Košice, Paritcipation on project as a partner.
- *Research of New Principles and Methods for Design of Electrotechnical*

Systems. Project VEGA 1/0464/15 Scientific Grant Agency of the Ministry of Education, science, research and sport of the Slovak Republic and the Slovak Academy of Sciences. Principal investigator: DUDRIK, J. (2015-2018).

- *Electrical Drive with Highfrequency 2-phase Induction Motor.* Project VEGA 2/0192/15. Scientific Grant Agency of the Ministry of Education, science, research and sport of the Slovak Republic and the Slovak Academy of Sciences. Principal investigator: ZASKALICKÝ, P. (2015-2018)
- *Multivariable Physical Calculation Applicable to Electric Drives.* SK-CZ-2013-0065. Project of Czech and Slovak intergovernmental scientific and technological cooperation (KEM FEI TU Košice and KEL TU Liberec). (2014-2015). Principal investigator: FERKOVÁ, Ž.

6 CO-OPERATION

6.1. Co-operation in Slovakia

The Department co-operates with many industrial enterprises in Slovakia having joint projects 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, SLOVRES 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
- Czech Academy of Science, Prague.
- Silesian Polytechnic Institute of Gliwice
- University of Oradea, Romania
- University of Maribor, Slovenia
- University of Zagreb, Croatia

6.2.1. Visits of Staff Members to Foreign Institutions

- BAČÍK, J.: TRADR Summer School on Autonomous Micro Aerial Vehicles, Fraunhofer – Sank Augustin, 24-28 August 2015
- ĎUROVSKÝ, F.: European Robotics Forum 2015. Vienna (AT), 11-13 March 2015.
- ĎUROVSKÝ, F., KYSLAN, K., ŠLAPÁK, V., BIROŠ, M.: Siemens (SIMEA) Vienna (AT), 22 April 2015.
- ĎUROVSKÝ, F., KYSLAN, K., ŠLAPÁK, V., FERKOVÁ, Ž.: APVV SK-CZ-2013-

0065 Bilateral Exchange Project on Technical Universtity of Liberec (CZ), 7-12 June 2015.
- ĎUROVSKÝ, F., KYSLAN, K., ŠLAPÁK, V.: Siemens Erlangen (AT), 11 June 2015.
- ĎUROVSKÝ, F., BOBER, P.: Technická univerzita Plzeň (CZ), June 2015.
- ĎUROVSKÝ, F., BOBER, P.: Škoda Transportation Plzeň (CZ). June 2015.
- KAŇUCH, J., FERKOVÁ, Ž.: VŠB-TU Ostrava (ČR), 20-22 Januar 2015.
- KYSLAN, K, PÁSTOR, M.: ELECTRONICS 2015, 1 Palanga, Lithuania, 15-17 June 2015
- KYSLAN, K, ŠLAPÁK, V., GIROVSKÝ, P.: Humusoft, s.r.o., Matlab Training, STU Bratislava, 15-19 September 2015

6.3. Membership in International Organizations, Societies and Committees

- DUDRIK, J; PÁSTOR, M; KYSLAN, K: IEEE members.
- FEDÁK, V.: IEEE ICETA 2015, Starý Smokovec. Program Chairman.
- PERDUKOVÁ, D.; ŽILKOVÁ, J.: members of Programme Committee: 10th International Conference on Soft Computing Models in Industrial and Environmental Applications – SOCO 2015, Burgos, Spain, June, 2015.
- KYSLAN, K; EDPE 2015, Tatranska Lomnica, Member of Local Organizing Committee.

6.4. Membership in Slovak Professional Bodies

- FEDÁK, V.; KAŇUCH, J.; TIMKO, J.; ZÁSKALICKÝ, P.; FEDOR, P.; FERKOVÁ, Ž.; GIROVSKÝ, P.; HAJSÁK, P.; LACKO, M.; PERDUKOVÁ, D.: members of The SES (Slovak Electrotechnical Society), Branch at FEI TU Košice.
- FERKOVÁ, Ž.: member of Technical Standards Commission on Electrical Machines in SR.
- PERDUKOVÁ, D.: member of Accreditation Commission working group for research in Electrical and Power Engineering.
- PERDUKOVÁ, D.: Council of the Secondary Technical School for EE, Košice (delegate of the FEI TU Košice).
- KOVÁČOVÁ, I., (chairman), DUDRIK, J., GIRMAN, M., PERDUKOVÁ, D., ZÁSKALICKÝ, P.: members of board for the PhD. Study in Electrical Engineering at FEI TU Košice.

6.5. National Educational Project

- E-MLAB a set of original laboratory workstations to support and extend research and teaching laboratories in the field of Mechatronics. KEGA 011TUKE-4/2013. Coordinator: PERDUKOVÁ, D.

6.6. Editorial Boards

- BOBER, P. Editorial board for journal “Quality, Innovation, Prosperity” (Kvalita, Inovácia, Prosperita), ISSN 1335-1745 (print), ISSN 1338-984X (online).
- DUDRIK, J. – Member of the Series Editorial Board of Annals of the Academy of Romanian Scientists.
- DUDRIK, J.: Editorial board of Transactions on electrical engineering, Czech Republic, ISSN 1805-3386.

- FEDÁK, V.: Editorial board of Scientific Works of the Institute of Electrical Machines Drives and Measurement (Wroclaw Univ. of Technology), ISSN 0033-2097.
- FEDOR, P: Editorial board of Acta Electrotechnica et Informatica – AEI. Journal of the Faculty of Electrical Engineering and Informatics. ISSN 1335-8243.
- PERDUKOVÁ, D.: Editorial board of Elektroenergetika journal, ISSN 1337-6756.
- ZÁSKALICKÝ, P.: Editorial board of Acta Technica CSAV. Journal of Czech Academy of Sience, Praque. Czech Republic. ISSN 0001-7043.
- ZÁSKALICKÝ, P.: Editorial board of KOMEL, Branzowy osrodek badavczo-rozwojovy Maszyn elektrycznych, Katowice, Poland. ISSN 0239-3646.

7 THESES

Thesis type	Bachelor	Master	Doctoral
Number	6	36	4

8 OTHER ACTIVITIES

8.1 Conferences, Seminars

The 18th International Conference (and 7th Joint Slovakian-Croatian Conference) was held under the title 2015 International Conference on Electrical Drives and Power Electronics (EDPE) was held in the hotel Slovan, The High Tatras, Tatranská Lomnica on 21-23 Sept. 2015 (www.edpe.sk).

History: The conference was established in 1973 in Slovakia (and a similar one in Croatia). Both conferences merged in 2003 and since then it is a joitn Slovakin-Croatian conference organised alternatively in both countries.

Organisers of the conference since 2003: FEI, TU Košice. SES – Slovak Electrotechnical Society, Branch FEI TU Košice, Slovakia, FER – Faculty of Electrical Engineering and Computing, University of Zagreb, Croatia, KoREMA – Croatian Society for Communications, Computing, Electronics, Measurement and Control.

Sponsors: The technical consponsor were: IEEE, Czechoslovakia Section, IAS/IES Joint Chapter oc CZ Section IEEE, Media sponsors: Automatika Journal (Croatia), Transactions on Elctrical Engineering, Czech Republic and ATP Journal, Slovakia.

Number of EDPE 2015 participants: 115, number of papers: 92, prepared by authors from 28 countries.

Scientific program: The ppares were presented in 3 oral sessions, 3 poster session and 3 plenary sessions. The keynote lectures were presented by Prof. Pavol Bauer (DUT, Delft, The Netherlands), Prof. Peter Korondi (BMGE Budapest, Hungary), Prof. Ivan Petrović, University of Zagreb, Croatia. Proceedings: http://ieeexplore.ieee.org/xpl/mostRecentIssue.jsp?punumber=7311167.

Social program: The conference trip to: Joseph Petzwall Museum in Spiška Belá, Castel Museum in Kežmarok city, the wooden Articular Chuch in Kežmarok, where also a concert of famous Collegium Technicum mixed choir from the Technical University of Košice was held.

Conclusion: The conference had a great success, thanks esp. to the co-sponsorhip of the IEEE and to the to the perfect work of the organising committee from the Department: Viliam Fedák (general chair), Jaroslav Dudrik (program chair), Karol Kyslan (asistent), Marek Pástor (asistent), Viktor Šlapák (technician) and Rina

Tkáčiková (secretary).

8.2 Projects for Industry

- Control of Rotary Knife. For Datakon Košice, 2015. Co-ordinator: Ďurovský, F.

8.3 Student Competitions and Rewards

- BAČÍK, J.: RobotChallenge 2015 – (RobotChallenge is an international championship for self-made, autonomous, and mobile robots. It takes place annually in Vienna, Austria), 5th place from 10 participants in Air Race category.
- BAČÍK, J.: SCYR 2015, (19 May 2015). 1st place (Dean's Award) in EEE 2nd to 4th year section.
- SIVÝ, R.: SCYR 2015, (19 May 2015). FTP Slovakia Award.
- TALIAN, P.: SCYR 2015, (19 May 2015). Award of ELFA s.r.o. company for the section "1st year PhD students".
- ŽATKOVIČ, R.: SCYR 2015 (19 May 2015) – 1st place (Dean's Award) in EEE 1st year section.

8.4 Compositions for Dissertation Examinations

- BOROVSKÝ, T.: Drive control of wire rod rolling mill. Supervisor: Ďurovský, F.

9 PUBLICATIONS

9.1. Books

1. FEDÁK, V. – ZÁSKALICKÝ, P.: Support for Learning of Dynamic Performance of Electrical Rotating Machines by Virtual Models. Chapter in the book "E-Learning - Instructional Design, Organizational Strategy and Management", editor Boykja Gradinarova, INTECH Croatia, 2016, pp. 3-31. ISBN 978-953-51-2188-6.
2. FEDOR, P. - PERDUKOVÁ, D.: Nelineárne elektromechanické systémy. 1. vyd. Košice. TU, 2015. 103 pp. [CD-ROM]. ISBN 978-80-553-2037-3.

9.2 Textbooks

1. TIMKO, J. - ŽILKOVÁ, J.: Elektrické pohony**.** 1. vyd. Košice. TU, 2015. 199 pp. ISBN 978-80-553-2069-4.
2. FEDÁK, V.: Modelovanie elektromechanických sústav. 1. vyd. Košice. TU, 2015. 243 pp. ISBN 978-80-553-2111-0.
3. FERKOVÁ, Ž.: Elektrické stroje pre automatizáciu. 1. vyd. Košice. TU. 2015. 110 pp. ISBN 978-80-553-2070-0.
4. PERDUKOVÁ, D.: Spreadsheets. 1. vyd. Košice. TU, 2015. 208 pp. ISBN 978-80-553-1989-6.
5. ZÁSKALICKÝ, P.: Elektrické stroje. 1. vyd. Košice. TU, 2015. 138 pp. ISBN 978-80-553-2117-2.
6. ĎUROVSKÝ, F. - KAŇUCH, J.: Automobilová elektrotechnika. 1. vyd. Košice. TU 2015. 152 pp.

7. FERKOVÁ, Ž. - ĎUROVSKÝ, F. - LACKO, M.: Projektovanie elektrotechnických zariadení. 1. vyd. Košice. TU, 2015. 154 pp.

9.3 Scientific Journals

Journals indexed in Thomson Reuters "Current Contents" list

1. KAŇUCHOVÁ, M. - KOZÁKOVÁ, Ľ. - DRÁBOVÁ, M. - SISOL, M. - EŠTOKOVÁ, A. - KAŇUCH, J. - ŠKVARLA, J.: Monitoring and characterization of creation of geopolymers prepared from fly ash and metakaolin by X-ray photoelectron spectroscopy method. In: Environmental Progress & Sustainable Energy. Vol. 34, no. 3 (2015), pp. 841-849. ISSN 1944-7442.

Foreign Journals

1. FERKOVÁ, Ž. - BOBER, P.: Stator Pole Arrangement of the Permanent Magnet Stepper Motor with Asymmetric Stator for Achieving the Uniform Step. In: Maszyny Elektryczne - Zeszyty Problemowe. Vol. 107, no. 3 (2015), pp. 173-177. ISSN 0239-3646.
2. FERKOVÁ, Ž. - KAŇUCH, J.: Synchronous motor prototype with an external rotor using permanent magnets. In: Technical Transactions. Electrical Engineering. Vol. 8, no. 1-E (2015), DOI: 10.4467/2353737XCT.15. 024.3824, ISSN 1897-6301.
3. KAŇUCH, J. - DUČAY, A.: Design of a special motor with permanent magnets. In: Maszyny elektryczne - Zeszyty problemove. Vol. 105, no. 1 (2015), pp. 169-173. ISSN 0239-3646.
4. PERDUKOVÁ, D. - BATMEND, M. – FEDOR, P.: Automated Headstone Photo Engraving. Applied Mechanics and Materials, Vol. 816 (2015), pp 313-320. ISSN: 1662-7482.
5. SARASWATHI, A. – SANJEEVIKUMAR, P. – SUTHA, Sh. - BLAABJERG, F. - ERTAS, A. H. - FEDAK, V.: Analysis of enhancement in available power transfer capacity by STATCOM integrated SMES by numerical simulation studies. International Journal on Engineering Science and Technology, ELSEVIER, 10 Nov. 2015. Available online: http://www.sciencedirect.com/science/article/pii/S2215098615001627).
6. ZÁSKALICKÝ, P.: Harmonic analysis of the two-phase converters for small two-phase drives. In: Maszyny elektryczne - Zeszyty Problemowe. Vol. 106, no. 2 (2015), pp. 147-152. ISSN 0239-3646.

Foreign Journals indexed in Web of Science or Scopus databases

1. BAČÍK, J. - PERDUKOVÁ, D. – FEDOR, P.: Design of fuzzy controller for hexacopter position control. Advances in Intelligent Systems and Computing, Volume 347. Springer-International Publishing. Switzerland 2015, pp. 193- 202. ISSN 2194-5357.
2. BIROŠ, M., KYSLAN, K., ĎUROVSKÝ, F., A hardware-in-the-loop simulator based on a real Skoda Superb vehicle and RT-LAB/Carsim (2015), Acta Polytechnica, 55 (6), pp. 366-372.
3. FEDÁK, V., ĎUROVSKÝ, F., ÜVEGES, R., KYSLAN, K., LACKO, M., Implementation of Robot Control Algorithms by Real-time Control System (2015), International Journal of Engineering Research in Africa, Vol. 18, pp. 112-

119, Oct. 2015. ISSN: 1663-4144. (Access: http://www.scientific.net/JERA.18.112).

4. FEDOR, P. - PERDUKOVÁ, D.: Fuzzy Model for Middle Section of Continuous Line. International Journal of Engineering Research in Africa, Vol. 18 (2015), pp 75-84. ISSN 1663-3571.
5. FEDÁK, V. - ĎUROVSKÝ, F. - ÜVEGES, R. - KYSLAN, K.: HIL Simulator of Drives of an Industrial Robot with 6 DOF. In: Elektronika Ir Elektrotechnika. Vol. 21, no. 2 (2015), pp. 14-19. ISSN 1392-1215. Access: *http://eejournal.ktu.lt/index.php/elt/issue/view/414*.
6. FERKOVÁ, Ž.: Comparison between 2D and 3D modelling of induction machine using finite element method. In: Advances in Electrical and Electronic Engineering. Vol. 13, no. 2 (2015), pp. 120-126. ISSN 1336-1376.
7. PÁSTOR, M. - DUDRIK, J.: Predictive control of grid-connected multilevel inverter with output LCL filter. In: Elektronika ir Elektrotechnika. Vol. 21, no. 3 (2015), pp. 10-15. ISSN 1392-1215
   Access: *http://www.eejournal.ktu.lt/index.php/elt/article/view/10033*.

National Journals indexed in Web of Science or Scopus databases

National Journals

1. GIROVSKÝ, P. - KUNDRÁT, M.: Ovládanie robotickej ruky prostredníctvom dátovej rukavice. In: ATP Journal. Roč. 22, č. 5 (2015), pp. 56-57. ISSN 1335-2237.
2. PERDUKOVÁ, D. - FEDOR, P.: Využitie fuzzy logiky pri modelovaní pohonárskych komplexov. In: Strojárstvo EXTRA. Roč. 19, č. 4 (2015), pp.90-91. ISSN 1335-2938.

9.4 Other publications

Publication Type	Confereces		Other
	Foreign	Home	
Number	5	25	-

DEPARTMENT OF PHYSICS

http://web.tuke.sk/feikf/sk/index.html
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 by radiospectroscopic and static magnetic methods. At present, the research is focused on the study of magnetic properties of ferromagnetic materials and on the study of non-metallic materials using nuclear magnetic resonance (NMR) and some other complementary methods.

The department is divided into three sections:

- Section of Physics of Magnetic Materials,
- Section of Physics of Macromolecular Systems,
- Section of Physics of Non-Metallic Materials.

In 2009 the Solid State NMR Laboratory was established at the department. The laboratory is a part of the Slovak National NMR Centre and its research is focused on the study of non-metallic materials. The role of the laboratory is to meet research and educational requirements in the field of solid state NMR study of materials in Slovakia. The laboratory contributes to the development of solid state NMR applications in Slovakia.

Recently the Laboratory for modification and testing of properties of advanced materials has been established at the department within the project "Centre of Excellence for Integrated Research & Exploitation of Advanced Materials and Technologies in Automotive Electronics" (2010-2013). The laboratory is equipped with apparatus for the study of thermal and mechanical properties of materials and a desk top electron microscope for the study of surface structure 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 2015/2016, the department offers bachelor, engineer and PhD study programmes Physical Engineering of Advanced 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 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. Mária Kovaľaková, PhD.
doc. RNDr. Ladislav Novák, CSc.
doc. RNDr. Dušan Olčák, CSc.
doc. RNDr. Jana Tóthová, PhD.
doc. RNDr. Ján Ziman, CSc.

Assistant Professors:

RNDr. Anton Baran, PhD.
Mgr. Peter Duranka, PhD. (since 1 June 2015)
RNDr. Oľga Fričová, PhD.
RNDr. Zuzana Gibová, PhD.
RNDr. Viktor Hronský, CSc.
RNDr. Mária Hutníková, PhD.
RNDr. Ján Kecer, PhD.
RNDr. Mária Kladivová, PhD.
RNDr. Jozef Kravčák, PhD.
Ing. RNDr. Jozef Onufer, PhD.
RNDr. Ladislav Ševčovič, PhD. (till 31 May 2015)
RNDr. Natália Šmídová, PhD.
RNDr. Peter Vrábel, PhD.

PhD. Students:

Mgr. Lukáš Hubač
Mgr. Magdaléna Uhrínová (till 30 June 2015)
Ing. Viktória Šuhajová (till 30 June 2015)

Technical Staff:

Alena Jakabová
Ing. František Mižák

3 LABORATORIES

3.1. Teaching and Research Laboratories

- Students laboratories for basic course in physics

- Solid state NMR laboratory
- Laboratory for magnetic measurements
- Laboratory of physics of macromolecular systems
- Laboratory of advanced materials

3.2 Special Measuring Instruments

- Multinuclear solid state NMR spectrometer Varian 400 MHz
- Experimental apparatus for the study of magnetization characteristics (magnetization curve, susceptibility, magnetoresistance) of ferromagnetic materials
- Desktop electron microscope with disperse rtg spectrometer
- DSC analyser
- Dynamic mechanical analyser
- Sputtering apparatus
- Rotational highly sensitive viscometer of the Couette type Viscodens
- Vibrational viscosimeter SV – 10
- Rotational modular compact rheometer (MCR 502)
- Capillary automated micro viscometer (AMVn)
- DMA 4500 M density meter

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
Physics I (FEI)	1st	2/2	Hlaváčová Fričová, Olčák
Physics (FEI)	1st	2/2	Gibová
Physics Seminar I(FEI)	1st	0/2	Gibová
Physics Seminar (FEI)	1st	0/2	Gibová
Physics I (FEI) – external study	1st	2/0	Baran
Physics I (FEI, in English)	1st	2/2	Hlaváčová
Physics 1 (SvF)	1st	2/2	Onufer
Introduction to Physics (SvF)	1st	0/2	Hutníková
Physics 1 (FBERG)	2nd	2/2	Tóthová
Physics I (FBERG)	2nd	2/2	Tóthová
Physics (FBERG)	2nd	2/2	Tóthová

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Physics (FBERG) – external study	2nd	2/0	Baran
Physics 1 (FBERG) – external study	2nd	2/0	Baran
Physics I (FBERG) – external study	2nd	2/0	Baran
Physics II (FEI)	2nd	3/2	Hlaváčová, Olčák, Gibová
Physics II (FEI, in English)	2nd	3/2	Hlaváčová
Physics II (FEI) – external study	2nd	2/0	Baran
Physics I (SjF)	2nd	3/3	Novák
Physics (SjF)	2nd	3/3	Novák
Physics (SjF) – external study	2nd	2/0	Kecer
Physics II (SvF)	2nd	2/2	Kovaľaková
Physics (SvF)	2nd	2/2	Kovaľaková
Physics Fundamentals (HF)	2nd	4/3	Ziman
Physics Fundamentals (HF) – external study	2nd	3/0	Kladivová
Physics Seminar (HF)	2nd	0/2	Kecer
Physics 2 (HF)	3rd	2/2	Ziman
Physics II (FBERG)	3rd	2/2	Tóthová
Physical measurement	3rd	2/3	Gibová
Introduction to Quantum Mechanics	3rd	2/3	Kovaľaková
Selected Topics in Physics	3rd	2/3	Kecer
Solid State Physics	6th	3/1/1	Hronský
Computer Physics	6th	3/2	
Bachelor Thesis II	6th	6/0	Tóthová

4.2 Graduate Study (Ing.)

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Physics 2 (FBERG)	1st	2/2	Tóthová
Physics III (FBERG)	1st	2/3	Baran
Physics 2 (FBERG) – external study	1st	2/0	Baran
Physics (HF) – external study	1st	2/0	Kladivová
Physics of Solid Phase	2nd	2/2	Hronský
Diploma project	2nd	6/0	Onufer, Olčák
Experimental Methods in Materials Sciences II	2nd	2/4	Ziman, Olčák
NMR spectroscopy of solids	2nd	2/2	Olčák
Magnetism and Magnetic Materials	2nd	2/1	Ziman
Polymer Based Materials	2nd	2/0	Fričová
Solid State Spectroscopic Methods	3rd	2/2	Šmídová
Materials for Biomedical Applications	3rd	2/2	Tóthová
Superconductive Materials	3rd	2/2	Vrábel
Diploma Project 2	3rd	2/6	Onufer, Olčák

5 RESEARCH PROJECTS

- *Study of biodegradable polymeric materials using NMR spectroscopy,* S.G.A. project No. 1/0492/13. Principal investigator: doc. RNDr. Dušan Olčák, CSc.

- *Anomalous properties of suspensions of nanoparticles and polymers*, S.G.A. project No. 1/0348/15, Principal investigator: prof. RNDr. V. Lisý, DrSc.
- *Dynamics of magnetization processes in amorphous ferromagnetic materials*, S.G.A. project, No. 1/0413/15. Principal investigator: doc. RNDr. J. Ziman, CSc.
- *Structure and physical properties of non-ordered and quasi-ordered metallic alloys.* S.G.A. project No. 1/0148/12. Principal investigator: prof. RNDr. Pavol Sovák, CSc. (Faculty of Science, Pavol Jozef Šafárik University in Košice). Collaborator: L. Novák.
- *Domain wall dynamics in thin ferromagnetic wires,* APVV project, No. APVV-0027-11. Principal investigator: doc. RNDr. R. Varga, DrSc. (Faculty of Science, Pavol Jozef Šafárik University in Košice). Co-operating organisation: Technical University of Košice. Collaborators: J. Ziman, M. Kladivová, J. Onufer, J. Kravčák, V. Šuhajová
- *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
- *Educational Centre for Investigation and Development of Complex Nanosystems,* Agency of the Ministry of Education, Science, Research and Sport of the Slovak Republic for the Structural Funds of EU, project No. 21102300061, Principal investigator: doc. RNDr. Peter Kopčanský, CSc. (Institute of Experimental Physics, SAS Košice). Collaborators: J. Tóthová, V. Lisý
- *International Virtual Laboratory of the Physics of Progressive Materials,* Agency of the Ministry of Education, Science, Research and Sport of the Slovak Republic for the Structural Funds of EU, project No. 26110230097, Principal investigator: doc. RNDr. Peter Kopčanský, CSc. (Institute of Experimental Physics, SAS Košice). Collaborators: J. Tóthová, V. Lisý
- *Transformation of the outcomes of research projects into educational process oriented to physical engineering of materials,* Project KEGA No. 048TUKE-4/2013. Principal investigator: doc. RNDr. Dušan Olčák, CSc.
- *Improvement of physics teaching at the Technical University of Košice using video-demonstration experiments*, Project KEGA, No. 032TUKE-4/2014, Principal investigator: doc. RNDr. Mária Kovaľaková, PhD.
- *Recuperation in electromobile through electromagnetic fields*, Grant Project „Develop (throught) technics" of Foundation Volkswagen Slovakia, Principal investigator: RNDr. Jozef Kravčák, PhD.

6 CO-OPERATION

6.1 Co-operation in Slovakia

- Faculty of Chemical and Food Technology, Slovak University of Technology, Bratislava
- Faculty of Science, Comenius University in Bratislava
- Institute of Experimental Physics of the Slovak Academy of Sciences, Košice
- Institute of Inorganic Chemistry of the Slovak Academy of Sciences, Bratislava

- Institute of Physics, Faculty of Science, P. J. Šafárik University in Košice
- Joint Laboratory of Glass VILA, Alexander Dubček University of Trenčín
- Polymer Institute, Slovak Academy of Sciences, Bratislava

6.1.1 Visitors to the Department

- Doc. Dr. Antal Lovas, DrSc., Budapest University of Technology and Economics, Hungary

6.2 International Co-operation

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

6.3 Membership in International Organizations and Societies

- 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)
- Kecer, J.: member of SMAGS
- Kladivová, M.: member of the Slovak Physics Olympiad, SFS, JSMF, and SMAGS
- Kovaľaková, M.: member of SFS
- Kravčák, J.: member of SFS and SMAGS
- Lisý, V.: Scientific Grant Agency of the Slovak Republic, member of the permanent commission for the awards of DrSc. degrees in Condensed Matter Physics and Acoustics, 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
- Ziman, J.: member of SFS and vice-chairman of SMAGS

7 THESES

Thesis type	Bachelor	Master	Doctoral
Number	0	0	2

8 OTHER ACTIVITIES

9 PUBLICATIONS

9.1. Journals

1. ZIMAN, J. - ŠUHAJOVÁ, V. - KLADIVOVÁ, M.: Effect of domain structure on the impedance of ferromagnetic wire with circumferential anisotropy. In: Sensors and Actuators A-Physical. Vol. 223 (2015), p. 134-140. - ISSN 0924-4247 http://dx.doi.org/10.1016/j.sna.2015.01.005.
2. TÓTHOVÁ, J. - PAULOVIČOVÁ, K. - LISÝ, V.: Viscosity measurements of dilute Poly(2-ethyl-2-oxazoline) aqueous solutions near theta temperature analyzed within the joint Rouse-Zimm model. In: International Journal of Polymer Science. 690136 (2015), p. 1-7. - ISSN 1687-9422
3. JÓZEFCZAK, A. - MOLČAN, M. - ROZYNEK, Z. - HORNOWSKI, T. - SKUMIEL, A. - TIMKO, M. - TÓTHOVÁ, J. - Kopčansky - LESZCZYŃSKI, B.: Properties of magnetosome suspension under the influence of magnetic field. In: Acta Physica Polonica A. Vol. 127, no. 2 (2015), p. 629-631. - ISSN 0587-4246
4. OLČÁK, D. - HRONSKÝ, V. - KOVAĽAKOVÁ, M. - VRÁBEL, P. - CHODÁK, I. - ALEXY, P.: High-Resolution Solid-State NMR Characterization of Morphology in Annealed Polylactic Acid. In: International Journal of Polymer Analysis and Characterization. Vol. 20, no. 5 (2015), p. 396-405. - ISSN 1023-666X http://www.tandfonline.com/toc/gpac20/20/5#.VdNaTnyJiUk.
5. JANKOVIČ, Ľ. - KRONEK, J. - MADEJOVÁ, J. - HRONSKÝ, V.: (9, 10-Dihydroxyoctadecyl) ammonium: A Structurally Unique Class of Clay Intercalable Surfactants. In: European Journal of Inorganic Chemistry. No. 17 (2015), p. 2841-2850. - ISSN 1434-1948 http://onlinelibrary.wiley.com/doi/10.1002/ejic.v2015.17/issuetoc.
6. PÁLKOVÁ, H. - HRONSKÝ, V. - BIZOVSKÁ, V. - MADEJOVÁ, J.: Spectroscopic study of water adsorption on Li+, TMA+ and HDTMA+ exchanged montmorillonite. In: Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy. Vol. 149 (2015), p. 751-761. - ISSN 1386-1425 http://www.sciencedirect.com/science/journal/13861425/149.
7. NAZMUNNAHAR, M. - RYBA, T. - DEL VAL, J.J. - IPATOV, M. - GONZALEZ, J. - HAŠKOVÁ, V. - SZABÓ, P. - SAMUELY, P. - KRAVČÁK, J. - VARGOVA, Z. - VARGA, R.: Half-metallic Ni2MnSn Heusler alloy prepared by rapid quenching. In: Journal of Magnetism and Magnetic Materials. Vol. 386 (2015), p. 98-101. - ISSN 0304-8853 http://www.sciencedirect.com/science/article/pii/S0304885315002875.
8. HUTNÍKOVÁ, M. - MIŠKOVÁ, A.: Continuous Stockwell transform: Coherent states and localization operators. In: Journal of Mathematical Physics. Vol. 56, no. 7 (2015), p. 1-14. - ISSN 0022-2488
9. ONUFER, J. - ZIMAN, J. - KLADIVOVÁ, M.: Unidirectional effect in domain wall propagation observed in bistable glass-coated microwire. In: Journal of Magnetism and Magnetic Materials. Vol. 396 (2015), p. 313-317. - ISSN 0304-8853 http://www.sciencedirect.com/science/article/pii/S0304885315304790.
10. ZIMAN, J. - KLADIVOVÁ, M. - ŠUHAJOVÁ, V.: Impedance and domain wall mass determination in cylindrical wire with circular anisotropy. In: Journal of Magnetism and Magnetic Materials. Vol. 393 (2015), p. 363-369. - ISSN 0304-8853 http://www.sciencedirect.com/science/article/pii/S0304885315302249.

11. TÓTHOVÁ, J. - LISÝ, V.: Generalized Langevin theory of the Brownian motion and the dynamics of polymers in solution. In: Acta Physica Slovaca. Roč. 65, č. 1 (2015), s. 1-64. - ISSN 0323-0465
12. STUDENYAK, I. P. - DEMKO, P. Yu. - BENDAK, A. V. - KOVALCHUK, O. V. - KOVALCHUK, T. M. - LISÝ, V. - KOPČANSKÝ, P. - TIMKO, M. - TOMAŠOVIČOVÁ, N. - ZAVISOVA, V. - GDOVINOVA, V. - MISKUF, J. - OLEINIKOVA, I. V. - LAD, A. I. - KUCHERIAVCHENKOVA, N. M.: Influence of superionic nanoparticles Cu6PS5I on dielectric properties of nematic liquid crystal 6CHBT.In: Semiconductor Physics, Quantum Electronics and Optoelectronics. Vol. 18, no. 2 (2015), p. 205-208. - ISSN 1560-8034 http://journal-spqeo.org.ua/n2_2015/P205-208abstr.html.
13. GIBOVÁ, Z.: André Marie Ampére a jednotka elektrického prúdu. In: Posterus. Roč. 8, č. 9 (2015), s. 1-6. - ISSN 1338-0087 http://www.posterus.sk/?p=18188#more-18188.
14. ŠMELKO, M. - KRAVČÁK, J. - PRASLIČKA, D. - BLAŽEK, J. - DRAGANOVÁ, K.: Impact of Modified Endings on Noise Characteristics of Fe-Based Glass-Coated Microwires. In: Journal of Electrical Engineering. Roč. 66, č. 7s (2015), s. 30-32. - ISSN 1335-3632 http://iris.elf.stuba.sk/JEEEC/data/pdf/7s_115-08.pdf.
15. HUTNÍK, O. - HUTNÍKOVÁ, M.: Toeplitz operators on Poly-analytic spaces via time-scale analysis. In: Operators and Matrices. Vol. 8, no. 4 (2014), p. 1107–1129. - ISSN 1846-3886 (print), 1848-9974 (online) http://oam.ele-math.com.
16. TÓTHOVÁ, J. - TIMKO, M. - KOPČANSKÝ, P. - LISÝ, V.: Comment on "Rheological Properties of Polyethylene Glycol (PEG 35000): An Interpretation of a Negative Intrinsic Viscosity and a High Huggins Coefficient Value." In: Journal of Macromolecular Science, Part B-Physics. Vol. 53, no. 11 (2014), p. 1763-1765. - ISSN 0022-2348 http://www.tandfonline.com/doi/abs/10.1080/00222348.2014.967648.
17. TÓTHOVÁ, J - TIMKO, M. - KOPČANSKÝ, P. - LISÝ, V.: Reply to rebuttal by Bechekh and Ghaouar regarding "Rheological Properties of Polyethylene Glycol: an interpretation of a negative intrinsic viscosity and a high Huggins coefficient value". In: Journal of Macromolecular Science: Part B-Physics. Vol. 53, no. 11 (2014), p. 1771-1775. - ISSN 0022-2348

9.2 Other publications

Publication Type	Articles on Internet	Conference Papers		Conference Abstracts		Textbooks
		Foreign	Home	Foreign	Home	
Number	0	2	6	1	5	8

DEPARTMENT OF CYBERNETICS AND ARTIFICIAL INTELLIGENCE

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

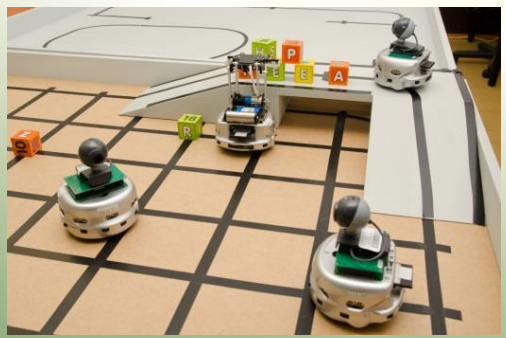
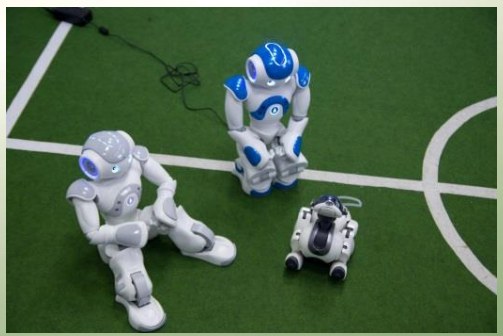
Head of Department
prof. Ing. Peter Sinčák, CSc.
E-mail: peter.sincak@tuke.sk

1 DEPARTMENT'S PROFILE

The Department of Cybernetics and Artificial Intelligence (DCAI) is responsible for education in two study programs: Intelligent Systems, and Business Information Systems at all three levels of university education (bachelor, master and PhD).

The main research topics at the DCAI are computational intelligence techniques for modeling of intelligent systems and miscellaneous applications, e.g. in robotics; intelligent methods and algorithms for control and modeling of large-scale systems; internet of things; risk-sensitive diagnosis of uncertain systems; intelligent decision support systems; pattern recognition; knowledge discovery; knowledge technologies for information retrieval and knowledge management and business information systems.

The predecessor of the Department was founded in 1964. Department of Cybernetics and Artificial Intelligence was adapted in 1989. Currently it has 22 staff members, 28 internal and 6 external Ph.D. students.

There are 3 research centers within the department: Center of Intelligent Technologies, Center of Applied Cybernetics and Center of Business Information Systems (http://web.tuke.sk/kkui/en/vyskumne-skupiny-a-projekty). The Department is involved in a number of research and educational projects (see below).

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. Peter Butka, PhD.
doc. Ing. Anna Filasová, CSc.
doc. Ing. Anna Jadlovská, PhD.
doc. Ing. Ján Jadlovský, CSc.
doc. Ing. Marián Mach, CSc.
doc. Ing. Kristína Machová, CSc.

Assistant Professors:
Ing. František Babič, PhD.
Ing. Peter Bednár, PhD.
Ing. Vladimír Gašpar, PhD.
Dr. Ing. Vratislav Hladký
Ing. Slávka Jadlovská, PhD.
Ing. Rudolf Jakša, PhD.
Ing. Ján Liguš, PhD.
Ing. Jana Ligušová, PhD.
Ing. Peter Papcun, PhD.
Ing. Martin Sarnovský, PhD.
Dr. Ing. Ján Vaščák
Ing. Mária Virčíková, PhD.

Researchers:
Ing. Marek Bundzel, PhD.
Ing. Jozef Wagner, PhD.
Ing. Gabriel Tutoky, PhD.

Technical Staff:
Tatiana Baňasová
Ing. Renáta Giannusis

Ph.D. Students:

1st.

Internal
Ing. Martin Čertický
Ing. Jozef Mocnej
Ing. Anna Novická
Ing. Miroslav Smatana
Ing. Peter Takáč
Ing. Michal Vadovský
Ing. Dominik Vošček
Ing. Michal Varga

2nd.	**Internal** Ing. Ján Čabala Ing. Jakub Hvizdoš Ing. Martin Mikula Ing. Martin Miškuf Ing. Miroslava Muchová Ing. Jaroslav Ondo Ing. Matej Oravec
3rd.	**Internal** Ing. Tomáš Cádrik Ing. Michal Kopčík Ing. Tomáš Lojka Ing. Gergely Magyar Ing. Ladislav Nyulászi Ing. Michal Puheim
4th.	**Internal** Ing. Jakub Čerkala Ing. Cecília Havrilová Ing. Pavol Liščinský Ing. Peter Michalik Ing. Martina Tarhaničová
5th.	**Internal** Ing. Mgr. Peter Koncz Ing. Alexandra Lukáčová

3 LABORATORIES

- CyberEduCentre http://cybereducentre.fei.tuke.sk/cybereducentre/index.html
- CyberVirtLab http://cybervirtlab.fei.tuke.sk/CyberVirtLab/
- Laboratory of Intelligent Control Network and Software Systems for Control (L-509b), http://cybereducentre.fei.tuke.sk
- Laboratory of Cybernetics (L-513)
- Laboratory of Intelligent Cybernetic Systems (L-536)
- Center for Intelligent Technologies: Laboratory of Autonomous Systems (LAS-CIT), Laboratory of Humanoid Robots (LHR-CIT) http://www.ai-cit.sk
- Research Center of Modern Control Techniques and Industrial Informatics – CMCT_II (http://kyb.fei.tuke.sk)
- Laboratory of Production Lines and Image Recognition (V147 CMCT_II) http://kyb.fei.tuke.sk/laben/miest/V147.php
- Laboratory of Process Control (V144 CMCT_II) http://kyb.fei.tuke.sk/Laboratoria/miest/V144.php
- Laboratory of ALICE experiment - CERN (V142b CMCT_II)
- Laboratory of Mechatronics Systems (V142 CMCT_II) http://kyb.fei.tuke.sk/Laboratoria/miest/V142.php
- Laboratory of Robotics (V134 CMCT_II) http://kyb.fei.tuke.sk/Laboratoria/miest/V134.php
- Laboratory of Knowledge Technologies (V-101a)

- Laboratory of Computer Control Systems Design (V101b CMCT_II), http://kyb.fei.tuke.sk/laben/miest/V101b.php
- Laboratory of intelligent control systems of aircraft engines (in cooperation with Faculty of Aeronautics) http://lirslm.fei.tuke.sk
- Laboratory of Business processes (B11)

4 TEACHING

4.1 Undergraduate Study (Bc.)

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Foundations of systems intelligence	2nd	2/2	Sinčák
Foundations of Automatic Control	2nd	2/2	Jadlovská, Jadlovský
Introduction to Business Informatics	2nd	2/2	Paralič
Computational artificial intelligence	3rd	2/2	Sinčák
Simulation Systems	3rd	2/2	Jadlovská A., Jadlovská S.
Simulation systems in Business Information Systems	3rd	2/2	Butka
Control and Visualization Systems	3rd	2/2	Zolotová
Knowledge-Based Systems	3rd	2/2	Machová
Fuzzy Systems	3rd	2/2	Vaščák
Selected themes from Cybernetics	3rd	2/2	Zolotová
Microcontrollers	3rd	2/2	Jadlovský
Analysis and Design of Information systems	4th	2/2	Babič, Sarnovský M.
Web Technologies	4th	2/2	Bednár
Control of Technological Processes	4th	2/2	Jadlovský
Scheduling and Logistics	4th	2/2	Paralič
Elements of Control Systems	4th	2/2	Jadlovský
Optimal Control of Hybrid Systems	5th	2/2	Jadlovská A.
Intelligent Robotics	5th	2/2	Bundzel
Business Analytics	5th	2/2	Butka
Project Management	5th	2/2	Babič
Neural Networks	5th	2/2	Sinčák
Models and Industrial Process Control	5th	2/2	Filasová, Jadlovská S.
Computer Tools for Technological Systems Control	5th	2/2	Jadlovský
Optimisation in Economic Processes	5th	2/2	Filasová
Management in practice	6th	2/2	Babič
Service Robotics	6th	2/2	Virčíková
System Analysis and Synthesis	6th	2/2	Gašpar
IT Environment Control	6th	2/2	Sarnovský M.

4.2 Graduate Study (Ing.)

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Discrete Dynamic Systems	1st	2/2	Filasová
Computer Vision	1st	2/2	Bundzel
Humanoid Technologies	1st	2/2	Virčíková
Knowledge Discovery	1st	2/2	Paralič, J.
Architectures of Industrial	1st	2/2	Zolotová

Information Systems			
Subject	**Semester**	**Lectures/exercises** (hours per week)	**Lecturer**
Engineering Econometrics	1st	2/2	Krokavec
Multi-agent and Network Control Systems	1st	2/2	Papcun
Machine Learning	2nd	2/2	Machová
Heuristic Optimization Processes	2nd	2/2	Mach
Control and Artificial Intelligence	2nd	2/2	Jadlovská
Technologies for Big Data Processing	2nd	2/2	Bednár, Sarnovský M.
Evolutionary Algorithms	2nd	2/2	Mach
Distributed Control Systems	2nd	2/2	Jadlovský
Complexity and Decision Making	2nd	2/2	Gašpar
Hybrid Computational Intelligence	2nd	2/2	Vaščák
Control and Visualisation Systems	2nd	2/2	Zolotová
Knowledge Management	3rd	2/2	Paralič, J.
Management Information Systems	3rd	2/2	Jadlovský
Diagnostics and Robust Control	3rd	2/2	Filasová
Cognitive Robotics	3rd	2/2	Bundzel
Semantic and Social Web	3rd	2/2	Machová
Languages for Intelligent Systems	3rd	2/2	Mach
Interactive Systems	3rd	2/2	Sinčák
New Trends in Intelligent Systems	4th	2/2	Sinčák
New Trends in Business Information Systems	4th	2/2	Paralič

5 RESEARCH AND EDUCATIONAL PROJECTS

- *Semantic keyword-based search on structured data sources (KEYSTONE),* COST Action IC-1302, European Cooperation in Science and Technology, duration: 2014 – 2017, members from our department: Peter Butka (Management Committee member for Slovakia), Peter Bednár, Martin Sarnovský, Ján Paralič
- *Autonomous Control for a Reliable Internet of Services (ACROSS),* COST Action IC-1304, European Cooperation in Science and Technology, duration: 2013 – 2016, members from our department: Peter Bednár (Management Committee member for Slovakia)
- The Technical University was accepted as a full member of the *ALICE experiment* at the European Organization for Nuclear Research (CERN) on September 1st, 2014. This will provide an opportunity for direct participation in the research and development of the "*Upgrade of the Alice Inner Tracking System"*, planned for installation in the second long LHC shutdown in the years 2018-2019. The research team led by Ján Jadlovský (Team leader TUKE) is actually composed of members from our department: Anna Jadlovská, Slávka Jadlovská, Jakub Čerkala, Michal Kopčík, Matej Oravec, Ján Čabala, Michal Varga, Dominik Vošček (duration: 2014-2018)
- *MODINFORM: Modern informetric methods for the evaluation of scientific research* (bilateral Czech-Slovak APVV project). Slovak Research and Development Agency, project no. SK-CZ-2013-0062, duration: 2015, members: Ján Paralič (project leader for TUKE), Gabriel Tutoky, Martin Sarnovský, Cecília Havrilová, Peter Koncz
- *Incremental learning methods for intelligent systems,* Scientific Grant Agency project No. 1/0667/12, duration: 2012 – 2015, members: Peter Sinčák (project

leader)

- *Methods for analysis of collaborative processes mediated by information systems,* Scientific Grant Agency project No. 1/1147/12, duration: 2012 – 2015, members: Ján Paralič (project leader), František Babič, Kristína Machová, Martin Sarnovský, Peter Butka, Karol Furdík, Gabriel Tutoky, Jozef Wagner, Martin Repka, Peter Koncz, Adela Tušanová, Alexandra Lukáčová, Ján Štofa, Cecília Havrilová, Eva Turňová, Miroslava Muchová, Martin Mikula
- *Resident core of active reconfigurable control systems,* Scientific Grant Agency project No. 1/0348/14, duration: 2014 – 2016, members: Dušan Krokavec (project leader), Filasová Anna, Hladký Vratislav
- *Integration of study programs Cybernetics and Artificial Intelligence.* Cultural and Education Grant Agency Project No. 034TUKE-4/2014, duration 2014 – 2016, members: Ján Vaščák (project leader), Anna Jadlovská, Mária Virčíková, Rudolf Jakša, Peter Sinčák, Marián Mach, Kristína, Machová
- *CyberLabTrainSystem – demonstrational and training of informationcontrol systems – innovation.* Cultural and Education Grant Agency Project No. 001TUKE-4/2015, duration 2015 – 2017, members: Iveta Zolotová (project leader), Marek Bundzel, Peter Papcun, Ján Sarnovský, Anna Jadlovská, Ján Jadlovský, Slávka Jadlovská, Tomáš Lojka, Peter Michalik, Martin Miškuf, Jozef Mocnej, Jakub Čerkala, Michal Kopčík, Ľuboš Popovič, Vratislav Hladký, Jana Ligušová, Ján Liguš, Dominik Vošček, Michal Varga, Matej Oravec, Ján Štofa, Roman Mihaľ, Ján Čabala, Anna Novická, Michal Puheim
- *Introduction of Education in Big Data Analytics.* Cultural and Education Grant Agency Project No. 025TUKE-4/2015, duration 2015 – 2017, members: Ján Paralič (project leader), Martin Sarnovský, Peter Bednár, František Babič, Peter Butka, Kristína Machová, Marián Mach, Michal Vadovský, Miroslav Smatana, Miroslava Muchová, Martin Mikula
- *Digitalization, virtualization and testing of a small turbojet engine and its elements using stands for modern applied lecturing,* Cultural and Education Grant Agency Project No. 014TUKE-4/2015, duration 2015 – 2017, members: Peter Butka (previously Ladislav Madarász) - project leader, Rudolf Andoga (project vice leader), Tobiáš Lazar, Ladislav Főző, Vladimír Gašpar, Jozef Judičák, Michal Puheim, Ladislav Nyulászi, and Róbert Bréda
- *University Science Park TECHNICOM for Innovation Applications Supported by Knowledge Technology*, ITMS: 26220220182, supported by the Research & Development Operational Programme funded by the ERDF. Three pilot projects are performed at our department:
    - PP4: IT tools and services for analysis of various types of processes, Ján Paralič pilot project leader, members: František Babič, Jozef Wagner, Gabriel Tutoky, Martin Sarnovský, Peter Bednár, Peter Butka, Alexandra Lukáčová, Vladimír Gašpar, Cecília Havrilová, Michal Puheim, Miroslava Muchová, Martin Mikula
    - PP5 – Cloud and dynamic services for distributed. intelligent and mobile networks: lead by Frantisek Jakab from DCI, from DCAI have been partcipating: Iveta Zolotová, Peter Michalik, Tomáš Lojka, Martin Miškuf
    - PP6: Use of artificial intelligence in intelligent systems, Peter Sinčák pilot project leader
    - PP7: Center for Nondestructive Diagnostics of Technological Processes Using Standard Software for Control and Communication, Ján Jadlovský pilot project leader, members: Ján Sarnovský, Anna Jadlovská, Iveta

Zolotová, Slávka Jadlovská, Peter Papcun, Jakub Čerkala, Michal Kopčík, Matej Oravec, Ján Čabala

- *Package of elements for improvement and innovation in education at TUKE, ITMS: 26110230070*, supported by the Operational Programme Education, funded by the ERDF. Faculty coordinator: Iveta Zolotová, experts: Peter Sinčák, Marek Bundzel, Jana Ligušová, Ján Liguš, Ján Sarnovský, Rudolf Jakša, Martin Sarnovský, Ján Vaščák
- *Package of quality improvement at TUKE through networks, ITMS: 26110230086*, supported by the Operational Programme Education, funded by the ERDF. Faculty coordinator: Iveta Zolotová, experts: Vratislav Hladký, Jana Ligušová, Marek Bundzel, Peter Sinčák, Ján Jadlovský, Anna Jadlovská, Ján Sarnovký, Ján Liguš, Iveta Zolotová
- *Package add-ons for further reform of education at TUKE, ITMS: 26110230093,* supported by the Operational Programme Education, funded by the ERDF. Faculty coordinator: Iveta Zolotová, experts: František Babič, Kristína Machová, Ján Paralič, Ján Liguš, Jana Ligušová, Anna Jadlovská, Ján Jadlovský, Marek Bundzel, Ján Vaščák, Peter Sinčák, Martin Sarnovský, Iveta Zolotová
- *National project Universities as Engines of Knowledge Society - University students to practice, ITMS: 26110230120*, supported by the Operational Programme Education, funded by the ERDF. Faculty coordinator: Iveta Zolotová, experts: Peter Sinčák, Iveta Zolotová, Marek Bundzel, Ján Vaščák, Anna Jadlovská, Rudolf Jakša
- *Transfer of the IoT open cloud platform into industry*, IBM Country Project Innovation Award. Project leader: Iveta Zolotová, members: Tomáš Lojka, Marek Bundzel, Martin Miškuf, Jozef Mocnej, Michal Puheim, students
- *Pilot laboratory projects - IoT with IBM*. IBM Country Project Innovation Award. Project leader: Iveta Zolotová, members: Pater Papcun, Tomáš Lojka, Marek Bundzel, Martin Miškuf, Jozef Mocnej, Anna Novická, Daniel Lorenčík, Michal Puheim, students
- *Microsoft Azure Research Award*: IoT Cloud Control – Smart Living and Smart Manufacturing, project leader: Iveta Zolotová, members: Jozef Mocnej, Pater Papcun, Tomáš Lojka, Marek Bundzel, Martin Miškuf, Daniel Lorenčík, Michal Puheim, študenti 1. a 2. stupňa
- *CASTLE - Comfortable and SmarT Living Expanded:* Tatrabanka – Foundation E-talent. Project leader: Peter Papcun, members: Iveta Zolotová, Jozef Mocnej, Martin Miškuf, Tomáš Lojka, students
- *Data collection and smart industry in the Internet of Things and cloud technology*, Faculty research grant. Principal investigator: Tomáš Lojka

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
- Faculty of Informatics and Information Technologies, Slovak University of Technology in 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

- 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
- Department of Control and Information Systems, Faculty of Electrical Engineering, University of Zilina
- IT Valley Košice
- US Steel Košice
- Microsoft Slovakia
- IBM Slovakia
- Control Systems Slovakia
- Betamont Slovakia

6.1.1 Visitors to the Department

- Mike Starkey - CTO & Vice President IBM CEE (Central and Eastern Europe), Member of the IBM Academy of Technology Leadership Team
- Dalibor Fiala (2x), University of West Bohemia Plzeň, Czech Republic
- Martin Dostal, University of West Bohemia Plzeň, Czech Republic
- Francesco Guerra, University of Modena, Italy
- Wouter Addink, Naturalis Biodiversity Center Leiden, Netherlands
- Raquel Amaro, Center of Linguistics of the University of Lisbon, Portugal
- Victor Bacu, Technical University of Cluj-Napoca, Romania
- Krisztian Balog, University of Stavanger, Norway
- Omar Boucelma, LSIS Aix-Marseille University, France
- John Breslin, National University of Ireland, Galway, Ireland
- Paulo Cunha, University of Coimbra, Portugal
- Tomche Delev, Ss. Cyril and Methodius University, Macedonia
- Elena Demidova, L3S Research Center, Hannover, Germany
- Gilles Falquet, Universite de Geneve, Switzerland
- Antonio Farina Martinez, University of A Coruña, Spain
- Javier David Fernandez, Vienna University, Austria
- Nicola Ferro, University of Padua, Italy
- Dorian Gorgan, Technical University of Cluj-Napoca, Romania
- Yaakov HaCohen-Kerner, Jerusalem Coll. of Technology Research, Israel
- Atanas Hristov, Univ. of Information Science and Technology, Macedonia
- Sergio Ilarri, University of Zaragoza, Spain
- Dragan Ivanovic, University of Novi Sad, Serbia
- Marina Ivasic-Kos, University of Rijeka, Croatia
- Georgia Kapitsaki, University of Cyprus, Cyprus
- Olivera Kitanovic, University of Belgrade, Serbia
- Javier Lacasta, University of Zaragoza, Spain
- Mihai Lupu, Vienna University of Technology, Austria
- Gjorgji Madjarov, Ss. Cyril and Methodius University, Macedonia
- Abdulhussain E. Mahdi, University of Limerick, Ireland
- Sanda Martincic-Ipsic, University of Rijeka, Croatia
- Constantin Nandra, Technical University of Cluj-Napoca, Romania
- Andreas Nürnberger, Otto-von-Guericke-University Magdeburg, Germany
- Alexandre Miguel Pinto, University of Coimbra, Portugal
- Miran Pobar, University of Rijeka, Croatia
- Ranka Stankovic, University of Belgrade, Serbia

- Teodor Stefanut, Technical University of Cluj-Napoca, Romania
- Julian Szymanski, Gdansk University of Technology, Poland
- Raquel Trillo Lado, University of Zaragoza, Spain
- Yannis Velegrakis, University of Trento, Italy
- Hubert Zarzycki, Wroclaw School of Information Technology, Poland

6.2 International Co-operation

- Department of Software Engineering and Interactive Systems, Vienna University of Technology, Austria
- Dept. for Technical & Operational Information Systems (Data & Knowledge Engineering Group), Otto-von-Guericke-University Magdeburg, Germany
- University of Regensburg, Germany
- University of Dortmund, Germany
- Waseda University, Tokyo, Japan
- Technical University of Czestochowa
- Tokyo Institute of Technology, Japan
- Kuyshu Institute of Technology, Japan
- University Pablo de Olavide of Seville, Spain
- 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 Ostrava, Czech Republic
- Department of Cybernetics and Biomedical Engineering, Technical University 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
- Dept. of Computer Science and Engineering, Faculty of Applied Sciences, University of West Bohemia, Plzeň
- 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
- Hungarian Academy of Sciences, Computer and Automation Research Institute, Hungary
- Regional Association of the Hungarian Academy of Sciences, Miskolc, Hungary

6.2.1 Visits of Staff Members to Foreign Institutions

- Butka, P., 18.1.-13.2.2015
- Paralič J., Praha, Czech Republic, 20.-21.1.2015

- Jadlovský J., Čabala, J., Oravec, M., Geneva, Switzerland, 2.-10.2.2015
- Sinčák, P., Miskolc, Hungary, 11.-12.2.2015
- Oravec, M., Geneva, Switzerland, 1.-13.3.2015
- Sinčák, P., Virčíková, M., Ondo, J., Wien, Austria, 10.-14.3.2015
- Sinčák, P., Magyar, G., Miskolc, Hungary, 9.-9.3.2015
- Vaščák, J., Hradec Králové, Czech Republic, 4.-7.5.2015
- Paralič, J., Havrilová, C., Plzeň, Czech Republic, 5.-7.5.2015
- Sinčák, P., Budapest, Hungary, 11.-13.5.2015
- Hvizdoš, J., Miškuf, M., Lojka, T., Zagreb, Croatia, 7.-11.5.2015
- Liguš, J., Ligušová, J., Krakow, Poland, 15.-17.5.2015
- Krokavec, D., Liščinský, P., Miskolc, Hungary, 27.-29.5.2015
- Butka P., Timisoara, Romania, 20.-24.5.2015
- Ocelíková, E., Prague, Czech Republic, 1.-30.6.2015
- Krokavec, D., Filasová, A., Torremolinos, Spain, 14.-20.6.2015
- Krokavec, D., Filasová, A., Saint-Petersburg, Russia, 21.-27.6.2015
- Lukáčová, A., Valencia, Spain, 2.-5.9.2015
- Lukáčová, A., MUCHOVÁ, M., Msida, Malta, 18.-25.7.2015
- Babič, F., Valencia, Spain, 1.-5.9.2015
- Sinčák, P., Virčíková, M., London, Great Britain, 21.-24.6.2015
- Cádrik, T., Brno, Czech Republic, 21.-25.6.2015
- Butka, P., Magdeburg, Germany, 28.6.-10.7.2015
- Ondo, J., Pisa, Italy, 21.-27.7.2015
- Jadlovská, S., Miskolc, Hungary, 3.-8.7.2015
- Virčíková, M., Pisa, Italy, 22.-27.7.2015
- Babič, F., Gašpar, V., Plzeň, Czech Republic, 7.-11.9.2015
- Sinčák, P., Mach, M., London, Pisa, Great Britain, Italy, 18.-27.7.2015
- Bednár, P., Cádrik, T., London, Great Britain, 18.-22.7.2015
- Miškuf, M., Socialbakers, Prague, Czech Republic, 1.-31.8.2015
- Kopčík, M. Oravec, M., Geneva, Switzerland, 27.-11.8.2015
- Lojka, T., Miškuf, M., Tokyo, Japan, 4.-10.9.2015
- Krokavec, D., Filasová, A., Paris, France, 30.8.-4.9.2015
- Sarnovský, M., Karlsruhe, Germany, 7.-11.9.2015
- Jadlovský, J., Jadlovská, A., Jadlovská, S., Plzeň, Czech Republic, 7.-9.9.2015
- Jadlovský, J., Jadlovská, A., Jadlovská, S., Geneve, Switzerland, 4.-11.8.2015
- Miškuf, M., Prague, Czech Republic, 2.-1.9.2015
- Sarnovský, M., Karpacz, Poland, 19.-23.9.2015
- Sarnovský, M., Daejeon, South Korea, 3.-9.10.2015
- Butka, P., Coimbra, Portugal, 7.-10.9.2015
- Krokavec, D., Ustka, Poland, 6.-10.9.2015
- Sinčák, P., Virčíková, M., Ondo, J., Plzeň, Czech Republic, 7.-9.9.2015
- Michalik, P., Subotica, Serbia, 16.-19.9.2015
- Machová, K., Madrid, Spain, 20.-24.9.2015
- Krokavec, D., Sydney, Australia, 18.-25.9.2015
- Cádrik, T., Takáč, P., Pontadera, Italy, 28.-30.10.2015
- Tutoky, G., Plzeň, Czech Republic, 18.-25.9.2015
- Paralič, J., Machová, K., Tutoky, G., Prague, Czech Republic, 30.9.-2.10.2015
- Babič, F., Bednár, P., Butka, P., Havrilová, C., Mikula, M., Prague, Czech Republic, 1.-2.10. 2015
- Sinčák, P., Budapest, Hungary, 6.-6.10.2015

- Virčíková, M., London, Great Britain, 14.-15.10.2015
- Virčíková, M., Magyar, G., Almere, Netherlands, 21.-24.10.2015
- Sinčák, P., Pontadera, Italy, 21.-25.10.2015
- Jadlovská, S., Prague, Czech Republic, 3.-4.11.2015
- Virčíková, M., Prague, Czech Republic, 26.-29.11.2015
- Krokavec, D., Plzeň, Czech Republic, 18.-21.11.2015
- Hvizdoš, J., Lojka, T., Mocnej, J., Pontadera, Italy, 23.11.-1.12.2015
- Ondo, J., Takáč, P., Bucheon, South Korea, 7.-17.12.2015
- Puheim, M., Budapest, Hungary, 19.-21.11.2015
- Vaščák, J., Prague, Czech Republic, 11.-13.12.2015
- Sinčák, P., Osaka, Bucheon, Japan, South Korea, 3.-20.12.2015

6.3 Membership in International Organizations and Societies

- Jakša, R.: IEEE, Computational Intelligence Society
- Krokavec, D.: Member of the International Federation of Automatic Control IFAC Technical Committee TC 1.4 Stochastic Systems
- IEEE Student Branch – Lojka, Michalik, Štofa, Mihaľ, Miškuf, Hvizdoš
- Liguš, J., Ligušová, J.: EAEEIE – European Association for Education in Electrical and Information Engineering
- Liguš, J.: IEEE Automation and Robotics Society
- Ligušová, J.: IEEE System, Man, Cybernetics Society
- 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, IEEE Communication Society, IEEE Computer 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
- Madarász, L.: Slovak Society for Cybernetics and Informatics
- 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

6.5 International Networks and Exchange Programs

- SALEIE, Strategic Alignment of Electrical and Information Engineering in European Higher Education Institutions, Reference number: 527877-LLP-1-2012-1-UK-ERASMUS-ENW. Contact persons: Ján Liguš, Iveta Zolotová, Jana Ligušová.
- OI-Net, European Academic Network for Open Innovation, Reference number: 542203-LLP-1-2013-1-FI-ERASMUS-ENW- Iveta Zolotová, Peter Michalik
- Erasmus+ programme Inter-institutional agreement 2014-2021 between TU of Košice and TECHNOLOGIKO EKPAIDEFTIKO IDRYMA-PIREA, T.E.I. Pirea, Greece, Contact person: Iveta Zolotová
- 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	71	95	7

8 OTHER ACTIVITIES

- SAMI 2015 (IEEE 13th International Symposium on Applied Machine Intelligence and Informatics) was held on January 22-24, 2015 in Herl'any,

Slovakia: http://conf.uni-obuda.hu/sami2015/

- Meeting of COST Action IC1302 Keystone (Spring WG Meeting 2015) was held on May 11-12, 2015 in Košice
- WIKT 2015 (10th Workshop on Intelligent and Knowledge oriented Technologies 2015) was held on November 12-13, 2015 in Košice, Slovakia: http://web.tuke.sk/fei-cit/wikt2015/

9 PUBLICATIONS

9.1. Books

1. ADAMČÍK, F. - KURDEL, P. - LAZAR, T. - MADARÁSZ, L.: Science experiment and doctoral studies (in Slovak). 1st edition, Technical University Košice, 2015. 287 p. ISBN 978-80-553-2039-7.
2. ADAMČÍK, F. - BRÉDA, R. - ANDOGA, R. - KABÁT, J.: Avionic systems 1: On-board electronic and electrical systems of aircraft (in Slovak). 1st edition, Košice, Technical University Košice, 2015. 176 p. - ISBN 978-80-553-2024-3.
3. BABIČ, F. - SARNOVSKÝ, M.: Information systems analysis and design (in Slovak)**.** 1st edition, Technical University Košice, 2015. 126 p. ISBN 978-80-553-1992-6.
4. BUNDZEL, M.: Biocybernetics and Evolutionary Robotics. 1st edition, Technical University Košice, 2015. 54 p. - ISBN 978-80-553-2186-8.
5. HLADKÝ, V.: Prvky riadiacich systémov. 1st edition, Košice, Technical University Košice, 2015. 97 p. - ISBN 978-80-553-2051-9.
6. JADLOVSKÁ, A. - JADLOVSKÁ, S.: Simulation systems in cybernetics (in Slovak). 1st edition, Košice, Technical University Košice, 2015. - 240 p. [CD-ROM]. - ISBN 978-80-553-2011-3.
7. JADLOVSKÝ, J. - PAPCUN, P.: Počítačové systémy v riadení. 1st edition, Technical University Košice, 2015. - 415 p. - ISBN 978-80-553-2102-8
8. LAZAR, T. - MADARÁSZ, L. - GAŠPAR, V. NYULÁSZI, L.: Reciprocity of theoretical-practical problems of forecasting the reliability of small jet engine (in Slovak). 1st edition, Košice: Elfa 2015. 275 p. ISBN 978-80-8086-236-7
9. LIGUŠOVÁ, J. - LIGUŠ, J.: Intelligent Control Networks. 1st edition, Košice: TU 2015. 92 p. ISBN 978-80-553-2009-0.
10. MACHOVÁ, K.: Semantic and social web (in Slovak). 1st edition, Technical University Košice, 2015. 141 p. ISBN 978-80-553-1974-2.
11. PARALIČ, J.: Knowledge management. 1st edition, Košice, Technical University Košice, 2015. 92 p. - ISBN 978-80-553-2100-4.
12. SARNOVSKÝ, J. - LIGUŠ, J. - LIGUŠOVÁ, J.: Cybernetics and Management. 1st edition, Košice: TU 2015. 120 p. [CD-ROM]. ISBN 978-80-553-2012-0.
13. SARNOVSKÝ, M.: IT management. 1st edition, Košice, Technical University Košice, 2015. - 103 s. - ISBN 978-80-553-2045-8.
14. VAŠČÁK, J.: Fuzzy Systems. 1st edition, Košice: TU 2015. 115 p. ISBN 978-80-553-2093-9.
15. VAŠČÁK, J. - JAKŠA, R.: Umelá inteligencia. 1st edition, Technical University Košice, 2015. 126 p. - ISBN 978-80-553-2134-9.
16. ZOLOTOVÁ, I. - ŠTOFA, J. - MICHALIK, P.: Information systems of business processes (in Slovak). 1st edition, Košice, Technical University Košice, 2015. 144 p. - ISBN 978-80-553-1960-5.

9.2 Journals

1. BABIČ, F. - LUKÁČOVÁ, A. - PARALIČ, J.: Descriptive and predictive analyses of data representing aviation accidents. In: Advances in Intelligent Systems and Computing. Vol. 314 (2015), p. 181-190. ISSN 2194-5357
2. BUTKA, P. - PÓCS, J. - PÓCSOVÁ, J.: Distributed computation of generalized one-sided concept lattices on sparse data tables. In: Computing and Informatics. Vol. 34, no. 1 (2015), p. 77-98. ISSN 1335-9150
3. BUTKA, P.: Knowledge-based representation for modeling of selected software development methodology. In: International Journal of Research in Information Technology. Vol. 3, no. 7 (2015), p. 123-134. ISSN 2001-5569
4. BUTKA, P. - PÓCS, J. - PÓCSOVÁ, J:: Reduction of concepts from generalized one-sided concept lattice based on subsets quality measure. In: New Research in Multimedia and Internet Systems. Vol. 314 (2015), p. 101-111. ISSN 2194-5357
5. CÁDRIK, T. - ONDO, J. - MACH, M. - SINČÁK, P.: The basic architecture of cloud environments to support multi robotic systems (1) - in Slovak. In: ATP Journal. Vol. 22, no. 1 (2015), p. 38-39. ISSN 1335-2237
6. CÁDRIK, T. - ONDO, J. - MACH, M., SINČÁK, P.: The basic architecture of cloud environments to support multi robotic systems (2) - in Slovak. In: ATP Journal. Vol. 22, no. 2 (2015), p. 41-43. ISSN 1335-2237
7. CÁDRIK, T. - ONDO, J. - MACH, M., - SINČÁK, P:: The basic architecture of cloud environments to support multi robotic systems (3) - in Slovak. In: ATP Journal. Vol. 22, no. 3 (2015), p. 48-49. ISSN 1335-2237
8. CÁDRIK, T. - MACH, M.: Usage of ZCS Evolutionary Classifier System as a Rule Maker for Cleaning Robot Task. In: Advances in Intelligent Systems and Computing. Vol. 316 (2015), p. 113-119. ISSN 2194-5357
9. Fiala, D. - Tutoky, G. - Koncz, P., Paralič, J.: Ageing of edges in collaboration networks and its effect on author rankings. Acta Polytechnica Hungarica. Vol. 12, no. 6 (2015), p. 149-160, ISSN: 1785-8860
10. FILASOVÁ, A. - KROKAVEC, D. - SERBÁK, V.: Application of descriptor approaches in design of PD observer-based actuator fault estimation. In: Archives of Control Sciences. Vol. 25, no. 1 (2015), p. 51-64. ISSN 1230-2384
11. FILASOVÁ, A. - HLADKÝ, V. - KROKAVEC, D.: Robust TS fuzzy fault detection filters design. In: Advances in Intelligent Systems and Computing. Vol. 316 (2015), p. 197-206. ISSN 2194-5357
12. JADLOVSKÁ, S. - SARNOVSKÝ, J. - VOJTEK, J. - VOŠČEK, D.: Advanced Generalized Modelling of Classical Inverted Pendulum Systems. In: Advances in Intelligent Systems and Computing. Switzerland: Springer, 2015 Vol. 316, no. 1(2015), p. 255-264. ISSN 2194-5357
13. JADLOVSKÝ, J. - KOPČÍK, M.: Basic Motion Control of Differential-Wheeled Mobile Robot ALFRED. In: Advances in Intelligent Systems and Computing. Switzerland: Springer, 2014 Vol. 316 (2015), p. 73-80. ISSN 2194-5357
14. KURDEL, P. - ČEŠKOVIČ, M. - NYULÁSZI, L., ADAMČÍK, F.: Selected method of diagnosing aviation ergatic systems. In: Nase More. Vol. 62, no. 3 (2015), p. 233-236. ISSN 0469-6255
15. LOJKA, T. - BUNDZEL, M. - ZOLOTOVÁ, I.: Industrial Gateway for Data Acquisition and Remote Control. In: Acta Electrotechnica et Informatica. Vol. 15, no. 2 (2015), p. 43-48. ISSN 1335-8243

16. LOJKA, T. - ZOLOTA, M. - MIHAĽ, R. - ZOLOTOVÁ, I.: Communication Engine in Human-Machine Alarm Interface System. In: Advances in Intelligent Systems and Computing. Switzerland: Springer, 2015 Vol. 316 (2015), p. 129-136. ISSN 2194-5357
17. LORENČÍK, D. - SINČÁK, P. - TUŠAN, J. - MAREK, M.: Smartphone Robots. In: Advances in Intelligent Systems and Computing. Vol. 316 (2015), p. 137-143. ISSN 2194-5357
18. LUKÁČOVÁ, A. - BABIČ, F. - PARALIČOVÁ, Z. - PARALIČ, J.: How to Increase the Effectiveness of the Hepatitis Diagnostics by Means of Appropriate Machine Learning Methods. Lecture Notes in Computer Science. Switzerland: Springer International Publishing, 2015 Vol. 9267 LNCS (2015), p. 81-94. ISSN 0302-9743
19. MAGYAR, G. - VIRČÍKOVÁ, M.: Socially-Assistive Emotional Robot that Learns from the Wizard During the Interaction for Preventing Low Back Pain in Children. In: Lecture Notes in Computer Science. Vol. 9388 (2015), p. 411-420. ISSN 0302-9743
20. MAGYAR, G. - SINČÁK, P. - KRIZSÁN, Z.: Comparison Study of Robotic Middleware for Robotic Applications. In: Advances in Intelligent Systems and Computing. Vol. 316 (2015), p. 121-128. ISSN 2194-5357
21. MIŠKUF, J. - CSACH, K. - JURÍKOVÁ, A. - HURÁKOVÁ, M. - MIŠKUF, M. - TABACHNIKOVA, E. - PSARUK, I. - LAKTIONOVA, M. - PODOLSKIY, A.: Generation of Nanoscale Stripes at Failure of Amorphous Metals. In: Key Engineering Materials. 2015 Vol. 662 (2015), p. 221-224. ISSN 1662-9795
22. PAPCUN, P. - JADLOVSKÝ, J.: Mathematical Model of Robot Melfa RV-2SDB. In: Advances in Intelligent Systems and Computing. Switzerland: Springer, 2015 Vol. 316 (2015), p. 145-154. ISSN 2194-5357
23. PUHEIM, M. - BUNDZEL, M. - SINČÁK, P. - MADARÁSZ, L.: Application of Tracking-Learning-Detection for Object Tracking in Stereoscopic Images. In: Advances in Intelligent Systems and Computing. Vol. 316 (2015), p. 323-331. ISSN 2194-5357
24. SERBÁK, V. - LIŠČINSKÝ, P.: Adaptive observer based actuator faults estimation. In: Advances in Electrical and Electronic Engineering. Vol. 13, no. 1 (2015), p. 48-53. ISSN 1336-1376
25. SINČÁK, P. - LORENČÍK, D. - VIRČÍKOVÁ, M. - GAMEC, J.: Theoretical Analysis of Recent Changes and Expectations in Intelligent Robotics. In: Advances in Intelligent Systems and Computing. Vol. 316 (2015), p. 13-30. ISBN 978-3-319-10782-0 ISSN 2194-5357
26. TARHANIČOVÁ, M. - MACHOVÁ, K. - SINČÁK, P.: Computers Capable of Distinguishing Emotions in Text. In: Advances in Intelligent Systems and Computing. Switzerland: Springer, 2015 Vol. 316 (2015), p. 61-69. ISBN 978-3-319-10782-0 ISSN 2194-5357
27. VAŠČÁK, J. - MICHNA, R.: Learning of Fuzzy Cognitive Maps by a PSO Algorithm for Movement Adjustment of Robots. In: Advances in Intelligent Systems and Computing. Switzerland: Springer, 2014 Vol. 316 (2015), p. 155-162. ISSN 2194-5357
28. VIRČÍKOVÁ, M. - SINČÁK, P.: Teach Your Robot How You Want It to Express Emotions: On the Personalized Affective Human-Humanoid Interaction. In: Advances in Intelligent Systems and Computing. Switzerland: Springer International Publishing, 2014 Vol. 316 (2015), p. 81-92. ISSN 2194-5357

29. ZOLOTOVÁ I. - BUNDZEL M. – LOJKA, T.: Industry IoT gateway for cloud connectivity. In: Advances in Intelligent Systems and Computing. Springer, 2015 Vol. 460 (2015), p. 59-66. ISSN 1868-4238
30. ZOLOTOVÁ, I. - LOJKA, T. - SROKA, J. - LABAJ, M.: SOA-based remote management for industrial router, VPN server and mobile clients - in Slovak. In: ATP Journal. Vol. 22, no. 6 (2015), p. 36-38. ISSN 1335-2237

9.3 Other publications

Publication Type	Confereces		Other
	Foreign	Home	
Number	31	48	55

Mr. Ladislav Madarász Dr. h. c. mult. Prof. Ing., PhD.

was born on June 6. 1949 in Gemer–region village named Kunová Teplica, district of Rožňava. Upon finishing his elementary schooling he continued his studies at the Mechanical Engineering secondary school in Kosice, the city with which he permanently bonded his entire life. Eventually, after successfully passing graduation examinations, he decided to study, between 1968-73, with the then College of Technology (Technical University in Kosice today) where he had been awarded the Diploma in Electrical Engineering in the then freshly introduced branch of Technical Cybernetics; being one of the first graduates of the discipline that has become his life's destiny and mission.

On starting at the Department of Technical Cybernetics as a young assistant he came into close contact with Prof. Jindřich Spal, founder of the Department of Cybernetics and the very branch of cybernetics in Kosice, and collaborated with him for nearly 20 years with great respect as to his teacher in whose footsteps he continued on his own after Mr. Spal died. His principal field of both research and lecturing was the automatic control theory with emphases on decision processes and on situation/state control, and was instilling the basics of them on hundreds of in the future successful technicians. He was “friends” even with issues of some elements of artificial intelligence, and his scientific legacy can be developed further by tens of successful PhD graduates.

Prof. Madarász was extremely active both in scientific and social aspects of the university and scientific life. Moreover, he was also highly enthusiastic in educational and scientific publications with almost three hundred original scientific publications, including 13 monographs and dozens of textbooks. Hence, no wonder that he swiftly made it up the career ladder and successfully defended Ph.D. thesis, whereupon he was already in 1984 appointed the associate professor title and later, in 1994, earned his “university professorship”; yet, he did not slack off on his activities at all. One term of office he served as Vice-Dean of the Faculty of Electrical Engineering and Computer Science, was advisor to the rector of the Technical University in Kosice, a member of scientific boards of several colleges and universities, visiting professor at the University of Miskolc, Honorary Professor at Bánki Donát Polytechnic and after the merger at the Óbuda University in Budapest. In addition to the already mentioned activities, not least it appears as unique the "Laboratory of Intelligent Control Systems for Aircraft Engines" as one of not many joint inter-faculty workplaces, in this case, the Faculty of Electrical Engineering and Computer Science and the Faculty of Aeronautics, at birth of which there was exactly Prof. Madarász.

Prof. Madarász was establishing partnerships between institutions, co-organized conferences and symposia, among which the most important are the symposium on applied machine intelligence and informatics SAMI, proceedings of which are included in the IEEE publications database. Furthermore, he was on editorial boards of such journals as Bulletins for Applied Mathematics or the AT&P Journal. For his contributions to these activities he was awarded numerous honours, such as the commemorative medal of the Technical University in Budapest (1997), gold medals awarded by mechanical engineering faculties of the University of Miskolc (1999) and by the Technical University in Kosice as well as by his alma mater itself in 2002,

followed by the Gabor Denes Prize granted under the auspices of the Hungarian Academy of Sciences in 2013, and finally in 2014 he was awarded the knight's cross handed over by the President of Hungary for creating, developing and maintaining cooperation between the university educational institutions in Slovakia and Hungary. However, the highest academic honour was undoubtedly the awarding of the title of Doctor Honoris Causa by the University of Miskolc (2009) and Budapest (2014).
Prof. Madarász was, among others, foreign honorary member of the Plenum of the Hungarian Academy of Sciences, member of the global Association of Hungarian professors, member of the Slovak Society for Cybernetics and Informatics and a member of John von Neumann Computer Society. With him leaving us is not only erudite scholar, inspiring teacher, but also a colleague who for decades shaped our knowledge and attitudes.

Honour to his memory! May he rest in peace !.

DEPARTMENT OF MATHEMATICS AND THEORETICAL INFORMATICS

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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. Blanka Baculíková, PhD.
doc. RNDr. Helena Myšková, PhD.
doc. RNDr. Viktor Pirč, CSc.

Assistant Professors: RNDr. Štefan Berežný, PhD.
RNDr. Ján Buša, CSc.
Mgr. Ján Buša Jr., PhD.
RNDr. Ivan Daňo, PhD.
RNDr. Emília Draženská, PhD.
RNDr. Anna Grinčová, PhD.
RNDr. Daniela Kravecová, PhD.
RNDr. Monika Molnárová, PhD.
PhDr. Eva Ostertagová, PhD.
RNDr. Anna Pavlisková, PhD.
Mgr. Jana Petrillová, PhD.
Mgr. Ján Pribiš, PhD.
RNDr. Štefan Schrötter, CSc.
RNDr. Michal Staš, PhD.

Technical Staff: Lenka Ondrejková

The Department consists of two parts:

- Mathematics Section
- Section of Theoretical Informatics

3 LABORATORIES

- Laboratory of Mathematical and Computing Modelling
- LabIT4KT-1: Laboratory of Computer Modelling (prototype unit of the project IT4KT)
- LabIT4KT-2: Laboratory of Numerical Mathematics (prototype unit of the project IT4KT)

4 TEACHING

4.1 Undergraduate Study (Bc.)

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Mathematics I	1st	3/2/2	Džurina, Baculíková, Kravecová, Grinčová
Mathematics I	1st	4/3	Molnárová
Mathematics I	1st	2/0	Buša
Mathematics I (English)	1st	3/3	Berežný
Discrete Mathematics	2nd	3/3	Klešč, Myšková

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Mathematics II	2nd	3/3	Klešč, Pribiš
Mathematics II	2rd	2/2	Grinčová
Mathematics II (English)	2rd	3/3	Plavka
Mathematics II	2nd	2/0	Buša
Numerical Methods, Probability and Statictics	3rd	3/2	Pribiš, Myšková, Klešč
Numerical Methods, Probability and Statictics	3rd	2/0	Schrötter
Theory of Coding	3rd	2/2	Plavka
Applications of Differential Equations	4nd	2/2	Baculíková
Algorithms and Complexity	4th	2/2	Plavka
Numerical Methods, Probability and Statictics	5rd	3/3	Buša
Mathematical and Computing Modelling	5th	2/2/1	Džurina
Typographical System TEX	5th	1/2/1	Berežný
Operation Analysis	6th	2/2	Kravecová
Financial Mathematics	6th	2/2	Grinčová

4.2 Graduate Study (Ing.)

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Differentional Equations and Variational Calculus	7th	2/2	Džurina
Applied Mathematics	7th	3/2	Klešč
Optimalization Methods	7th	2/2	Buša
Physical Processes Modelling	7th	2/2	Buša
Applied Statistics	7th	2/2	Ostertagová
Applied Mathematics	8th	2/2	Džurina
Applied Statistics	8th	2/2	Ostertagová
Applied Statistics (English)	8th	2/2	Berežný
Discrete Dynamic Systems	8th	2/2	Molnárová
Discrete Dynamic Systems (English)	8th	2/2	Molnárová
Linear and Quadratic Programing	8th	2/2	Staš
Graph Algorithms and Discrete Optimization	9th	2/2	Schrötter
Queueing Theory	9th	2/2	Berežný
Mathematical Methods for Neural Networks and Time Series	9th	2/2	Staš
Software Tools for Process Modelling	10th	2/2	Buša

5 RESEARCH PROJECTS

- *Invariants of non-planar graphs - crossing numbers.* VEGA Slovak Grant Agency No. 1/0389/15, duration 2015 – 2017, co-ordinator: Marián Klešč.
- *Knowledge transfer into education via subjects Discrete Dynamic Systems and Graph Algorithms and Discrete Optimization*. KEGA Slovak Grant Agency No. 032TUKE-4/2013, duration 2013 – 2015, co-ordinator: Ján Plavka.
- *Scaling in Stochastic Dynamics: Influence of Random Fluctuations onDiffusion,*

Kinetic Processes, and Phase Transitions. VEGA Slovak Grant Agency No. 1/0222/13, duration 2013 – 2016, co-ordinator: Ján Buša.
- *Function spaces, bornologies, hyperspaces and topological structures*. APVV-0269-11, duration 2012 – 2015, co-ordinator: Michal Staš.

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

- Prof. Sergei Sergeev, University of Birmingham, School of Mathematics, Birmingham, UK
- Prof. Marie Demlová, Czech Technical University in Prague, Faculty of Electrical Engineering, Department of Mathematics, Czech Republic
- Prof. Martin Gavalec, University of Hradec Kralove, Czech Republic
- Dr. Edik Hayryan, Joint Institute for Nuclear Research, Dubna, Russia
- Dr. Alexander Ayriyan, Joint Institute for Nuclear Research, Dubna, Russia
- Dr. Shura Hayryan, Institute of Physics, Academia Sinica, Taipei, Taiwan

6.2 International Co-operation

- Technical University in Graz, Austria
- Charles University in Prague, Czech Republic
- Czech Technical University in Prague, Czech Republic
- University of Birmingham, United Kingdom
- UHK in Hradec Králové, Czech Republic
- Texas Univeresity, Kingsville, USA
- Veszprem University, Hungary
- Technical university of Cluj-Napoca, North University at Baia Mare, Romania
- JINR Dubna, Russia
- University of Miskolc, Hungaria
- Institute of Physics, Academia Sinica, Taiwan

6.2.1 Visit of Staff Members to Foregn Institutions

- Berežný, Š.: Czech Technical University in Prague, Faculty of Electrical Engineering, Department of Mathematics, Czech Republic
- Berežný, Š.: Institute of Physics, Academia Sinica, Taipei, Taiwan
- Buša Jr., J.: Laboratory of Statistical and Computational Physics, Institute of Physics of Academia Sinica, Taipei, Taiwan
- Buša, J.: Laboratory of Statistical and Computational Physics, Institute of

Physics of Academia Sinica, Taipei, Taiwan
- Buša, J.: Laboratory for Information Technology, Joint Institute for Nuclear Research, Dubna, Moscow region, Russian Federation
- Pribiš, J.: Laboratory for Information Technology, Joint Institute for Nuclear Research, Dubna, Moscow region, Russian Federation

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
- Plavka, J.: International Linear Algebra 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
- Buša Jr., J.: Slovak Mathematical Society
- 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 III program CIII-HU-0028-08-1415 – Active Methods in Teaching and Learning Mathematics and Informatics

7 THESES

Thesis type	Bachelor	Master	Doctoral
Number	3	5	0

8 OTHER ACTIVITIES

8.1 Workshops

- Buša, J.: 16-th Conference of Košice Mathematicians, 25. – 28. March 2015, Herľany, Slovakia; co-organiser
- Buša, J.: The International Conference Mathematical Modeling and

Computational Physics, July, 13 –17, Stará Lesná, High Tatra Mountains, Slovakia, organized by the Laboratory of Information Technologies, Joint Institute for Nuclear Research, Dubna, Russia, the Institute of Experimental Physics, Slovak Academy of Sciences, Košice, the Technical University of Košice, the Pavol Jozef Šafárik University, Košice, the Slovak Physical Society, Košice, Slovakia, IFIN-HH, Bucharest, Romania; co-organiser
http://web.tuke.sk/mmcp/mmcp2015/index.php

8.2 Activity of CEEPUS

- Berežný, Š.: Mini CEEPUS conference dedicated to celebrate 15 years of activity of our network: Active Methods in Teaching and Learning Mathematics and Informatics. Petru Maior University of Targu Mures, Department of Mathematics and Informatics, Romania
- Kravecová, D.: Ceepus meeting in Miskolc as deputy coordinator at DMTI. University of Miskolc, Department of Analysis of the Institute of Mathematics, Hungary

9 PUBLICATIONS

9.1. Books

1. BEREŽNÝ, Š: – MYŠKOVÁ, H.: Applied Statistics. 1. ed., TU Košice, 2015, 150 pp., ISBN 978-80-553-2135-6.
2. BUŠA, J. – SCHRÖTTER, Š.: Stredoškolská matematika pre študentov FEI TU v Košiciach. 2. ed., TU Košice, 2015, 179 pp., ISBN 978-80-553-2193-6.
3. DAŇO, I.: Mathematical Methods for Neural Networks and Time Series. 1. ed., TU Košice, 2015, 102 pp., ISBN 978-80-553-1971-1.
4. DAŇO, I.: Matematické metódy pre neurónové siete a časové rady v príkladoch. 1. ed., TU Košice, 2015, 115 pp., ISBN 978-80-553-2101-1.
5. GRINČOVÁ, A. – PIRČ, V. – GALAJDOVÁ, A. – JENČÍK, M. – ŠIMŠÍK, D.: MATEMATIKA 1 pre študentov s poruchami zraku. 1. ed., TU Košice, 2015, 110 pp., ISBN 978-80-553-2170-7.
6. KLEŠČ, M. – PLAVKA, J.: Matematika 2 – diskrétna matematika a formálna logika. 1. ed., TU Košice, 2015, 80 pp., ISBN 978-80-553-1966-7.
7. KLEŠČ, M. – SCHRÖTTER, Š.: Diferenčné rovnice, grafové algoritmy a kombinatorická optomalizácia. 1. ed., TU Košice, 2015, 85 pp., ISBN 978-80-553-2223-0.
8. MOLNÁROVÁ, M.: Diskrétne dynamické systémy. 1. ed., TU Košice, 2015, 158 pp., ISBN 978-80-553-2021-2.
9. MOLNÁROVÁ, M.: Discrete dynamic systems. 1. ed., TU Košice, 2015, 110 pp., ISBN 978-80-553-1742-7.
10. OSTERTAGOVÁ, E.: Aplikovaná štatistika v počítačovom prostredí MATLABu. 2. ed., TU Košice, 2015, 175 pp., ISBN 978-80-553-2089-2.
11. PLAVKA, J.: Algorithms for robust fuzzy discrete dynamic systems with inexact data. 1. ed., TU Košice, 2015, 77 pp., ISBN 978-80-553-2190-5.

9.2. Journals

1. ANDREJIOVÁ, M. – GRINČOVÁ, A. – MARASOVÁ, D. – GRENDEL, P.: Multicriterial assessment of the raw material transport. Acta Montanistica Slovaca. Vol. 20, no. 1 (2015), p. 26-32. ISSN 1335-1788.
2. BACULÍKOVÁ, B. – DŽURINA, J. – JADLOVSKÁ, I.: Properties of the third order trinomial functional differential equations. Electronic Journal of Qualitative Theory of Differential Equations. No. 20 (2015), p. 1-13. ISSN 1417-3875.
3. BACULÍKOVÁ, B. – DŽURINA, J.: Oscillation of the third order Euler differential equation with delay. Mathematica Bohemica. Vol. 139, no. 4 (2015), p. 649-655. ISSN 0862-7959.
4. BACULÍKOVÁ, B. – DŽURINA, J.: Comparison theorems for higher-order neutral delay differential equations. Journal of Applied Mathematics and Computing. Vol. 49, no. 1-2 (2015), p. 107-118. ISSN 1598-5865.
5. BEREŽNÝ, Š.: What Software to use in the Teaching of the Mathematical Subjects? Acta Didactica Napocensia. Vol. 8, no. 1 (2015), p. 75-85. ISSN 2065-1430.
6. Buša Jr., J. – BUŠA, J. – HAYRYAN, Sh. – HU Chin-Kun – WU Ming-Chya: CAVE-CL: An OpenCL version of the package for detection and quantitative analysis of internal cavities in a system of overlapping balls: Application to proteins. Computer Physics Communications. Vol. 190 (2015), p. 224-227. ISSN 0010-4655.
7. GRINČOVÁ, A. – ANDREJIOVÁ, M. – MARASOVÁ, D.: Measuring and comparative analysis of the interaction between the dynamic impact loading of the conveyor belt and the supporting system. Measurement. Vol. 59 (2015), p. 184-191. ISSN 0263-2241.
8. DŽURINA, J. – BACULÍKOVÁ, B. – JADLOVSKÁ, I.: Oscillation of solutions to fourth-order trinomial delay differential equations. Electronic Journal of Differential Equations. No. 70 (2015), p. 1-10. ISSN 1072-6691.
9. DŽURINA, J. – BACULÍKOVÁ, B. – JADLOVSKÁ, I.: Kneser solutions of fourth-order trinomial delay differential equations. Applied Mathematics Letters. Vol. 49 (2015), p. 67-72. ISSN 0893-9659.
10. DŽURINA, J. – BACULÍKOVÁ, B.: Oscillation of the even-order delay linear differential equation. Carpathian Journal of Mathematics. Vol. 31, no. 1 (2015), p. 69-76. ISSN 1843-4401.
11. KOSTENKO, B. – PRIBIŠ, J.: On dibaryon production in D + D --> X + D reaction. Physics of Particles and Nuclei Letters. Vol. 12, no. 3 (2015), p. 406-408. ISSN 1547-4771.
12. MOLNÁR, V. – FEDORKO, G. – ANDREJIOVÁ, M. – GRINČOVÁ, A. – TOMAŠKOVÁ, M.: Analysis of influence of conveyor belt overhang and cranking on pipe conveyor operational characteristics. Measurement. Vol. 63 (2015), p. 168-175. ISSN 0263-2241.
13. MOLNÁR, V. – FEDORKO, G. – ANDREJIOVÁ, M. – GRINČOVÁ, A. – KOPAS, M.: Monitoring of dependences and ratios of normal contact forces on hexagonal idler housings of the pipe conveyor. Measurement. Vol. 64 (2015), p. 168-176. ISSN 0263-2241.
14. MYŠKOVÁ, H. – PLAVKA, J.: On the weak robustness of interval fuzzy matrices. Linear Algebra and its Applications. Vol. 474 (2015), p. 243-259. ISSN 0024-3795.

15. OSTERTAGOVÁ, E. – OSTERTAG, O.: Regression Analysis and Seasonal Adjustment of Time Series. Journal of Automation and Control. Vol. 3, no. 3 (2015), p. 118-121. ISSN 2372-3041.
16. OSTERTAGOVÁ, E. – OSTERTAG, O. – SIVÁK, P.: Application of the Simple Linear Regression Model in the Experiment. Applied Mechanics and Materials. Vol. 816 (2015), p. 496-506. ISSN 1662-7482.
17. OSTERTAG, O. – OSTERTAGOVÁ, E.: Shape Memory Alloy Actuator (SMA). Applied Mechanics and Materials. Vol. 816 (2015), p. 9-15. ISSN 1662-7482.
18. OSTERTAG, O. – OSTERTAGOVÁ, E. – NOVOTNÝ, L.: Analytical and Numerical Solution of Large Actuator Deformation. Applied Mechanics and Materials. Vol. 816 (2015), p. 96-102. ISSN 1662-7482.
19. OSTERTAGOVÁ, E.: Metódy viacnásobného porovnávania pre analýzu rozptylu. Transfer inovácií. No. 31 (2015), p. 31-33. ISSN 1337-7094.
20. OSTERTAGOVÁ, E.: Regresná metóda modelovania sezónnej zložky časových radov. Transfer inovácií. No. 31 (2015), p. 34-36. ISSN 1337-7094.
21. OSTERTAG, O. – NOVOTNÝ, L. – OSTERTAGOVÁ, E.: Analytické a numerické riešenie veľkých deformácií akčného člena. Transfer inovácií. No. 32 (2015), p. 132-135. ISSN 1337-7094.

9.3. Other publications

Publication Type	Confereces		Other
	Foreign	Home	
Number	4	3	3

DEPARTMENT OF COMPUTERS AND INFORMATICS

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doc. Ing. Jaroslav Porubän, PhD.
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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. 593 students in bachelor and 252 students in master programs. Number of doctoral students studying towards PhD degree is 49.

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:
prof. Ing. Štefan Hudák, DrSc.
prof. Ing. Ján Kollár, CSc.
prof. RNDr. Valerie Novitzká, PhD.
prof. Ing. Liberios Vokorokos, PhD.

Associate Professors:
doc. Ing. Ján Bača, CSc.
doc. Ing. Ján Genči, PhD.
doc. Ing. Zdeněk Havlice, CSc.
doc. Ing. František Jakab, PhD.
doc. Ing. Jaroslav Porubän, PhD.
doc. Ing. Branislav Sobota, PhD.
doc. Ing. Milan Šujanský, CSc.
doc. Ing. Martin Tomášek, PhD.

Assistant Professors:

Ing. Norbert Ádám, PhD.
Ing. Anton Baláž, PhD.
Ing. Michaela Bačíková, PhD.
Ing. Miroslav Biňas, PhD.
Ing. Peter Drotár, PhD.
Ing. Peter Feciľak, PhD.
Ing. Katarína Feciľaková, PhD.
Ing. Juraj Gazda, PhD.
Ing. František Hrozek, PhD.
Ing. Sergej Chodarev, PhD.
Ing. Eva Chovancová, PhD.
Ing. Štefan Korečko, PhD.
Ing. Branislav Madoš, PhD.
Ing. Daniel Mihályi, PhD.
Ing. Miroslav Michalko, PhD.
Ing. Milan Nosáľ, PhD.
Ing. Marek Paralič, PhD.
Ing. Emília Pietriková, PhD.
Ing. William Steingartner, PhD.
Ing. Csaba Szabó, PhD.
Ing. Slavomír Šimoňák, PhD.
Ing. Henrieta Telepovská, PhD.

Senior Scientists:

Ing. Ivan Klimek, PhD.
Ing. Dominik Lakatoš, PhD.
Ing. Marek Novák, PhD.

Technical Staff:

Bc. Ivana Macková
Ing. Mária Halászová
Jozef Šefčík
Helena Švarcová

Ph.D. Students:
Internal form:

Ing. Martina Benčková
Ing. Dávid Cymbalák
Ing. Marek Čopjak
Ing. Emília Demeterová
Ing. Pavol Drienik
Ing. Zuzana Dudláková
Ing. Eldojali Mohamed Ali M.
Ing. Michal Ennert
Ing. Lukáš Galko
Ing. Martin Grekšo
Ing. Ivan Halupka
Ing. Ján Hurtuk
Ing. Peter Ivančák
Ing. Ladislav Jacho
Ing. Ján Juhár
Ing. Milan Jančár
Ing. Ondrej Kainz
Ing. Michal Kovalčík
Ing. Jakub Livovský
Ing. Jaroslav Lámer
Ing. Pavol Macko
Ing. Juraj Mihaľov
Ing. Tawfik Mudarri
Ing. Milan Nosáľ
Ing. Peter Pastornický
Ing. Ján Perháč
Ing. Michal Sičák
Ing. Milan Spišiak
Ing. Matúš Sulír
Ing. Veronika Szabóová
Ing. Jana Šťastná
Ing. Matúš Uchnár
Ing. Roman Vápeník
Ing. Martin Varga
Ing. Michal Vrábeľ

External form:

Ing. Abobaker Hasan A.Mustafa
Ing. Marek Čajkovský
Ing. Martin Droppa
Ing. Marek Dufala
Ing. Dušan Janovský
Ing. Matej Kostroš
Ing. Milan Krendželák
Ing. Ľubor Leščišin
Ing. Marcel Mojžiš
Ing. Róbert Peťka
Ing. Ján Polák
Ing. Ján Radušovský
Ing. Kristián Šesták
Ing. Matúš Valo
Ing. Juraj Vízi

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)	Lecturer
Fundamentals of Algorithms and Programming	1st	3/2	Sobota, Korečko, Paralič, Steingartner, Pietriková
Principles of Computer Engineering	2nd	2/2	Vokorokos, Madoš
Programming	2nd	2/2	Biňas, Paralič, Tomášek
Object-Oriented Programming	3rd	2/2	Tomášek
Operating Systems	3rd	3/2	Genči
Data Structures and Algorithms	3rd	2/2	Šimoňák
Computer system architectures	3rd	3/2	Vokorokos, Ádám
Assembler	4th	2/2	Šimoňák
Database Systems	4th	2/2	Telepovská, Szabó
Operating Systems	4th	2/2	Genči
Computer Networks	4th	2/2	Jakab
Programming in .NET Environment	4th	2/2	Porubän
Java Technologies	4th	2/2	Porubän
OS Linux Administration II.	4th	0/2	Biňas
Bachelor Project	5th	0/6	Novitzká
Research Methods	5th	2/2	Pietriková, Tomášek
Software Projects Management	5th	2/2	Szabó
User Interfaces of Software Systems	5th	2/2	Bačíková
Application Development for Smart Devices	5th	2/2	Biňas
Application of the Network Technologies	5th	2/2	Michalko
Bachelor Thesis	6th	0/9	Kollár
Functional Programming	6th	2/2	Kollár
Computer system architectures	6th	3/2	Vokorokos, Ádám
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)	Lecturer
Semantics of Programming Languages	1th	3/2	Novitzká, Steingartner

Subject	Semester	Lectures/ exercises (hours per week)	Lecturer
Current Trends in Informatics 1	1th	2/2	Porubän
Team Project	1th	2/2	Porubän
Digital systems design using VHDL	1th	2/2	Vokorokos, Chovancová
Data Processing Technologies and Systems	1th	2/2	Genči
Software Systems Evolution	3th	2/2	Szabó
Requirements Engineering	1th	2/2	Havlice, Szabó
Routing Algorithms in Computer Networks	1nd	2/2	Feciľak
Modeling and Generation of Software Architectures	2nd	2/2	Kollár
Semestral Project	2nd	0/5	Kollár
Semantics of Programming Languages	2nd	3/2	Novitzká, Steingartner
Digital systems design using VHDL	2nd	1/2	Vokorokos, Chovancová
Logics for Informaticians	2nd	2/2	Novitzká
Virtual Reality Systems	2nd	2/2	Sobota
Technologies of Software Projects-I	2nd	2/2	Havlice
Routing Algorithms in Computer Networks	2nd	2/2	Feciľak
SAP Administration	2nd	2/2	Baláž
Security in Computer Systems	3rd	2/2	Vokorokos, Baláž
Diploma Project	3rd	0/8	Kollár
Parallel Programming	3rd	2/2	Kollár
Type Theory	3th	2/2	Novitzká
Solving Problems of Large Scale Infrastructures	3th	2/2	Feciľak
Modeling and Simulation	3th	2/2	Šujanský, Korečko
Domain Specific Languages Development	3th	2/2	Porubän
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

- Promoting the interconnection of Computer and Software Engineering using the KPIkit, Cultural and Educational Grant Agency KEGA No. 077TUKE-4/2015, duration: 2015-2017, coordinator: Ing. Norbert Ádám, PhD.
- Agent based modeling of the spectrum distribution in the cognitive radio networks, Research Grant Agency VEGA No. 1/0766/14, duration: 2014-2016, coordinator: Ing. Juraj Gazda PhD.
- Dictionary of Multiword Terms, Slovak Research and Development Agency No.

APVV-0342–11, duration: 2012–2015, TUKE coordinator: doc. Ing. Ján Genči, PhD.

- Principles and Methods of Automated Abstraction of Computer Languages and Software Development Based on the Semantic Enrichment Caused by Communication, Research Grant Agency VEGA No. 1/0341/13, duration: 2013-2015, coordinator: prof. Ing. Ján Kollár, CSc.
- Comprehensive Processing of Contemporary Slovak Language, Research Grant Agency VEGA No. 1/0255/12, duration: 2012–2015, TUKE coordinator: doc. Ing. Ján Genči, PhD.
- University Science Park TECHNICOM for Innovation Application Supported by Knowledge Technolgy, Research & development operational programme funded by the ERDF. No. 26220220182, duration 2013-2015, Faculty coordinator: doc. Ing. Frantisek Jakab, PhD.
- Integration of the Basic Theories of Software Engineering into Courses for Informatics Master Study Programmes at Technical Universities – Proposal and Implementation, Cultural and Educational Grant Agency KEGA No. 019TUKE-4/2014, duration: 2013-2015, coordinator: doc. Ing. Jaroslav Porubän, PhD.
- Microlearning Environment for Training of Professionals in the Field of Information Security, Cultural and Educational Grant Agency KEGA No. 008TUKE-4/2013, duration: 2013–2015, coordinator: prof. Ing. Liberios Vokorokos, PhD.
- International Cooperation in Computer Science, CEEPUS No. CII-HU-0019-01-0506 (H81), duration: since 2005, coordinator: Ing. Csaba Szabó, PhD.
- Cisco Networking Academy Program – Regional Academy at DCI FEI TU, Cisco No. 8250, duration: since 1999, coordinator: doc. Ing. František Jakab, PhD.
- Cisco Networking Academy Program – Academy Support Center/Instructor training center/Cisco Academy DCI FEI TU, Cisco No. 8250, duration: since 1999, coordinator: doc. Ing. František Jakab, PhD. and Ing. Peter Feciľak, 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

- doc. Ing. Stanislav Racek, CSc., University of West Bohemia in Pilsen, Czech Republic
- prof. Ing. Jiří Šafařík, CSc., University of West Bohemia in Pilsen, Czech Republic
- prof. Ing. Róbert Lórencz, CSc., Czech Technical University in Prague, Czech

Republic
- doc. Ing. Jaroslav Zendulka, CSc., Brno University of Technology, Czech Republic
- doc. Ing. František Zbořil, CSc., Brno University of Technology, Czech Republic
- Assoc. Prof. Andreas Bollin, Alps Adriatic University of Klagenfurt, Austria
- Dr. Zoran Budimac, University of Novi Sad, Serbia
- PhD Viktória Szóg, Eötvös Loránd University, Budapest, Hungary
- MA Livia Szedmina, Polytechnical Engineering College, Subotica, Serbia
- Nikolay Karadzhov, Paisii Hilendarki Plovdiv University, Plovdiv, Bulgaria
- Alexander Rakov, Paisii Hilendarki Plovdiv University, Plovdiv, Bulgaria
- Parajdi Lorand Gabriel, Babes Bolyai University of Cluj-Napoca, Clulj-Napoca, Romania
- Paula Bajdor, Czestochova University of Technology, Czestochowa, Poland
- Jindřich Skupa, University of West Bohemia, Plzeň, Czech Republic
- Dmytro Buy, Kiev National Schevchenko University, Kiev, Ukraine
- Michal Stepanovský, Czech Technical University in Prague, Czech Republic
- Tamás Cséri, Eötvös Loránd University, Budapest, Hungary
- Petr Šaloun, Brno University of Technology, Czech Republic
- Rui Pereira, University of Minho, Braga, Portugal
- Bence Babati, Eötvös Loránd University, Budapest, Hungary
- Tibor Brunner, Eötvös Loránd University, Budapest, Hungary
- Gábor Horváth, Eötvös Loránd University, Budapest, Hungary
- Boldizsar Nemeth, Eötvös Loránd University, Budapest, Hungary
- Marek Žák, Brno University of Technology, Czech Republic
- Jiří Vaňek, University of West Bohemia, Plzeň, Czech Republic
- Jaroslav Rozman, University of West Bohemia, Plzeň, Czech Republic
- Wojciech Makowski, TELDAT Sp. Z o.o. sp.k., Bydgoszcz Poland
- Eva Zámečníková, Brno University of Technology, Czech Republic
- Gábor Sági, Alfréd Rényi Institute of Mathematics, Budapest, Hungary
- David Branco, Universidade do Minho, Braga, Portugal
- Neven Vrček, University of Zagreb, Varaždin, Croatia
- Libero Nigro, University of Calabria, Rende, Italy
- Jan Sadolewski, Rzeszow University of Technology, Rzeszow, Poland
- Inna Motronenko, Government budget educational institution of Moscow, Moscow, Russia
- Domanski Zbigniew, Czestochowa University of Technology, Czestochowa, Poland
- Petr Veigend, Brno University of Technology, Czech Republic
- Filip Kocina, Brno University of Technology, Czech Republic
- Gabriela Nečasová, Brno University of Technology, Czech Republic
- Jiří Kunovský, Brno University of Technology, Czech Republic
- Piotr Puchala, Czestochowa University of Technology, Czestochowa, Poland
- Andrzej Grzybowski, Czestochowa University of Technology, Czestochowa, Poland

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
- University of Hradec Králové, Czech Republic
- Information Systems Institute, Technical University of Vienna, Austria
- Johannes Kepler University, Linz, Austria
- Alpen-Adria University, Klagenfurt, Austria
- University Koblenz-Landau, Germany
- University of Alcalá, Alcalá de Henares (Madrid), Spain
- University of Salamanca, Spain
- Eötvös Loránd University, Budapest, Hungary
- Budapest University of Technology and Economics, Budapest, Hungary
- University of Szeged, Hungary
- Technical University of Gdansk, Poland
- Warsaw University of Technology, Warsaw, Poland
- Czestochova University of Technology, Poland
- University of Oradea, Romania
- Babes-Bolyai University, Cluj-Napoca, Romania
- University of Maribor, Slovenia
- 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
- University of Rome, 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
- Bay Zoltán Nonprofit Ltd. for Applied Research, Institute for Logistics and Production Engineering (BAY-LOGI), Miskolc, Hungary
- University of Novi Sad, Faculty of Sciences, Novi Sad, Serbia
- Institute for Language and Speech Processing, Athena Research Center, Athens, Greece
- Digital EUROPE, EUROPEAN SCHOOLNET, Belgium, Brussels
- Cisco Technical Assistance Center Krakow, Poland
- Erasmus Centre for Entrepreneurship, Rotterdam, Netherlands
- Science and Engineering Institute, Dubai, United Arab Emirates
- BAYLOGI, Miskolc, Hungary

6.2.1. Visits of Staff Members to Foreign Institutions

- Porubän, J.: CISCO Global Service, Krakow, Poland
- Porubän, J.: Czech Technical University in Prague, Czech Republic
- Porubän, J.: ACM SAC 2015, University of Salamanca, Spain

- Feciľak, P.: CISCO Global Service, Krakow, Poland
- Fečiľak, P.: NetAcad conference, Plzeň, Czech Republic
- Feciľak, P.: ASC project meeting, Budapest, Hungary
- Steingartner, W.: University of Szeged, Hungary (CEEPUS)
- Ing. William Steingartner, PhD., CECIIS 2015, University of Zagreb, Faculty of Organization and Informatics, Varazdin, Croatia
- Steingartner, W.: Brno University of Technology, Brno, Czech Republic
- Michalko, M.: Czech Technical University in Prague, Czech Republic
- Paralič, M.: Czech Technical University in Prague, Czech Republic
- Ádám, N.: Czech Technical University in Prague, Czech Republic
- Genči, J.: COST Action 1207-PARSEME, Valetta, Malta
- Genči, J.: PARSEME meeting, Yerevan, Armenia
- Genči, J.: TEMPUS INARM, Koblenz, Germany
- Genči, J.: Data a znalosti 2015, Czech Technical University in Prague, Czech Republic
- Vápeník, R.: NetAcad conference, Plzeň, Czech Republic
- Kovalčík, M.: NetAcad conference, Plzeň, Czech Republic
- Halászová, M.: NetAcad conference, Plzeň, Czech Republic
- Szabó, Cs.: Alps Adriatic University of Klagenfurt, Austria
- Szabóová, V.: Alps Adriatic University of Klagenfurt, Austria
- Szabó, Cs.: ITRO 2015, Technical faculty “Mihaljo Pupin” Zrenjanin, University of Novi Sad, Serbia
- Cymbalák, D.: The Science and Engineering Institute, Singapur
- Kainz, O.: The Science and Engineering Institute, Singapur
- Lámer, J.: The Science and Engineering Institute, Singapur
- Kollár, J.: ICNAAM 2015, Rhodes, Greece
- Kollár, J.: ICMES 2015, University of Oradea, Oradea, Romania
- Chodarev, S.: ICMES 2015, University of Oradea, Oradea, Romania
- Bačíková, M.: ICMES 2015, University of Oradea, Oradea, Romania
- Nosáľ, M.: ICMES 2015, University of Oradea, Oradea, Romania
- Spišiak, M.: ICMES 2015, University of Oradea, Oradea, Romania
- Sičák, M. ICMES 2015, University of Oradea, Oradea, Romania
- Sulír, M.: ICMES 2015, University of Oradea, Oradea, Romania
- Jacho, L.: ITRO 2015, Technical faculty “Mihaljo Pupin” Zrenjanin, University of Novi Sad, Serbia
- Korečko, Š.: Budapest University of Technology, Budapest, Hungary
- Szabó, Cs.: Budapest University of Technology, Budapest, Hungary
- Szabóová, V.: Budapest University of Technology, Budapest, Hungary
- Gazda, J.: TSP 2015, Prague, Czech Republic
- Bačíková, M.: FedCSIS 2015, Lodz University of Technology, Lodz, Poland
- Nosáľ, N.: FedCSIS 2015, Lodz University of Technology, Lodz, Poland
- Sulír, M.: FedCSIS 2015, Lodz University of Technology, Lodz, Poland
- Sičák, M.: FedCSIS 2015, Lodz University of Technology, Lodz, Poland
- Pietriková, E.: FedCSIS 2015, Lodz University of Technology, Lodz, Poland
- Porubän, J.: FedCSIS 2015, Lodz University of Technology, Lodz, Poland
- Kainz, O.: IECON 2015, University of British Columbia, Vancouver, Canada
- Cymbalák, D.: University of British Columbia, Vancouver, Canada
- Vápeník, R.: YDS 2015, University of York, York, United Kingdom
- Kainz, O: YDS 2015, University of York, York, United Kingdom

- Lámer, J.: YDS 2015, University of York, York, United Kingdom
- Kovalčík, M.: YDS 2015, University of York, York, United Kingdom
- Feciľak, P.: CISCO ASC summit, Roma, Italy
- Jakab, F.: CISCO ASC summit, Roma, Italy
- Porubän, J.: Brno University of Technology, Brno, Czech Republic
- Ádám, N.: Brno University of Technology, Brno, Czech Republic
- Madoš, B.: Brno University of Technology, Brno, Czech Republic
- Šimoňák, S.: Brno University of Technology, Brno, Czech Republic
- Gazda, J.: CTTE 2015, Technische Universität München, Germany

6.3. Membership in International Organizations and Societies

- Bača, J., Genči, J., Havlice, Z., Hudák, Š., Kollár, J., Korečko, Š., Novitzká, V., Porubän, J., Sobota, B., Šujanský, M., Telepovská, H., Tomášek, M.: 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
- Jakab, F.: Member of the Institute of Electrical and Electronics Engineers
- 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
- Paralič, M.: Member of the Institute of Electrical and Electronics Engineers
- Šujanský, M.: Member of CSSIM/Scientific Association

6.4. Membership in Slovak Organizations and Societies

- Bača, J., Biňas, M., Genči, J., Havlice, Z., Hudák, Š., Kollár, J., Korečko, Š., Mihályi, D., Novitzká, V., Paralič, M., Porubän, J., Steingartner W., Sobota, B., Szabó, Cs., Šimoňák, S., Šujanský, M., Telepovská, H., Tomášek, M., Vokorokos, L.: Members of the SSAKI - „Slovak Society for Applied Cybernetics and Informatics"
- Genči, J., Havlice, Z., Kollár, J., Novitzká, V., Paralič, M., 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 on 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 of directors
- Jakab F.: Member of working group ICT – Research and development, Ministry of Education
- 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“
- Steingartner, W.: Member of the program committee of the international conference CECIIS – Central European Conference on Intelligent and Information Systems
- 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 companies:

- Cisco (www.cnl.sk)
- Siemens Healthcare s.r.o.
- Sybase
- T-Systems Slovakia s.r.o.
- Microsoft
- IBM Slovensko, spol. s r.o.
- Astound Commerce s.r.o.
- bart.sk s.r.o.
- ELCOM, s.r.o., Prešov
- Fpt Slovakia, s.r.o.
- GEODETICCA, s.r.o.
- GlobalLogic Slovakia s.r.o.
- NESS KE s.r.o.
- PWC Avis, s.r.o.
- Software AG Development Center Slovakia, s.r.o.
- Wirecard Technologies GmbH

- Cooperation with the Stredná priemyselná škola dopravná, Košice

7 THESES

Thesis type	Bachelor	Master	Doctoral
Number	142	132	8

8 OTHER ACTIVITIES

8.1. Symposia, Workshops, Conferences, Seminars

- Informatics'2015 – IEEE 13th International Conference Informatics 2015, November 18–20, 2015, in Poprad, Slovakia
- SAMI 2015 – IEEE 13th International Symposium on Applied Machine Intelligence and Informatics, 22–24th January, 2015 in Herľany, Slovakia (DCI co-operation)
- ICETA 2015 – IEEE 13th International Conference on Emerging eLearning Technologies and Applications, November 26–27, 2015, The High Tatras, Slovakia (DCI co-operation)

8.2. Activities in cooperation with commercial partners

- T-Systems Hackathon 2015, November 28–29, 2015, in Košice, Slovakia Largest Hackathon in Slovakia

9 PUBLICATIONS

9.1 Books

1. GUZAN, M. - SOBOTA, B.: Vizualizácia stavového priestoru nelineárnych autonómnych obvodov - 1. ed. - Ostrava: Jupos - 2015. - 138 p.. - ISBN 978-80-87321-31-7.
2. KOREČKO, Š. - HUDÁK, Š.: Formálne metódy pre diskrétne systémy: Petriho siete a B-metóda - 1. ed. - Košice: TU - 2015. - 136 s.. - ISBN 978-80-553-1895-0.

3. STEINGARTNER, W.: Introduction to Programming and Networks Úvod do programovania a sietí Practical Foundations of Informatics Praktické základy informatiky - 1. ed. - Košice : TU - 2015. - 316 s. [CD-ROM]. - ISBN 978-80-553-2043-4.
4. BALÁŽ, A.: Computer Systems Security - 2. ed. - Košice: TU - 2015. - 149 s. [CD-ROM]. - ISBN 978-80-553-1948-3.
5. BALÁŽ, A.: Internet Security - 1. ed. - Košice: TU - 2015. - 145 s. [CD-ROM]. - ISBN 978-80-553-2030-4.
6. HAVLICE, Z.: Základy softvérového inžinierstva - Fundamentals of Software Engineering - 1. ed. - Košice : TU - 2015. - 148 s.. - ISBN 978-80-553-2054-0.
7. STEINGARTNER, W. - NOVITZKÁ, V.: Sémantika programovacích jazykov - 1. ed. - Košice : Technická univerzita - 2015. - 201 s.. - ISBN 978-80-553-1951-3.
8. NOVITZKÁ, V. - MIHÁLYI, D.: Teória typov - 1. ed. - Košice : Technická univerzita - 2015. - 155 s.. - ISBN 978-80-553-1950-6.
9. SOBOTA, B. - HROZEK, F.: Systémy virtuálnej reality - 1. ed. - Košice : TU - 2015. - 260 s.. - ISBN 978-80-553-1970-4.
10. JAKAB, F. - FECIĽAK, P. - FECIĽAKOVÁ, K.: Routing algorithms in computer networks - 1. ed. - Košice : Technická univerzita - 2015. - 100 s.. - ISBN 978-80-553-2108-0.
11. JAKAB, F. - FECIĽAK, P. - FECIĽAKOVÁ, K.: Routing algorithms in computer networks - 1. ed. - Košice : Technická univerzita - 2015. - 100 s.. - ISBN 978-80-553-2108-0.
12. SZABÓ, Cs.: Managing Model-based Testing of Software - 1. ed. - Košice : TU - 2015. - 100 s.. - ISBN 978-80-553-1990-2.
13. PARALIČ, M. - KERER, C. - KURMANOWYTSCH, R. - GSCHWIND, Th.: Distributed Programming ShareMe labs - 1. ed. - Košice : TU - 2015. - 121 s.. - ISBN 978-80-553-2049-6.
14. PARALIČ, M. - BIŇAS, M. - PIETRIKOVÁ, E.: Programming - Labs - 1. ed - Košice : Technická univerzita - 2015. - 111 s.. - ISBN 978-80-553-2153-0.
15. PORUBÄN, J.: Webové technológie - 1. ed - Košice : Technická univerzita - 2015. - 88 s.. - ISBN 978-80-553-2133-2.
16. ÁDÁM, N.: Word 2013 učebnica textového editora - 1. vyd - Košice : Technická univerzita - 2015. - 126 s.. - ISBN 978-80-553-2201-8.
17. ÁDÁM, N. - KOREČKO, Š.: Informatika a IT 2 - 1. vyd. - Košice : TU - 2015. - 263 s.. - ISBN 978-80-553-2214-8.

9.1.1 Book Chapters

1. KOREČKO, Š. - SORÁD, J.: Using Simulation Games in Teaching Formal Methods for Software Development - 2015. In: Innovative Teaching Strategies and New Learning Paradigms in Computer Programming: Advances in Higher Education and Professional Development (AHEPD) Book Series. - Hershey : IGI Global, 2015 P. 106-130. - ISBN 978-1-4666-7304-5

9.2 Journals

1. VASZI, Zs. - SZABÓ, Cs. - VARGA, A.: Implementing the mathematical model of the throughput of compressor station aggregates - 2015. In: Nonlinear Analysis : Modelling and Control. Vol. 20, no. 2 (2015), p. 291-304. - ISSN 1392-5113

2. STEINGARTNER, W. - POLÁKOVÁ, A. - PRAZŇÁK, P. - NOVITZKÁ, V.: Linear logic in computer science - 2015. In: Journal of Applied Mathematics and Computational Mechanics. Vol. 14, no. 1 (2015), p. 91-100. - ISSN 2299-9965
3. DEMETEROVÁ, E. - MIHÁLYI, D. - NOVITZKÁ, V.: A Categorical Model of Predicate Linear Logic - 2015. In: Journal of Applied Mathematics and Computational Mechanics. Vol. 14, no. 1 (2015), p. 27-42. - ISSN 2299-9965
4. VOKOROKOS, L. - BALÁŽ, A. - ÁDÁM, N.: Secure web server system resources utilization - 2015. In: Acta Polytechnica Hungarica. Vol. 12, no. 2 (2015), p. 5-19. - ISSN 1785-8860
5. VOKOROKOS, L. - BALÁŽ, A. - MADOŠ, B.: Application security through sandbox virtualization - 2015. In: Acta Polytechnica Hungarica. Vol. 12, no. 1 (2015), p. 83-101. - ISSN 1785-8860
6. ŠESTÁK, K. - HAVLICE, Z.: Agile development with 3D data modeling - 2015. In: International Review on Computers and Software. Vol. 10, no. 6 (2015), p. 558-565. - ISSN 1828-6003
7. PORUBÄN, J. - BAČÍKOVÁ, M. - CHODAREV, S. - NOSÁĽ, M.: Teaching pragmatic model-driven software development - 2015. In: Computer Science and Information Systems. Vol. 12, no. 2 (2015), p. 683-705. - ISSN 1820-0214
8. CYMBALÁK, D. - KAINZ, O. - JAKAB, F.: Extended object tracking and stream control model based on predictive evaluation metric of multiple-angled streams - 2015. In: IJCTE - International Journal Of Computer Theory and Engineering. Vol. 7, no. 5 (2014), p. 343-348. - ISSN 1793-8201
9. ENNERT, M. - CHOVANCOVÁ, E. - DUDLÁKOVÁ, Z.: Testing of IDS model using several intrusion detection tools - 2015. In: Journal of Applied Mathematics and Computational Mechanics. Vol. 14, no. 1 (2015), p. 55-62. - ISSN 2353-0588
10. PAVLIK, T. - PUZDER, M. - BENČÖ, G. - MUDARRI, T.: Analysis of Suitable BI Helios Green as an Effective Business Intelligence - 2015. In: Interdisciplinarity in Theory and Practice. - 2015 No. 6 (2015), p. 72-77. - ISSN 2344-2409
11. PAVLIK, T. - PUZDER, M. - BENČÖ, G. - MUDARRI, T.: Riadenie nákladov využitím manažérskych IS v banských podnikoch - 2015. In: Q-magazín. Duben (2015), p. 1-12. - ISSN 1213-0451
12. MUDARRI, T. - AL-RABEEI, S. A. S.: Security fundamentals: access control models - 2015. In: International Journal of Interdisciplinarity in Theory and Practice. No. 7 (2015), p. 259-262. - ISSN 2344-2409
13. EŠTÓK, R. - KAINZ, O. - MICHALKO, M. - JAKAB, F.: System for Human Detection in Image Based on Intel Galileo - 2015. In: International Journal of Advanced Research in Artificial Intelligence (IJARAI). Vol. 4, no. 9 (2015), p. 17-21. - ISSN 2165-4069
14. ŠEVČÍK, J. - KAINZ, O. - FECIĽAK, P. - JAKAB, F.: System for EKG monitoring Solution based on Arduino microcontroller- 2015. In: International Journal of Advanced Research in Artificial Intelligence (IJARAI). Vol. 4, no. 9 (2015), p. 22-25. - ISSN 2165-4069
15. KAINZ, O. - CYMBALÁK, D. - JAKAB, F.: Anthropometric Proportions Estimation Using recCAL in Multi-Camera Environment - 2015. In: International Journal of Modeling and Optimization. Vol. 5, no. 4 (2015), p. 300-303. - ISSN 2010-3697
16. CYMBALÁK, D. - KAINZ, O. - JAKAB, F.: Real-Time Automatic Selection of the Best Shot on Object in 4K Video Stream Based on Tracking Methods in Virtual

Cropped Views - 2015. In: International Journal of Computer and Electrical Engineering (IJCEE). Vol. 7, no. 4 (2015), p. 275-282. - ISSN 1793-8163

17. VOKOROKOS, L. - JUHÁR, J. - PEKÁR, A. - FECIĽAK, P.: The Web Application of the SLAmeter Tool - 2015. In: Acta Electrotechnica et Informatica. Roč. 15, č. 1 (2015), s. 15-23. - ISSN 1335-8243
18. SZABÓOVÁ, V. - SZABÓ, Cs. - NOVITZKÁ, V. - DEMETEROVÁ, E.: Game semantics of the transaction rollback database operation - 2015. In: Acta Electrotechnica et Informatica. Roč. 15, č. 1 (2015), s. 3-8. - ISSN 1335-8243
19. VOKOROKOS, L. - MIHAĽOV, J. - CHOVANCOVÁ, E.: Potential of LEGO © EV3 mobile robots - 2015. In: Acta elektrotechnica et informatika. Roč. 15, č. 2 (2015), s. 31-34. - ISSN 1335-8243
20. TOMÁŠEK, M.: Multi-Agent System for Business Applications - 2015. In: Acta Electrotechnica et Informatica. Roč. 15, č. 2 (2015), s. 35-38. - ISSN 1335-8243
21. VOKOROKOS, L. - HURTUK, J. - MADOŠ, B. - OBEŠTER, P.: Security issues of email marketing service - 2015. In: Acta Electrotechnica et Informatica. Roč. 15, č. 2 (2015), s. 9-14. - ISSN 1335-8243
22. VOKOROKOS, L. - HURTUK, J. - MADOŠ, B. - FRIGA, K.: Design of steganographic algorithm using web services - 2015. In: Acta Electrotechnica et Informatica. Roč. 15, č. 2 (2015), s. 21-25. - ISSN 1335-8243
23. VOKOROKOS, L. - MADOŠ, B. - HURTUK, J. - FEKOVÁ, M.: Multi-carrier steganographic algorithm using LSB steganography - 2015. In: Acta Electrotechnica et Informatica. Roč. 15, č. 2 (2015), s. 39-42. - ISSN 1335-8243
24. HURTUK, J. - MADOŠ, B. - HALČÍN, Š.: Sound-based communication in the process of malware distribution - 2015. In: Acta Electrotechnica et Informatica. Roč. 15, č. 2 (2015), s. 62-65. - ISSN 1335-8243

9.3 Other publications

Publication Type	Confereces		Other
	Foreign	Home	
Number	25	30	30

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 Department offers three types of full-time courses:

Bachelor's Degree course "*Technologies in 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 "*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 progressive materials and technologies.

PhD. course "*Technologies in automotive electronics*" lasts in normal way 4 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 the accent on automotive electronics: mounting technology in electronics, printed circuit boards, thick film technology, LTCC technology and polymer technology.

The basic research activities of the 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.
Associate Professors:	doc. Ing. Juraj Ďurišin, PhD. (defended habilitation thesis in October 2015)
Assistant Professors:	Ing. Slavomír Kardoš, PhD. Ing. Ľubomír Livovský, PhD. Ing. Igor Vehec, PhD. Ing. Pavol Cabúk, PhD. Ing. Michal Jurčišin, PhD. (finished employment in July 2015) Ing. Ondrej Kováč, PhD. (new employee from June 2015)
Research Staff:	Igor Vehec
Support Staff:	Mgr. Alena Focková
Internal Ph.D. Students:	Ing. Kornel Ruman (defended PhD thesis in July 2015) Ing. Tibor Rovenský Ing. Peter Lukács Ing. Tomáš Girašek

Ing. Peter Balog
Ing. Samuel Žuk

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)	Lecturer
Fundamentals of Materials Engineering	1st	2/2	Pietriková, Kardoš, Ďurišin, Vehec, Cabúk
Production Processes in Electronics	3rd	2/3	Ďurišin, Cabúk
Production and Properties of Passive Components	4th	2/2	Kardoš
Measurement of Electronics Structures	4th	2/2	Cabúk
Bachelor Thesis I.	5th	0/3	Pietriková
Fundamentals of Microelectronic Technologies	5th	2/2	Vehec
Microstructural Analyses of Materials in Electronics	5th	3/3	Ďurišin
Automated Measuring Systems	6th	2/3	Livovský
Bachelor Thesis II.	6th	0/9	Pietriková

4.2. Graduate Study (Ing.)

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Production Processes in Electronics I	1st	4/4	Pietriková
Design Systems in Electronic	1st	2/3	Livovský
Production Processes in Electronics	1st	2/3	Slosarčík
Semestral Project	2nd	0/3	Pietriková
Physical Principles and Design of Microsystems	2nd	3/2	Somora
Production Processes in Electronics II	2nd	2/4	Slosarčík
Quality and Reliability Management	2nd	2/2	Pietriková
Diploma Thesis I.	3rd	0/5	Pietriková
Production Technologies, Structure, Properties and Applications of Sensors	3rd	2/3	Banský
Design Systems in Electronic	3rd	2/3	Livovský
Materials for Electrotechnical Applications	3rd	2/1	Pietriková

Microprocessors in Automotive Electronics	3rd	2/2	Livovský
Diploma Thesis II.	4th	0/18	Slosarčík
Chosen Chapters from Progressive Materials and Technologies in Car Electronics	4th	2/3	Pietriková

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

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

4.3. Postgraduate Study (PhD.)

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Electrotechnologies and Materials	1st	0/2	
Scientific Research I.	1st	0/8	
Analyse Methods of Electronic Materials and Structures	2nd	0/2	
Scientific Research II.	3rd	0/16	
Subject of the Branch	3rd	0/2	
Scientific Research III.	5th	0/16	
Scientific Research IV.	6th	0/16	
Scientific research V.	7th	0/16	
PhD Project	3rd	2	
PhD Thesis	8th	9	

5 RESEARCH PROJECTS

- Participation on the project from structural funds: *University Science Park TECHNICOM for Innovation Applications Supported by Knowledge Technology* (Univerzitný vedecký park TECHNICOM pre inovačné aplikácie s podporou znalostných technológií). ITMS: 26220220182. Coordinator: prof. Ing. Stanislav Kmeť, CSc. Duration: 06/2013 - 06/2015.
- Participation on the project from structural funds: *Package of Elements for Improvement and Innovation of Education* (Balík prvkov pre skvalitnenie a inováciu vzdelávania na TUKE). ITMS: 26110230070. Duration: 01/01/2013 - 30/09/2015.
- Participation on the project from structural funds: *Universities as the Knowledge Society Development* (Vysoké školy ako motory rozvoja vedomostnej spoločnosti). ITMS: 26110230120.

- *Virtual and Practical Applications to Electronic Assembling Technology (VAPAEAT).* VAPAEAT/2013-1-TR1-LEO05-47531. Local coordinator: prof. Ing. Alena Pietriková, CSc. Duration: 2013 - 2015.

- *Development of New Generation Joints of Power Electronics Using Nonstandard Sn-based Alloys* (Vývoj novej generácie spojov výkonovej elektroniky s použitím neštandardných zliatin na báze cínu). Project APVV-14-0085. Coordinator: prof. Ing. Alena Pietriková, CSc. Duration: 2015 - 2018.

- *Vertical Lower Limbs Rehabilitation Device for Spatial Mobility of Patient* (Vertikálne rehabilitačné zariadenie dolných končatín umožňujúce priestorovú mobilitu pacienta). Project VEGA 1/0074/15. Coordinator: prof. Ing. Stanislav Slosarčík, CSc. Duration: 2015 - 2018.
- *Effects of Behaviour of Multilayer Modules Based on LTCC in the High Frequency Environment* (Efekty správania sa viacvrstvových modulov na báze LTCC v prostredí vysokých frekvencií). Project VEGA 51/0218/13. Coordinator: prof. Ing. Alena Pietriková, CSc. Duration: 2012 - 2015.
- *Electrical Properties of Soldered and Bonded Joints in Microelectronics* (Elektrické vlastnosti spájkovaných a kontaktovaných spojov v mikroelektronike). Project VEGA 1/0776/14. Coordinator: Ing. Juraj Ďurišin, PhD. Duration: 2014 - 2015.
- *Implementation of New Research Trends into Education in the Area of Progressive Materials and Intelligent Technologies of Auto Electronics* (Implementácia nových trendov výskumu do vzdelávania v oblasti progresívnych materiálov a inteligentných technológií autoelektroniky). Project KEGA 002TUKE-4/2014. doc. Alena Pietriková, CSc. Duration: 2014 - 2016.

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:

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
- Sensor, s.r.o., Košice research, development
- Semikron, s.r.o., Vrbové research, development
- Michatek, k.s., Michalovce research, development

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,
- Institute of Electronics and Photonics, FEI STU Bratislava,
- Slovak Academy of Science, Košice.

6.1.1. Visitors to the Department

- doc. Ing. Pavel Mach CSc., CVUT, CZ 30.09. – 02.10.2015
- Ing. Josef Sedláček CSc., CVUT, CZ 30.09. – 02.10.2015
- Ing. Karel Dušek, Ph.D., CVUT, CZ 30.09. – 02.10.2015
- prof. Ing. Jiří Kazelle, CSc., VUT Brno, CZ 30.09. – 02.10.2015
- doc. Ing. Vlastimil Skočil, CSc., VUT Brno, CZ 30.09. – 02.10.2015
- doc. Ing. Jiří Vaněk, Ph.D., VUT Brno, CZ 30.09. – 02.10.2015

- Ing. Martin Frk, Ph.D., VUT Brno, CZ 30.09. – 02.10.2015
- Ing. Helena Polsterová, CSc., VUT Brno, CZ 30.09. – 02.10.2015
- Ing. Jiří Starý, Ph.D., VUT Brno, CZ 30.09. – 02.10.2015
- doc. Ing. Petr Bača, Ph.D., VUT Brno, CZ 30.09. – 02.10.2015
- Ing. Tomáš Řeřicha, Ph.D., Univ. of West Bohemia, CZ 30.09. – 02.10.2015
- Ing. Josef Pihera, Ph.D., Univ. of West Bohemia, CZ 30.09. – 02.10.2015
- Ing. Tomáš Blecha, PhD., Univ. of West Bohemia, CZ 30.09. – 02.10.2015
- doc. Ing. Ivan Szendiuch, CSc., VUT Brno, CZ 22.10. – 22.10.2015

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. Visits of Staff Members to Foreign Institutions

- Ruman, K., Ilmenau, Germany 22.02. – 28.02.2015
- Rovenský, T., Ilmenau, Germany 22.02. – 28.02.2015
- Lukács, P., Brno, Czech Republic 04.03. – 04.03.2015
- Cabúk, P., Brno, Czech Republic 25.03. – 27.03.2015
- Pietriková, A., Eger, Hungary 06.05. – 10.05.2015
- Rovenský, T., Eger, Hungary 06.05. – 10.05.2015
- Ruman, K., Eger, Hungary 06.05. – 10.05.2015
- Lukács, P., Eger, Hungary 06.05. – 10.05.2015
- Cabúk, P., Eger, Hungary 06.05. – 10.05.2015
- Kardoš, S., Eger, Hungary 06.05. – 10.05.2015
- Vehec, I., Eger, Hungary 06.05. – 10.05.2015
- Slosarčík, S., Rzeszow, Poland 15.05. – 15.05.2015
- Cabúk, P., Lisbon, Portugal 01.06. – 05.06.2015
- Ďurišin, J., Hamburg, Germany 10.07. – 17.07.2015
- Ďurišin, J., Grenoble, France 26.08. – 05.09.2015
- Pietriková, A., Ankara, Turkey 02.09. – 05.09.2015
- Cabúk, P., Brno, Czech Republic 15.09. – 16.09.2015
- Pietriková, A., Gdansk, Poland 20.09. – 23.09.2015
- Rovenský, T., Gdansk, Poland 20.09. – 23.09.2015
- Lukács, P., Gdansk, Poland 20.09. – 23.09.2015

6.3. Membership in International Organizations and Societies

- Banský, J.: Honorary Consul of Federal Republic Germany in Slovak Republic
- Pietriková, A.: Member of the International Steering Committee for International Spring Seminar on Electronics Technology – ISSE
- Slosarčík, S.: Member of the International Steering Committee for IMAPS – Czech and Slovak
- Slosarčík, S.: Member of „Scientific Committee“, International Interdisciplinary

PhD Workshop I2PhDW
- Pietriková, A.: Member of the International Steering Committee for IMAPS Poland Conference
- Slosarčík, S.: Member of „International Program Committee“, The International Conference on Advances in Elektronik and Photonic Technologies
- Pietriková, A.: Member of IMAPS CZ&SK
- Slosarčík, S..: Member of IMAPS CZ&SK
- Livovský, Ľ.: Member of IMAPS CZ&SK
- Cabúk, P.: Member of IMAPS CZ&SK
- Vehec, I.: Member of IMAPS CZ&SK

6.4. Membership in Slovak Organizations and Societies

- Banský, J.: Member of "The Convocation of Faculty of Electrical Engineering and Informatics”, FEI TU Košice
- Banský, J.: Vice-Chairman of the Board of Directors - “East Slovakian Investment Agency”
- 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 Commission for Ph.D. Study in the Branch “5-2-12 Electrotechnology and Materials” at FEI TU Košice
- Pietriková, A.: Member of the Commission for Ph.D. Study in the Branch “5-2-12 Electrotechnology and Materials” at Faculty of Electrical Engineering, University of Žilina
- Slosarčík, S.: Member of the Slovak Metrology Society
- Pietriková, A.: Member of Scientific Board at TUKE
- Pietriková, A.: Vice-president of Scientific board at FEI TUKE
- Livovský, Ľ.: Member of the Faculty Academic Senate at FEI TUKE

7 THESES

Thesis type	Bachelor	Master	Doctoral
Number	8	17	1

8 OTHER ACTIVITIES

8.1 Symposia, Workshops, Conferences

- ELEKTROTECHNOLOGIE 2015: Organizing of international conference Elektrotechnologie 2015, that was held on 30.9. – 2.10.2015 in High Tatras.

8.2 Competitions and Rewards

- LUKÁCS, P.: Ex-æquo Best Poster Award for the paper: LUKÁCS, P. - PIETRIKOVÁ, A. - POTENCKI, J. - TOMASZEWSKI, G., UWB Antenna Based on Nanoparticles of Silver on Polyimide Substrate, 38th International Spring Seminar on Electronics Technology, Eger, Hungary, 06-10.5.2015.
- RUMAN, K.: Excellent Poster Award for the paper: Modified I-Q Demodulator for

M-Sequence UWB Sensor System Based on LTCC, 38th International Spring Seminar on Electronics Technology, Eger, Hungary, 06-10.5.2015.

- ROVENSKÝ, T.: IMAPS Poland Society Young Scientist Award for the article: Influence of various multilayer LTCC systems on dielectric properties' stability in GHz frequency range, 40th International Microelectronics and Packaging IMAPS Poland 2016 Conference.
- LUKÁCS, P.: Elfa Prize for the Best Presentation in Section EEE 2nd year for the article: Contribution to Analysis of Layers Based on Silver Nanoparticles Realized by Inkjet Printing Technology, 15th Scientific Conference of Young Researchers, Herlany, Slovakia, 19.5.2015.
- RUMAN, K.: SES Award for the Best Presentation in Section EEE for the article: Contribution to Analysis of Microstrip Filters for UWB Sensor Systems Based on LTCC, 15th Scientific Conference of Young Researchers, Herlany, Slovakia, 19.5.2015.

9 PUBLICATIONS

9.1. Textbooks

1. PIETRIKOVÁ, A. - KARDOŠ, S.: Fundamentals of materials engineering. Košice : TU, 2015, 118 pp. ISBN 978-80-553-1954-4
2. PIETRIKOVÁ, A. - VEHEC, I.: Processing Technologies in Electronics (Výrobné procesy v elektronike). Košice : TU, 2015, 157 pp. ISBN 978-80-553-1589-8

9.2. Current Journals

1. PIETRIKOVÁ, A. - RUMAN, K. - ROVENSKÝ, T. - VEHEC, I.: Impact analysis of LTCC materials on microstrip filters' behaviour up to 13 GHz. In: Microelectronics International. Vol. 32, no. 3 (2015), p. 122-125. ISSN 1356-5362

9.3. Journals

1. RUMAN, K. - ROVENSKÝ, T. - PIETRIKOVÁ, A.: Correlation between Simulations and Real Measurements of Microstrip Filters Based on LTCC in High Frequency Area. In: Acta Electrotechnica et Informatica. Roč. 15, č. 1 (2015), s. 24-28. - ISSN 1335-8243
2. CABÚK, P. - GIRAŠEK, T.: Simulácia teplotných pomerov na DPS v prostredí HyperLynx® Thermal. In: DPS : Elektronika od A do Z. Vol. 6, no. 2 (2015), p. 26-28. ISSN 1805-5044
3. LIVOVSKÝ, Ľ.: Návrh aplikácie pre mikroprocesor XMC4500. In: DPS : Elektronika od A do Z. Vol. 6, no. 3 (2015), p. 12-15. ISSN 1805-5044
4. VEHEC, I.: Kontaktovacie hroty na vytváranie kontaktovaných spojov. In: DPS - Elektronika od A do Z. Vol. 6, no. 5 (2015), p. 34-37. ISSN 1805-5044
5. LUKÁCS, P. - PIETRIKOVÁ, A.: Technológia InkJet Printing – 1. časť Úvod do technológie InkJet Printing. In: DPS. Vol. 6, no. 6 (2015), p. 34-38. ISSN 1805-5044
6. CABÚK, P. - ĎURIŠIN, J. - PIETRIKOVÁ, A.: Elektromigrácia v spájkovaných spojoch. In: Posterus. Roč. 8, č. 3 (2015), s. 1-6. ISSN 1338-0087

7. BALOG, P. - JURČIŠIN, M.: Využitie exoskeletov v procese rehabilitácie pacientov s ochrnutím končatín. In: Posterus.sk. Roč. 8, č. 2 (2015), s. 1-11. ISSN 1338-0087
8. MAČO, M. - CABÚK, P. - ĎURIŠIN, J.: Systém bezpečnostných vzduchových vankúšov v automobile. In: Posterus.sk. Roč. 8, č. 4 (2015), s. 1-9. ISSN 1338-0087
9. LUKÁCS, P. - PIETRIKOVÁ, A.: Analýza zmáčavosti polyimidového substrátu Kapton® HN. In: Posterus. Roč. 8, č. 7 (2015), s. 1-8. ISSN 1338-0087
10. SEDLAČKO, L. - CABÚK, P. - VEHEC, I.: Návrh meracej zostavy pre meranie volt-ampérových charakteristík spojov. In: Posterus.sk. Roč. 8, č. 7 (2015), s. 1-9. ISSN 1338-0087
11. VEHEC, I. - CABÚK, P.: Simulácia teplotných pomerov v statickej peci pri výpale keramických substrátov. In: Posterus.sk. Roč. 8, č. 7 (2015), s. 1-5. ISSN 1338-0087
12. SÝKORA, I. - KARDOŠ, S.: Systém pre meranie malých hmotností s dotykovým riadením. In: Posterus.sk. Roč. 8, č. 8 (2015), s. 1-8. ISSN 1338-0087
13. GIRAŠEK, T. - PIETRIKOVÁ, A.: Substráty pre výkonovú elektroniku. In: Posterus.sk. Roč. 8, č. 8 (2015), s. 1-16. ISSN 1338-0087
14. JURČIŠIN, M. - BALOG, P.: Systém pre automatizované meranie teploty. In: Posterus.sk. Roč. 8, č. 6 (2015), s. 1-8. ISSN 1338-0087

9.4. Patents

1. SLOSARČÍK, S. - CABÚK, P. - KARDOŠ, S. - VEHEC, I. - JURČIŠIN, M.: Heteroštruktúra korundový substrát - 3D LTCC modul patent č. 288277, Banská Bystrica : ÚPV SR - 2015. - 2 s.
2. SLOSARČÍK, S. - CABÚK, P. - DOVICA, M. - KALITA, W. - WEGLARSKI, M.: Spôsob výroby chladiacich kanálikov na rozhraní korundový substrát - 3D LTCC štruktúra patent č. 288293 : Vestník ÚPV SR 82015, Banská Bystrica : ÚPV SR - 2015. - 5 s.

9.5. Other publications

Publication Type	Conferences		Other
	Abroad	Home	
Number	9	13	7

DEPARTMENT OF THEORETICAL AND INDUSTRIAL ELECTRICAL ENGINEERING

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

1 DEPARTMENT'S PROFILE

Department of Theoretical and Industrial Electrical Engineering is a workplace, which guarantees the bachelor, master and doctoral study program Industrial Electrical Engineering. In addition to that, department's employers 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 industrial engineering where students learn basic information and skills regarding the construction and service of basic industrial systems and information technologies. 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.
- Applied microcomputer and smart information circuits in industrial systems.

2 STAFF

Professors:	prof. Ing. Dobroslav Kováč, PhD. prof. Ing. Irena Kováčová, 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, PhD. Ing. Milan Guzan, PhD. Ing. Anna Hodulíková, PhD. Ing.Ján Molnár, PhD. Ing. Tibor Vince, PhD. Ing. Ján Perduľak, PhD.
Technical staff:	Jozef Lenart Danuša Topolčaniová
PhD. Students:	Ing. Matej Bereš Ing. Matúš Ocilka Ing. Jozef Dziak

3 LABORATORIES

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

4 TEACHING

4.1. Undergraduate Study (Bc.)

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Fundamentals of Electrical Engineering	1st	2/2	Tomčíková, Dudáš, Hodulíková
Electrotechnics	2nd	3/2	Guzan, Hodulíková, Špaldonová, Tomčíková
Digital Measurement	2nd	2/2	Mojžiš
Electrotechnical Practical Lessons	2nd	0/3	Mojžiš, Bučko, Hodulíková
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	3rd	3/3	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	Guzan
Programming of Industrial Applications II	4th	2/2	Ocilka, Bereš
Semestral Project II	4th	0/3	Kováč
Metrology	5th	2/2	Mojžiš
Modelling and Measurement	5th	2/2	Molnár
Applied Electronics	5th	2/3	Kováčová
Database Systems SQL ORACLE	5th	2/2	Molnár
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)	Lecturers
Fundamentals of Electrical Engineering	1st	2/2	Dudáš, Tomčíková
Electrotechnics	2nd	3/2	Dudáš, Tomčíková
Windows server	3rd	2/2	Vince

4.3. Graduate study (Ing.)

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
EMC	8th	2/2	Kováčová
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.
- *Investigation of postnatal neurogenesis in relation to neurodegeneration.* Project VEGA No. 2/0069/15, duration: 2015-2017, co-ordinator: J. Molnár, members: I. Kováčová, D. Kováč, T. Vince, M. Bereš.

6 CO-OPERATION

6.1. Co-operation in Slovakia

- Department of Experimental Physics, P.J. Šafárik University, Košice
- Department of Metals Science, TU Košice
- Faculty of Electrical Engineering and Information Technology, Slovak University of Technology, Bratislava
- Institute of Electrical Engineering, Slovak Academy of Science, Bratislava
- Department of Metal Physics, Institute of Experimental Physics, Slovak Academy of Sciences, Košice
- Department of Low Temperature Physics, Institute of Experimental Physics, Slovak Academy of Sciences, Košice
- Institute of Material 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
- Antik Telecommunications

6.2. International Co-operation

- The Czech Academy of Science, Prague, Czech Republic
- Czech Technical University in Prague, Czech Republic
- Institute of Molecular Physics, Polish Academy of Sciences, Poznan, Poland
- Institute of Physics, A. Mickiewicz University, Poznan, Poland
- Politechnika Czestochowska, Poland
- Stefan cel Mare University, Suceava, Romania
- Silesian University of Technology, Gliwice, Poland
- University of Valencia, Spain
- University, Budapest, Hungary
- University of Florence, Italy
- University of Applied Sciences, Harz, Germany
- University, Miskolc, Hungary
- University of West Bohemia, Pilsen, Czech Republic
- Magna Steyr, Graz, Austria

- Kremenchuk Mykhailo Ostrohradskyi National University, Ukraine

6.3. Membership in International Organizations and Societies

- D. Kováč: Member of the team of evaluators of The Grant Agency of Czech Republic
- 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
- M. Mojžiš: Member of Technical Standardization Committee

7 THESES

Thesis type	Bachelor	Master	Doctoral
Number	13	8	1

8 OTHER ACTIVITIES

9 PUBLICATIONS

9.1. Journals

1. VINCE, T. – HRICKO, J.: Custom mobile robot controlled by android smartphone. In: *Electromechanical and energy saving systems*, Vol. 24, no. 2 (2015), pp. 39-44, ISSN 2072-2052
2. PERDUĽAK, J.: Design of analogue pulse generator for novel concept of multi-leg boost converter. In: *Electromechanical and energy saving systems*, Vol. 24, no. 2 (2015), pp. 90-92, ISSN 2072-2052
3. BEREŠ, M – KOVÁČ, D.: Digital pulse generator for multiphase boost converter. In: *Acta Electrotechnica et Informatica*, Vol. 14, No. 4 (2014), pp. 46-51, ISSN 1335-8243
4. DZIAK, J. – KMEC, M. – BEŇA, Ľ.: Admitance model for TCSC simulation and control of power flows in Simulink environment. In: *Electroenergetics,* Vol. 8, No. 1 (2015), pp. 10-14, ISSN 1337-6756
5. BUČKO, R.: Design and realization of control unit for smart home. In: *Posterus*, Vol. 8, No. 7 (2015), pp. 1-12, ISSN 1338-0087

6. GUZAN, M.: Analysis of 6(4) – Valued Memory. In: *Elektronika ir Elektrotechnika* Vol. 20, no. 6 (2014), pp. 89-92, ISSN 1392-1215
7. PETRŽELA, J. – GOTTHANS, T. – GUZAN, M.: Dynamical tangles in third-order oscillator with single jump function. In: *The Scientific World Journal*, Vol. 2014, article no. 239407 (2014), pp. 1-12, ISSN 2356-6140

9.3. Textbooks

1. KOVÁČ, D.: Programming of industrial applications. 1st edition, *TU Košice*, 2015, 130 p., ISBN 978-80-553-1940-7
2. KOVÁČOVÁ, I.: Applied electronics. 1st edition, TU Košice, 2015, 141 p., ISBN 978-80-553-1943-8
3. KOVÁČOVÁ, I.: Economical analyses and accounting. 1st edition, TU Košice, 2015, 164 p., ISBN 978-80-553-1942-1
4. KOVÁČ, D. - KOVÁČOVÁ, I.: Industrial Electrical Engineering. 1st edition, TU Košice, 2015, 145 p., ISBN 978-80-553-1939-1
5. KOVÁČOVÁ, I.: ZOSP – 5th part. 1st edition, TU Košice, 2015, 90 p., ISBN 978-80-553-1957-5
6. VINCE, T.: Operational system Windows server. 1st edition, TU Košice, 2015, 135 p., ISBN 978-80-553-1962-9
7. BUČKO, J. – MOLNÁR, J.: Programming of industrial applications 2. 1st edition, TU Košice, 2015, 142 p., ISBN 978-80-553-1964-3
8. MOLNÁR, J.: Electrical Engineering Systems Controlled via Internet. 1st edition, TU Košice, 2015, 158 p., ISBN 978-80-553-2032-8
9. TOMČÍKOVÁ, I.: Fundamentals of Electrical Engineering. 1st edition, TU Košice, 2015, 209 p., ISBN 978-80-553-1958-2.
10. TOMČÍKOVÁ, I.: Applied MATLAB. 1st edition, TU Košice, 2015, 173 p., ISBN 978-80-553-1959-9
11. KOVÁČOVÁ, I.: ZOSP – 6th part. 1st edition, TU Košice, 2015, 91 p., ISBN 978-80-553-2168-4
12. GUZAN M., - MOJŽIŠ, M.: Metrology. 1st edition, TU Košice, 2015, 164 p., ISBN 978-80-553-1997-1
13. PERDUĽAK, J.: Industrial Electrical Engineering – Non-linear semiconductor parts. 1st edition, TU Košice, 2015, 90 p., ISBN 978-80-553-2172-1
14. ŠPALDONOVÁ, D.: Numerical methods in Electrical Engineering – part 2: Analysis of Electromagnetic Field. 1st edition, TU Košice, 2015, 95 p., ISBN 978-80-553-2219-3

9.4. Other publications

Publication Type	Confereces		Other
	Foreign	Home	
Number	10	4	51

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