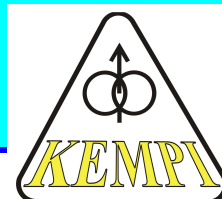


DEPARTMENT OF ELECTRICAL, MECHATRONIC AND INDUSTRIAL ENGINEERING

<http://www.kempi.fei.tuke.sk>

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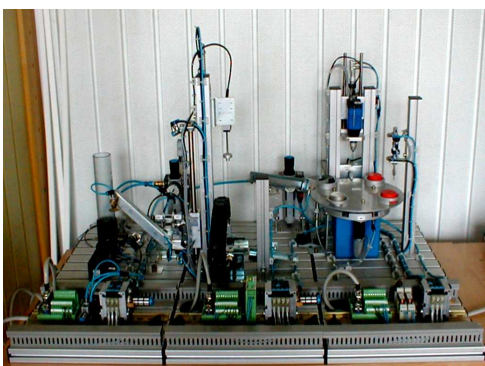
Head of Department
doc. Ing. Michal Girman, PhD.
E-mail: Michal.Girman@tuke.sk



1 DEPARTMENT'S PROFILE

The Department was established in 2005 from the previous units at the faculty: from Department of Electrical Drives and Mechatronics and from Laboratory of Industrial Engineering. The both units fused into the Department of Electrical, Mechatronic and Industrial Engineering.

The Department is responsible for education and research in electrical engineering in fields of power and industrial electronics, electrical machines and apparatuses, electromechanical systems, esp. in controlled drives, industrial and automotive mechatronic systems and in the area of effective production planning and control, quality management, and continuous improvement of products and services. The Department offers all types of university courses (bachelor in 3 branches, two master courses and two Ph.D. courses).



2 STAFF

Professors:

prof. Ing. Jaroslav Dudrik, PhD.
prof. Ing. Pavol Fedor, PhD.
prof. Ing. Irena Kováčová, PhD.
prof. Ing. Jaroslav Timko, CSc.
prof. Ing. Pavel Zásalický, PhD.

Associate Professors:

doc. Ing. František Ďurovský, PhD. (by June 2009)
doc. Ing. Viliam Fedák, PhD.
doc. Ing. Želmíra Ferková, PhD.
doc. Ing. Ján Fetyko, PhD. (till May 2009)
doc. Ing. Michal Girman, PhD.
doc. Ing. Michal Kostelný, CSc.
doc. Ing. Peter Kováčik, PhD. (till May 2009)
doc. Ing. Daniela Perduková, PhD.
doc. Ing. Jaroslava Žilková, PhD.

Assistant Professors:

Ing. Peter Bober, PhD.
Ing. Peter Girovský, PhD. (by June 2009)
Ing. Mgr. Peter Kmec, PhD.
Ing. Peter Košč, PhD.
Ing. Ján Kaňuch, PhD.
doc. Ing. Jozef Ondera, PhD. (till May 2009)

Assistants:

Ing. Jana Harvanová

Senior Scientists:

Ing. Peter Keusch
doc. Ing. Juraj Oetter, PhD. (till May 2009)
Ing. Peter Višnyi, PhD.
Peter Hajsák
Ing. Martin Olejár (by February to June 2009)
prof. Ing. Ladislav Zboray, CSc.

Technical Staff:

Ing. Gabriela Brečková
Zuzana Olexová
František Hajsák

Ph.D. Students:

Ing. František Baník
Ing. Tomáš Béreš (by September 2009)
Ing. Marcel Bodor (by September 2009)
Ing. Ľubomír Cibul'a (till September 2009)
Ing. Matúš Hric (by September 2009)
Ing. Michal Kaľavský (by September 2009)
Ing. Karol Kyslan (by September 2009)
Ing. Milan Lacko
Ing. Ľubomír Matis
Ing. Peter Nguyen (by September 2009)
Ing. Vladimír Ruščin (till July 2009)

3 EQUIPMENT

3.1. Teaching and Research Laboratories

- Laboratories of Electrical Engineering
- Power Electronics Laboratory
- Laboratory for CAD (COSMOS, ProEngineer, MATLAB, PSpice, and applied SW)
- Laboratory of Industrial Automation
- Laboratory of Electrical Machines
- Laboratory of Electrical Drives
- Laboratory of Controlled Electrical Drives and Mechatronics
- Laboratory of Process Modelling and Simulation
- Laboratory of Control Systems and Robotics

3.2. Special Measuring Instruments and Computers

Control Systems

- Modicon TSX Premium (Schneider Electric) incl. development SW (PL7 Pro V3.1), TELEMECANIQUE (TSX 07).
- OMRON - Sysmac Mini SK20, OMRON - Sysmac CQM 1
- Allen Bradley Programmable controller SLC 200 incl. development SW RS logic 500, Tech. Terminal AB PanelView 550 and converter AB 1305
- SIEMENS - SIMATIC S7-400 with SIMATIC NET CP for Industrial Ethernet, FM-458, SIMATIC S7-300 with PID Control Module and SIVAREX Weight Module, SIMATIC ET200M, SIMATIC Touch Panels.

Apparatus

- Logic Analyser PHILIPS
- Controlled electrical drives and converters
- DSP controlled AC drive
- DSP based dSpace DS1102 for Hardware in the Loop simulation
- IM control by SEW MOVIFIT
- AC motors control by SEW MOVIDRIVE MDX 61B
- IM motor control by SEW MOVITRAC
- 4-channel digital oscilloscope METRIX
- 4-channel oscilloscope TDS 5034B including TDSPWR3 power measurement and analysis software and probes
- 4-channel mixed signal digital phosphor oscilloscope MSO4034 including current and voltage differential probes
- Four channel power meter LMG 500

Converters

- AC Frequency Converter ABB ACS 600, 5,5 kW,
- AC Frequency Converters SIEMENS: SIMOVERT 6SE21, MicroMaster Junior, SIMOVERT 6SE70 Master drive, 6SE70 Master Drives - Motion Control 2-axes servodrive, SINAMICS S120, SINAMICS G110
- DC thyristor converters SIMOREG 6RA24 a 6RA70 DC Master (SIEMENS)
- Softstarter (ABB, Siemens)

Mechatronics systems

- Educational Robot Bioloid
- Physical model of production line
- Model of liquid reservoir
- Model of caster material reservoirs
- Model of flow rate control
- Model of crane and inverted pendulum
- Modular Production System from FESTO DIDACTIC (distribution, testing, and processing stations controlled by PLC)

Software

- ARIS tool for business process reengineering
- Cognos 8 Business Intelligence
- ELCAD for electrical engineering design
- Macromedia Director
- Matlab, Simulink, dSpace
- PS-8 project management software,
- PV 4 simulation software
- SIMPLE++ simulation software
- Arena simulation software
- CosmosEMS 3.0
- Pro/Engineer Wildfire
- CarSim and CarSim RT
- RT-Lab simulator for HIL
- SEW Movitools MotionStudio and SEW WorkBench

4 TEACHING

4.1. Undergraduate Study (Bc.)

a) Bc. study programme in Electrical Engineering

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

b) Bc. study programme in Automation of Mechatronic Systems

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Business and Management	1 th	2/0	Kmec
Industrial Electronics	2 nd	2/2	Kováčová
Microcontroller Techniques	3 th	2/2	Perduková
Computer Applications	3 th	2/2	Perduková
Electrical Machines	3 rd	2/2	Záskalický
Electrotechnics in Vehicles	3 th	2/2	Đurovský
Electrical Actuators and Drives	4 th	2/2	Žilková
ManMachine Interface	4 th	2/2	Perduková
CAE Programs	4 th	2/2	Fedák
Bachelor Thesis I.	5 th	0/8	Perduková
Industrial Control Systems	5 th	2/2	Fedor
Sensors and measurement of non electrical values	5 th	2/2	Fedor
Pneumatic nad Hydraulic Drives	5 th	2/2	Bober
Automotive Mechatronics	5 th	2/2	Đurovský
Bachelor Thesis II.	6 th	0/8	Perduková
Motion Control	6 th	2/2	Đurovský
Projecting of Electrical Systems	6 th	2/2	Ferková
Technical Practice	6 th	0/6	Perduková

c) Bc. study programme in Industrial Engineering

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Business and Management	1 th	2/0	Kmec
Information Systems in Industry	2 nd	2/2	Košč
Industrial Electronics	2 nd	2/2	Kováčová
Electrical Machines	3 rd	3/3	Záskalický
Human Resource Management	3 th	2/2	Košč
Pneumatic and Hydraulis Drive	3 th	2/2	Bober
Microcomputer Techniques	3 th	2/2	Perduková
Electrical Actuators and Drives	4 th	3/3	Žilková
Simulation of Production Systems	4 th	2/2	Bober
Man-Machine Interface	4 th	2/2	Perduková
Production Quality	5 th	2/2	Girman
Design of Electrical Systems	5 th	2/2	Záskalický
Electrotechnics in Vehicles	5 th	2/2	Đurovský
Matlab and its Applications	6 th	2/2	Fedák
Bachelor Thesis	6 th	0/4	supervisor

4.2. Graduate Study (Ing.)

a) Ing. study programme in Electrical Engineering

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Power Semiconductor Systems	7 th	2/2	Dudrik
Applied Electronics	7 th	2/2	Kováčová
Dynamic Effect of Electrical Machines	7 th	2/2	Záskalický
Technology of Production in Electronic	7 th	2/2	Slosarčík
Enterprise Control Management	7 th	2/2	Girman
Control Management	7 th	2/2	Kmec
Electromagnetic Compatibility	8 th	2/2	Kováčová
Electrical Machines for Automatisisation	8 th	2/2	Ferková
Semiconductor Converters Construction	8 th	2/2	Dudrik
Control of Assembly Lines with Programming Controllers	8 th	2/2	Fedor
Statistic Control of Process	8 th	2/2	Girman
Semester Project	8 th	0/4	supervisor
Databases Systems	8 th	2/2	
Artificial Intelligence Methods in Control	9 th	2/2	Žilková
Three-Dimensional modelling and Simulation	9 th	2/2	Ferková
Signal Processors	9 th	2/2	Višnyi
Electro Energetic			Kolcun
Servosystems	9 th	2/2	Ďurovský
Technology of Production in Electrotechnics	9 th	2/2	Girman
Diploma Thesis	9 th	0/12	supervisor

b) Ing. study programme in Automation of Mechatronic Systems

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

c) Ing. study programme in Industrial Engineering

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Power Semiconductor Systems	7 th	2/2	Dudrik
Technology of Production in Electrotechnics	7 th	2/2	Kostelný
Statistical Process Control	7 th	2/2	Bober
Management of Enterprise Processes	7 th	2/2	Girman
Project Management	8 th	2/2	Kmec
Electrical Machines for Automatization	8 th	2/2	Ferková
Control of Assembly Lines with Prog. Controllers	8 th	2/2	Fedor
Web Application	8 th	2/2	Košč
Semester Project	8 th	0/4	
Modelling, Simulation and Optimisation of Processes	9 th	2/2	Girman
Diploma Thesis	9 th	0/12	supervisor

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

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

4.4. Ph.D Postgraduate Course in Electrical Engineering

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

Ph.D Postgraduate Course in Mechatronic Systems

Subject	Semester	Lectures/exercises (hours per week)	Lecturer
Theory of Mechatronic Systems	1 st	2/0	Fedor

Ph.D Project I	1 st	0/2	supervisor
Foreign Language I	1 st	2/0	Dept. of Foreign Languages
Servosystems	2 nd	2/0	Fedor
Ph.D Project II	2 nd	0/2	supervisor
Foreign Language II	2 nd	2/0	Dept. of Foreign Languages
Ph.D Project III	3 rd	0/4	Supervisor
Subject of specialization	3 rd	2/0	according to the subject
Scientific activity	3 rd	0/8	Supervisor
Ph.D Project IV	4 th	0/2	Supervisor
Scientific activity	4 th	0/8	Supervisor
Ph.D Project IV	5 th	0/2	Supervisor
Scientific activity	5 th	0/8	Supervisor
Ph.D Thesis	5 th	0/9	Supervisor

5 RESEARCH PROJECTS

- *Analysis and quality quantification of building construction projects from EMC aspect.* VEGA (Scientific Grant Agency) project No 1/4174/07, (01/2007 - 12/2009). Co-ordinator: KOVÁČOVÁ, I.
- *Modern Methods of the Electrical Drives Control.* VEGA (Scientific Grant Agency) project No 1/4076/07 (2007 - 2009). Co-ordinator: TIMKO, J.
- *Research of New Generation High Frequency Soft Switching Converters.* APVV project No. APVV -0095-07 (2008-2010). Project contractor: FEI TU Košice. Co-ordinator: DUDRIK, J.
- *New Circuit Breaker up to 63 A and Equipments for Breaker Hourly Tests .* APVV project No. APVV -0287-07 (2008-2010). Project contractor: SEZ Krompachy, co-operation FEI TU Košice. Co-ordinator: DUDRIK, J.
- *Research of behaviour of the small electrical motor by a non harmonic supply;* APVV project No: APVV 0510-06 (2007-2010), Co-ordinator, ZÁSKALICKÝ, P.
- *Research of power semiconductor converters for industrial and electric utility applications.* VEGA (Scientific Grant Agency) project No 1/0099/09 (2009-2011). Co-ordinator: DUDRIK, J.
- *Centre of excellence of power electronics systems and materials for their components.* Code ITMS: 26220120003, (05/2009 - 04/2011) The project is funded by European Community, ERDF – European regional development fund. Project contractor: University of Žilina, co-operation FEI TU Košice. Co-ordinator: DUDRIK, J.
- *Structural Funds Projects of the EU. Low power static supply development for electrical systems,* 2010-2011, SF EU, ITMS 26220220029, Project co-ordinator: FEDOR, P.

6 CO-OPERATION

6.1. Co-operation in Slovakia

The Department co-operates with many industrial enterprises in Slovakia having joint project at modernising of the electrical drive systems, control and mechatronic

applications: U.S.STEEL Košice, SIEMENS, ABB, BSH Drives and Pumps Michalovce, Křižík Prešov, Schneider Electric Slovakia, Spell Procont Prešov, Spinea Prešov, Vonsch Brezno, Kybernetika Košice, TEK O Košice, ENERGO CONTROL Košice, ZŤS VVU Košice, ŽP Podbrezová, Bukóza Hencovce, Genesis Prešov, Embraco Slovakia Spišská Nová Ves, Kopex Košice, Cogent Košice, Regada Prešov, Slovak Union for Quality, Innovation and Design Q-IMPULZ, Košice, SEZ Krompachy, STAPRO 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 Vaasa, Finland
- University of Technology and Economy, Budapest, Hungary
- University of Miskolc, Hungary
- Delft University of Technology, The Netherlands
- Warsaw University of Technology, Poland
- Czech Academy of Science, Prague.
- Silesian Polytechnic Institute of Gliwice
- Transilvania University of Brasov, Romania
- University of Oradea, Romania

6.2.1. Visits of Staff Members to Foreign Institutions

- FEDÁK, V. – FETYKO, J.: Hungary, Miskolc, 19 - 20. March 2009, (*microCAD 2009 International Conference*)
- FEDÁK, V. – DUDRIK J.: Croatia, Dubrovnik, 10 - 15 Oct. 2009 (*15th International and 3rd Croatian-Slovak Conference on Electrical Drives and Power Electronics*)
- FERKOVÁ, Ž., KAŇUCH, J.: Czech Republic, Ostrava, 13 – 15 Jan. 2009, VŠB TU Ostrava
- KAŇUCH, J., ZÁSKALICKÝ, P.: Poland, Rzeszów – Krasiczyn, 23 – 26 June 2009, XLV International Symposium on electrical Machines - SME 2009
- KOSTELNÝ, M., KAŇUCH J., ZÁSKALICKÝ P.: Czech Republic, Brno, 15 – 17 Sept. 2009, VÚT Brno
- FERKOVÁ, Ž., ZÁSKALICKÝ, P.: Czech Republic, Brno, 2 – 3 Nov. 2009, VÚT Brno
- KAŇUCH, J.: Poland, Zakopane, 12. – 14. Nov. 2009, Conference System Modelling and Control - SMC'2009.
- ZÁSKALICKÝ, P.: Ústav pro elektrotechniku ČSAV, 17.9.-21.9.2009

6.3. Membership in International Organizations, Societies and Committees

- DUDRIK, J. – IEEE member
- DUDRIK, J. – International Conference on ELECTRICAL DRIVES and POWER ELECTRONICS, Dubrovnik, Croatia, 2009. Member of the International Steering Committee.
- DUDRIK, J.: Member of the steering committee International Conference on

Engineering of Modern Electric Systems, EMES 09, Oradea, Romania, (Section Electronics).

- DUDRIK, J., FEDÁK, V., FETYKO, J., TIMKO, J.: *Power Electronics and Motion Control Council EPE-PEMC – Budapest*. Council members.
- FEDÁK, V.: *EPE – European Power Electronics and Drives Association*, Brussels. Executive Council member, General Assembly member.

Members of the Programme and Steering Committees of the International Conferences

- FEDÁK, V.: 15th International Conference on Electrical Drives and Power Electronics, EDPE 2009 Dubrovnik. Conference general co-chairman.
- FEDÁK, V.: 7th *Int. Conference on Emerging eLearning Technologies and Applications*, ICETA 2007, The High Tatras. Programme committee chairman.
- FEDÁK, V. IEEE Transactions of Industry Electronics, Reviewer.
- DUDRIK, J., FEDÁK, V.: 10th International Conference on Engineering of Modern Electric Systems, EMES'2009 (27-29 May 2009, Oradea). Steering committee members.

6.4. Membership in Slovak Professional Bodies

- TIMKO, J. (Vice-chairman); FEDÁK, V.; ZBORAY, L.; FEDOR, P. FETYKO J., DUDRIK J. - members of Joint Slovak Board for the Ph.D. Study in Electrical Engineering
- TIMKO, J. (chairman), FETYKO, J., GIRMAN, M., KOVÁČOVÁ, I., FEDOR, P., FEDÁK, V., DUDRIK, J.: members of board for the Ph.D. Study in Electrical Engineering at FEI TU Košice
- FERKOVÁ, Ž.: member of Technical Standards Commission on Electrical Machines in SR
- FEDÁK, V.; FETYKO, J.; KAŇUCH, J.; ONDERA, J.; TIMKO, J.; ZÁSKALICKÝ, P.; ZBORAY, L.: members of The SES (Slovak Electrotechnical Society), Branch at FEI TU Košice
- FEDÁK, V.: Council of the Secondary Technical School for EE, Košice (delegate of the FEI TU Košice)

6.5. Editorial Boards

- BOBER, P. *Editorial board for journal „Kvalita, Inovácia, Prosperita“ (Quality, Innovation, Prosperity), ISSN 1335-1745*
- DUDRIK, J. – Annals of the Academy of Romanian Scientists. Series of Technical Sciences. Member of the Series Editorial Board.
- ZÁSKALICKÝ, P.: *Journal KOMEL, Editorial board for journal Maszyny elektryczne; Sience commitee, Poland.*
- ZÁSKALICKÝ, P.: *Editorial board for journal ACTA Technica CSAV.*

6.6. Contracts, International Projects

- SOCRATES Program: Higher education (ERASMUS), SOCRATES project, partner: University of Vaasa (Finland), duration: 2003 - 2009, contact at department BOBER, P., activity: Co-operation within the SOCRATES Program - students and teachers exchange program.
- SOCRATES Program: Higher education (ERASMUS), SOCRATES project, partner: University of Vaasa (Finland), duration: 2003 - 2009, contact at

department BOBER, P., activity: Co-operation within the SOCRATES Program - students and teachers exchange program.

- SOCRATES Program: Higher education (ERASMUS), SOCRATES project, partner: University of Oradea (Romania), duration: 2006 – 2010 contact: DUDRIK, J., activity: Co-operation within the SOCRATES Program - students and teachers exchange program.

6.7. National Educational Projects

- *Virtual Laboratory of Mechatronic Systems Control*, 2007-2009, KEGA, No 3/5240/07. Project co-ordinator: ĎUROVSKÝ, F.
- *E-learning multimedial education of the subject – Electromagnetic compatibility*, 2008-10, KEGA, No 3/6388/08. Project co-ordinator: KOVÁČOVÁ, I.

7 THESES

7.1 PhD. Theses

1. CIBULÁ, Ľ.: Direct torque control of the asynchronous motor with the help of fuzzy. Supervisor: ŽILKOVÁ, J.
2. GIROVSKÝ, P.: Application of artificial neural network in vector control of induction motor. Supervisor: TIMKO, J.
3. RUŠČIN, V.: High frequency soft switching DC-DC converter with controlled output rectifier. Supervisor: DUDRIK, J.

8. OTHER ACTIVITIES

8.1. Symposia, Workshops, Conferences

- 15th International and 3rd Croatian-Slovak Conference on Electrical Drives and Power Electronics, Dubrovnik, 10- 15 Oct. 2009. Our department played a role of the conference co-organisers there.
- STRAPING'09: Seminar and Meeting of Industrial Engineers, May 15-17, 2009, Herľany, Slovakia
- *High-Tech Workshop, Herľany 2008* (May 29 -31, 2009). High-Tech (as the abbreviation of High-Technology) presents an engineering workshop aimed to the informal exchange of ideas of teachers, students, graduates and colleagues from practise in the Educational and Training Centre of Technical University of Košice in Herľany (www.gejzir.sk). Organiser: Perduková D. More information about this activity is to be found in www.tuke.sk/hth.

8.2. Projects for Industry

- 1 Repair of control panels in the control room of MPO1 at OC2 (U.S.Steel Košice, s.r.o.), P/104/0018/08, 2008-2009. Co-ordinator: KANUCH, J.
- 2 Training on SIEMENS Power Converters (SIEMENS Slovakia), P/104/0012/09, P/104/0016/09 Co-ordinator: ĎUROVSKÝ, F.

9. PUBLICATIONS

9.1 Books

1. FERKOVÁ Ž.,- ĎUROVSKÝ F.,- ZBORAY L.: Application of Genetic Algorithm in Electrical Drives. TU FEI v Košiciach, 2009, ISBN 978-80-553-0321-5. (in Slovak).
2. KOVÁČ, D. - KOVÁČOVÁ, I. - MOLNÁR, J.: Electromagnetic Compatibility – measurements. TU, FEI, pp. 72, 2009, ISBN 978-80-553-0151-8. (in Slovak).
3. KOVÁČ, D. - KOVÁČOVÁ, I.: EMC a stavebníctvo, vydavateľstvo TU, FEI, pp. 90, 2009, ISBN 978-80-553-0317-8. (in Slovak).
4. KOVÁČOVÁ, I. - KOVÁČ, D. - VINCE, T.: Electromagnetic Compatibility. TU, FEI, pp. 138, 2009, ISBN 978-80-553-0150-1. (in Slovak).
5. TIMKO, J. - ŽILKOVÁ, J.. - GIROVSKÝ, P.: Simulation and Control of Electrical Drives by Neural Networks. 1. edition, Košice, TU, 2009. - 205 s. - ISBN 978-80-8086-124-7. (in Slovak).
6. TIMKO, J. - ŽILKOVÁ, J.. - DUDRIK, J.. - GIROVSKÝ, P.: Electrical Actuators and Drives. Košice. TU, FEI, 2009. 287 pp. ISBN 978-80-553-0168-6. (in Slovak).

9.2 Scientific Journals

Foreign Journals

1. GIRMAN, M., - KEUSCH, P.- KMEC, P.: Faults, failures and availability in self-service technology. Management Services, 2009, vol 53, No 4, pp. 44-47. ISSN 0-307-6768.
2. KAŇUCH, J., - VIŠNYI, P.: DC drive for universal motor. In: Maszyny elektryczne : Zeszyty problemowe. no. 84 (2009), p. 7-11. ISSN 0239-3646.
3. KOVÁČOVÁ, I. - KOVÁČ, D.: Parasitic Capacitances of Power Electrical Systems and EMC. Acta Technica CSAV, Vol. 54, No. 1, 2009, pp. 99-111, ISSN 0001-7043.
4. KOVÁČ, D. – KOVÁČOVÁ, I.: Galvanic Coupling - EMC of Electrical Systems (Part IV.), Journal of Electrical Engineering, Romania, Vol. 9, No. 2, 2009, pp. 32-37, ISSN 1582-4594.
5. KOVÁČ, D. - KOVÁČOVÁ, I. – TOMČÍKOVÁ, I.: Inductive Coupling of the Electrical Systems. Electrical Power Quality and Utilisation Journal. Vol. 15, No. 1, 2009, pp. 79-83, ISSN 1234-6799.
6. KOVÁČOVÁ, I. - KOVÁČ, D.: Inductive Coupling of Power Converter`s – EMC. Acta Polytechnica Hungarica, Vol. 6, No. 2., 2009, pp. 41-53, ISSN 1785-8860.
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