# DEPARTMENT OF ELECTRICAL DRIVES AND MECHATRONICS

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**Head of Department**
**doc. Ing. Jozef Fedor, CSc.**
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## 1 DEPARTMENT'S PROFILE

The Department is responsible for education and research in electrical engineering in fields of power and industrial electronics, electrical machines and apparatus, controlled electrical drives and electromechanical systems, in automation of electrical equipment and in mechatronic systems. The Department offers both types of undergraduate courses (master and bachelor courses) as well as the Ph.D. postgraduate course.

## 2 STAFF

**Professors:** prof. Ing. Jaroslav Timko, CSc.
prof. Ing. Ladislav Zboray, CSc.




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| **Associate Professors:** | doc. Ing. Jaroslav Dudrík, CSc.<br>doc. Ing. Viliam Fedák, CSc.<br>doc. Ing. Jozef Fedor, CSc.<br>doc. Ing. Pavol Fedor, CSc.<br>doc. Ing. Ján Fetyko, PhD.<br>doc. Ing. Michal Kostelný, CSc.<br>doc. Ing. Irena Kováčová, CSc.<br>doc. Ing. Pavel Záskalický, PhD. | |
| **Assistant Professors**: | Ing. František Ďurovský, CSc.<br>Ing. Želmíra Ferková, CSc.<br>Ing. Bartolomej Fedor, CSc.<br>Ing. Rastislav Harčarufka<br>Ing. Vladislav Maxim, CSc.<br>Ing. Daniela Perduková, CSc. | Ing. Stanislav Fedor<br>Ing. Ján Kaňuch<br>Ing. Juraj Németh<br>Ing. Jaroslava Žilková<br>Ing. Peter Dzurko |
| **Senior Scientists:** | Ing. Katarína Harčarufková<br>Ing. Peter Višnyi, CSc. | Ing. Emanuel Hutník |
| **Technical Staff:** | Katarína Gočová<br>Ing. Vasiľ Graban | Alena Jakabová<br>Zuzana Olexová |
| **PhD. Students:** | Ing. Ladislav Balara<br>Ing. Stanislav Kron<br>Ing. Branislav Zumrík | Ing. Slavomír Seman<br>Ing. Vladimír Slanina |

## 3 EQUIPMENT

### 3.1. Teaching and Research Laboratories

- two laboratories for teaching of general electrical engineering subjects,
- three specialized laboratories for power electronics, one for electronics,
- three computer laboratories for CAD design and simulation in electrical drives, power electronics and electrical machines (ANSYS, MATLAB, PSpice, and other programs),
- two specialized laboratories for electrical drives and servosystems based on industrial systems,
- three specialized laboratories for electrical machines and apparatus.

### 3.2. Special Measuring Instruments and Equipment

Control Systems

- Modicon TSX Premium (Schneider Electric) incl. development SW (PL7 Pro V3.1)
- MRON – Sysmac Mini SK20
- OMRON – Sysmac CQM 1
- Allen Bradley Programmable controller SLC 200 incl. development SW RS logix 500, Tech. Terminal AB PanelView 550 and converter AB 1305

Apparatus

- Logic Analyser PHILIPS

- DOMINOPUTER – teaching kit

Converters

- Frequency Converter ABB ACS 140, 5,5 kW
- DC Converters SIEMENS: SIMOREG 6RA24, 6RA70
- AC Converters SIEMENS: SIMOVERT 6SE21, MicroMaster Junior, SIMOVERT 6SE70

## 4 TEACHING

### 4.1. Undergraduate Study (Bc.)

| Subject | Semester | Lectures/exercises (hours per week) | Name of lecturer |
|---|---|---|---|
| Technical Documentation in El. Engineering | 1st | 2/1 | Ďurovský |
| Electrical Machines | 3rd | 3/3 | Kostelný |
| Power Electronics I. | 3rd | 3/3 | Dudrík |
| Digital Control Techniques | 3rd | 2/3 | Fedor, P. , Fedor, S. |
| Applied SW in Electrical Engineering | 3rd | 1/3 | Dudrík, Fedák |
| Electrical Machines and Apparatus | 4th | 3/3 | Kostelný, Fedor, J. |
| Power Electronics II. | 4th | 3/3 | Dudrík |
| Automation of Electrical Equipment | 4th | 3/3 | Fedor, P. |
| Electrical Drives | 4th | 3/3 | Timko |
| Automated Electrical Drives I. | 5th | 3/3 | Fetyko |
| Power Semiconductor Systems I. | 5th | 3/3 | Ondera |
| Control Systems in Power Electronics | 5th | 2/2 | Dudrík, Višnyi |
| Electrical Equipment for Vehicles | 5th | 2/2 | Ďurovský |
| Robots and Manipulators | 5th | 2/2 | Fetyko |
| Automated Electrical Drives II. | 6th | 3/3 | Fetyko |
| Power Semiconductor Systems II. | 6th | 3/3 | Ondera |
| Design of Electrical Drives | 6th | 2/2 | Maxim |
| Industrial Drives | 6th | 2/2 | Ďurovský |
| Fundamentals of Mechatronics | 6th | 2/3 | Fetyko |

### 4.2. Graduate Study (Ing.)

| Subject | Semester | Lectures/exercises (hours per week) | Name of lecturer |
|---|---|---|---|
| Electrical Machines I. | 5th | 3/3 | Kostelný |
| Components of Digital Control Systems | 5th | 2/2 | Fedor, P. , Perduková |

| Subject | Semester | Lectures/exercises (hours per week) | Name of lecturer |
|---|---|---|---|
| Electromechanical Systems | 5th | 2/2 | Fedák, Fetyko |
| Power Electronics | 6th | 3/3 | Dudrík |
| Electrical Apparatus | 6th | 3/2 | Fedor, J. |
| Electrical Machines II. | 6th | 3/3 | Kostelný |
| Control Systems Software | 6th | 2/3 | Fedor, P. |
| Mechatronics Fundamentals | 6th | 2/3 | Fetyko |
| Electrical Drives | 7th | 3/3 | Timko |
| Automation of Electrical Equipment | 7th | 3/3 | Fedor, P. |
| State Control of Electrical Drives | 7th | 2/3 | Zboray |
| Industrial Systems Identification | 7th | 2/3 | Fedák |
| Control Circuits for Power Electronics | 7th | 2/3 | Dudrík, Višnyi |
| Computer Aided Design | 7th | 2/3 | Záskalický |
| Electrical Machines Design | 7th | 3/2 | Ferková |
| Electrical Equipment for the Vehicles | 7th | 2/2 | Ďurovský |
| Applied SW in Electrical Engineering | 7th | 1/3 | Dudrík, Fedák |
| User Interfaces in Control Systems | 7th | 2/2 | Fedor, P. - Perduková |
| Controlled Drives | 8th | 3/3 | Zboray |
| Electrical Apparatus Construction | 8th | 2/3 | Fedor, J. |
| Electrical Drives Design | 8th | 2/3 | Maxim |
| Complex Drive Systems | 8th | 2/3 | Fedák |
| Control Systems for Electrical Drives | 8th | 2/3 | Fedor, P. |
| Power Semiconductor Converters | 8th | 2/3 | Ondera |
| Computer Aided Design | 8th | 0/2 | Fedor, S. |
| Control Electronics Laboratory Practice | 8th | 0/2 | Fedor, S. |
| Master Thesis Workshop | 9th | 0/5 | supervisor |
| Special El. Machines and Apparatus | 9th | 3/2 | Kostelný, Fedor, J. |
| Semiconductor Converters Applications | 9th | 2/3 | Ondera |
| Control Systems of Technological Lines | 9th | 2/3 | Fedor, P. |
| Control of Robots and Manipulators | 9th | 2/3 | Fetyko |
| Industrial Drives | 9th | 2/3 | Fetyko, Ďurovský |
| Digital Control of Converters | 9th | 2/2 | Višnyi |

| Subject | Semester | Lectures/exercises (hours per week) | Name of lecturer |
|---|---|---|---|
| Neural and Fuzzy Control of El. Drives | 9th | 2/2 | Timko |
| Master Thesis (Diploma Work) | 10th | 0/8 | supervisor |

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

| Subject | Lectures/exercises (hours per week) | Name of lecturer |
|---|---|---|
| Electrical Machines I. | 3/3 | Záskalický |
| Electromechanical Systems | 2/2 | Fedák, Fetyko |
| Power Electronics | 3/3 | Dudrík |
| Electrical Apparatus | 3/2 | Fedor J. |
| Electrical Machines II. | 3/3 | Záskalický |
| Mechatronics Fundamentals | 2/3 | Fetyko |
| Electrical Drives | 3/3 | Fedák |
| Automation of Electrical Equipment | 3/3 | Fedor, P. - Perduková |
| State Control of Electrical Drives | 2/3 | Zboray |
| Industrial Systems Identification | 2/3 | Fedák |
| Control Circuits for Power Electronics | 2/3 | Dudrík, Višnyi |
| Electrical Equipment for the Vehicles | 2/2 | Ďurovský |
| Applied SW in Electrical Engineering | 1/3 | Dudrík, Fedák |
| Controlled Drives | 3/3 | Zboray |
| Complex Drive Systems | 2/3 | Fedák |
| Power Semiconductor Converters | 2/3 | Dudrík |
| Master Thesis Workshop | 0/5 | supervisor |
| Semiconductor Converters Applications | 2/3 | Dudrík |
| Control of Robots and Manipulators | 2/3 | Fetyko |
| Industrial Drives | 2/3 | Fetyko, Ďurovský |
| Master Thesis (Diploma Work) | 0/8 | supervisor |

## 5 RESEARCH PROJECTS

- *Application of Artificial Neural Networks and Fuzzy Logic in the Control of Industrial Plants*, Scientific Grant Agency project (S.G.A.) No. 1/6253/99
- *Power High-frequency Indirect Converters with Soft Switching*, S.G.A. project No. 1/6110/99
- *Modern Methods of Analysis and Synthesis for Multi-motor Mechatronic Systems*, S.G.A. project No. 1/6056/99
- *Compensation and Activation of Centrifugal Forces in Vibration Equipment using Electrical Drive*, S.G.A. project No. 1/6052/99
- *Design of Reluctance Machines with Unsymmetrical Structures*, S.G.A. project

No. 5004/98

- *Robust Control of Electrical Drives*, Institutional project of FEI TU Košice No. 4422
- *Shape Memory Devices Used as Actuators in Relays and Circuit Breakers*, Institutional project of FEI TU Košice No. 4409
- *New Trends Application in Andragogic*, Institutional project of FEI TU Košice No. 4408

# 6 CO-OPERATION

## 6.1. Co-operation in Slovakia

The Department co-operates with many industrial enterprises in Slovakia having joint project at modernizing the electrical drives and control applications: STEEL Košice, SEZ Krompachy, BSH Drives and Pumps Michalovce, Regula Košice, Křižík Prešov, Spell Procont Prešov.

### 6.1.1. Visitors to the Department

Members of the ISC EPE-PEMC 2000 the Department visited on 15-16 February 2000:

- Dr. Roger Bassett, Alstom Research and Technology Centre, Stafford, United Kingdom
- Mrs. Brigitte Sneyers, EPE Association, Brussels, Belgium
- prof. Bernard Davat, E.N.S.E.M. - Nancy, France
- prof. Walter Schumacher, Technische Universität Braunschweig, Germany
- prof. István Nagy, Technical University of Budapest, Budapest, Hungary
- prof. Zděněk Čeřovský, Czech Technical University, Praha, Czech Republic
- prof. Drago Ban, Svuečilište u Zagrebu, Croatia
- prof. Sándor Halász, Technical University of Budapest, Hungary
- prof. Jiří Pavelka, Czech Technical University, Praha, Czech Republic
- prof. Nedjeljko Perić, University of Zagreb, Croatia
- Dr. Péter Magyar, D-Tech. GmbH, Bielefeld, Germany
- prof. J. M. Pacas, Universität Gesamthochschule Siegen, Germany
- Dr. Tamás Ruzsányi, Ganz Ansaldo Electric Ltd. - Budapest, Hungary
- prof. Helmut Weiss, Montanuniversiät Leoben, Austria
- prof. Sigitas Kudarauskas, Klapeida University, Lithuania – 15 May 2000
- prof. Adrian Viorel, University of Cluj-Napoca, Romania – 5 September 2000
- prof. Vladimir Katić, University of Novi Sad, Yugoslavia – 6 September 2000
- prof. Ralph Kennel, Wuppertal University, Germany – 7 September 2000

## 6.2. International Co-operation

Co-operation in the international project Training in Electrical Engineering for Industry Automation – ELINA, (Leonardo da Vinci Program, SK/98/2/0538/PI/II.1.1.c/CONT) on Courses in EE for Industrial Automation with National Technical University of Athens, ENSEM Nancy, Delft University of Technology, Simulation Research – Aalphen an den Rijn, and Brno Technical University.

The department maintains intensive contacts with universities co-operating in previous international projects: University of Miskolc, Napier University of Edinburgh, Politecnico di Torino, Universidad Politecnica de Valencia.

### 6.2.1. Visits of Staff Members to Foreign Institutions

- Michal Kostelný, Pavol Záskalický: Pilsen, Symposium of Electrical Machines Teachers, 25-27 January 2000,
- Viliam Fedák: Brussels, Info Days in Framework of the Leonardo da Vinci Program, 26-29 January 2000
- Viliam Fedák: Vrije Universität Brussel, Joint Co-ordinator Council TELEHUMAN Meeting + Executive Council EPE Association, 24-29 February 2001
- Stanislav Kron: Otto von Guericke University Magdeburg, Study stay, March-July 2000
- Peter Dzurko: ENSEM Nancy, Study stay, 5 April – 5 July 2000
- Vladimír Slanina: Visit of EE companies (excursion with students) in Czech Republic and Austria, 11-12 April 2000, Ján Fetyko, Slavomír Seman
- Viliam Fedák: Brasov, OPTIM 2000 International Conference, 10-15 May 2000
- Viliam Fedák: Industrial Development and Education Centre, IDEC Piraeus, Joint Co-ordinator Council TELEHUMAN Meeting + visit to the NTUA, 23-29 June 2000
- Vladimír Slanina: University of Budapest, Study stay, 15 June – 14 July 2000
- Danka Perduková: Brussels, Study stay, 24 June – 9 July 2000
- Jozef Ondera: Ostrava, International Competition of Students' Works, 19-22 June
- Pavol Záskalický: Praha, Int. Conference on Electrical Machines, 18-20 September 2000
- Rastislav Harčarufka: Island, Leonardo da Vinci meeting, 26-29 October 2000
- Irena Kováčová: Dubrovnik, Int. Conference on Electrical Drives and Power Electronics, 8-12 October 2000
- Viliam Fedák: National Technical University of Athens, Joint Co-ordinator Board ELINA Meeting, 26 Oct. – 2 Nov. 2000
- Viliam Fedák: Brussels, Training 2000, Exhibition and Contact Seminar Leonardo da Vinci, 2 – 7 December 2000

## 6.3. Membership in International Organizations, Societies and Committees

- Viliam Fedák: Executive Council member of EPE General Assembly member EPEA (European Power Electronics and Drives Association - Brussels)
- Viliam Fedák, Jaroslav Timko: Committee members of EPE-PEMC-C (Power Electronics and Motion Control Council - Budapest)

**Members of the Program and Steering Committees of the International Conferences**

- Viliam Fedák (General Chairman), Ján Fetyko (Program Committee Chairman), Jaroslav Dudrík, Jozef Fedor, Michal Kostelný, Jaroslav Timko: Committee members of 9th International Conference EPE-PEMC 2000 Conference

### 6.4. Membership in Slovak Organizations and Societies

- Jaroslav Timko (Vice-chairman), Viliam Fedák, Jozef Fedor, Ladislav Zboray – members of Joint Slovak Board for the Ph.D. Study in Electrical Engineering
- Želmíra Ferková – member of Technical Standards Commission on Electrical Machines
- Jozef Fedor, Working Group member of Accreditation Committee at Ministry of Education of SR
- Viliam Fedák, Jozef Fedor, Ján Fetyko, Ján Kaňuch, Jozef Ondera, Jaroslav Timko, Pavel Záskalický, Ladislav Zboray - members of SES (Slovak Electrotechnic Society)

### 6.5. Contracts, International Projects

Co-ordinator and Contractor in the Leonardo da Vinci project *Training in Electrical Engineering for Industry Automation – ELINA,* (SK/98/2/0538/PI/II.1.1.c/CONT).

Staff members are involved in the following international projects:
- Leonardo da Vinci SK/98/1/84002/PI/I.1.1.a - PROQUA
- Leonardo da Vinci SK/98/1/84012/PI/III.1.a/FPI - ESPESIT
- TEMPUS Phare IB_JEP-13423-98 - PATRISEA
- SOCRATES ODL Observation Project No. 56619-CP-1-IT-ODL-ODL - MOISE
- Tempus Phare IB_JEP- 14168-1999 - TRUE
- Leonardo da Vinci Project - FACE
- Leonardo da Vinci Project - CEEWIT
- Leonardo da Vinci Project - EXPO
- Leonardo da Vinci Project - EDUCRATOS
- Project I2DV – Internet innovation of distance learning

## 7 THESES

### 7.1. Masters Theses

1. Adorján, Š.: Thermal Overcurrent Release based on the Metal with Shape Memory (Fedor, J.)
2. Beňatinský, J.: Two-Pole Synchronous Motor with Permanent Magnet (Záskalický, P.)
3. Fabian, R.: Design of 3-wheel High Lift Truck (Ďurovský, F.)
4. Ferkaľ, M.: Design of a part of Technological Line with Control of Air Flow (Fedor, S.)
5. Ficek, J.: Control of a Liquid Storage by a Programmable Controller SYSMAC OMRON and Visualization System CONTROL PANEL (Harčarufka, R. – Zagata, D.)
6. Gašpár, L.: Multi-function Non-interruptible Supply Source for Teaching Purpose (Ondera, J. – Višnyi, P.)
7. Hičár, M.: Robust Control of Drive for Crane Trolley (Zboray, L.)
8. Hlodák, F.: Control of Multi-mass Electromechanical Systems with Elastic Coupling (Fedák, V.)
9. Horanský, K.: Supervisor Control of a Combined Dividing Line (Harčarufka, R. – Zagata, D.)

10. Horniak, J.: Design and Construction of a Rectifier with Improved Power Factor (Ondera, J.)
11. Chobor, R.: Robust Control of DC Drive (Zboray, L. – Balara, L.)
12. Ihnát, M.: Fuzzy Control of a Drive with AM (Fedor, P.)
13. Janočko, I.: Design of Controller for Drive of Sheet Storage in the Tin-plated Line in the VSŽ Company (Timko, J. – Gula, J.)
14. Kovaľ, P.: Feed Forward Control of Position Servodrive with State Feedback Control (Fetyko, J. – Takáč, T.)
15. Kudláč, F.: Modeling of a Controlled Drive with SM (Timko, J. – Žilková, J.)
16. Laubert, A.: Feed forward Control of Position Servodrive with a Conventional Feedback Control (Fetyko, J. – Takáč, T.)
17. Miko, L.: Influence of Pole Number of the SRM to Torque Pulsation (Ferková, Ž.)
18. Mikulec, I.: Design of One-phase Asynchronous Motor (Fedor, J.)
19. Nagy, V.: Control of a Frequency Converter by Microcomputer (Ďurovský, F. – Višnyi, P.)
20. Pančíková, I.: Modeling of Controlled Drive with AM and Rotor Resistance Identification (Timko, J. – Žilková, J.)
21. Pataky, P.: Reconstruction of Drives in a Combined Dividing Line (Harčarufka, R. – Zagata, D.)
22. Pavlík, M.: Controller with Two Degree of Freedom for Drive of the Rolling Mill (Fedák, V.)
23. Pavlovský, M.: Multi-purpose Impulse Generator for Power Semiconductor Converter (Dudrík, J. – Višnyi, P.)
24. Pohl, V.: Visualization of Principles of Electrical Machines Operation (Záskalický, P. – Németh, J.)
25. Ponická, M.: Control of Transport of Grinded Coal by a Programmable Controller (Fedor, P. – Borodáč, V.)
26. Protopopov, P.: Indirect DC Converter with PWM Control (Dudrík, J.)
27. Rapčan, P.: Source for Welding with High-frequency Converter (Dudrík, J. – Dzurko, P.)
28. Repko, Ľ.: Modeling of a Controlled Drive with Linear AM (Timko, J. – Žilková, J.)
29. Slabej, Š.: Educational Panel for Control of a combustion Engine (Ďurovský, F.)
30. Topoli, P.: SW for Multipurpose Impulse Generator (Dudrík, J. – Višnyi, P.)
31. Vraniak, V.: Control of a Starter for AM by Microcomputer (Ďurovský, F. – Višnyi, P.)

### 7.2. Doctoral Theses

## 8 OTHER ACTIVITIES

- *The 9th International Conference on Power Electronics and Motion Control, EPE-PEMC 2000* organized by the staff members was held on 5-7 September in Košice. The conference was promoted jointly by two largest associations in the fields in Europe: European Power Electronics and Motion Control Council and European Power Electronics and Drives association. IEEE IAS and national societies for electrical engineering sponsored the conference: SES, AEI, CES, MEE, and SEP. The conference was accompanied by an exhibition. Conference General Chairman: Viliam Fedák, Program Committee Chairman: Ján Fetyko. More than 370 participants from 55 countries of all continents took part there. Altogether 290 papers were read in 3 keynote sessions, 3 plenary sessions, 24 oral sessions and 3 dialogue sessions. The details are to be found in

http://www.tuke.sk/pemc .

- *High-Tech Workshop, Herľany 2000*
  High-Tech (as the abbreviation of High-Technology) is the engineering workshop aimed to unofficial exchange of ideas of teachers, students, graduates and colleagues from practice in the Learning and Training Centre of TU Košice in Herľany (www.gejzir.sk). This workshop - in year 2000 already 12th in order - is organized annually (mostly due the 1st May's weekend) and its program includes vocational, sporting and social parts with very interesting presentations and discussions, amusing sporting and other disciplines, camp-fire, camp-singing, etc.
  For more information about this action see www.tuke.sk/hth .

- *The 14th International Conference on Electrical Drives and Power Electronics, EDPE 2001* will be held on 3-5 October 2001. Details are to be found in http://www.tuke.sk/edpe .

## 9 PUBLICATIONS

### 9.1. Books

### 9.2. Journals

1. Perduková, D. - Fedor, P. - - Ferková, Ž.: Control of Central Part of a Continuous Line. AT&P Journal 11 2000. pp. 46-48 (in Slovak)
2. Balara, D. - Timko, J.: The State-Differential Method for Adaptation of Parametric Models. Acta Techn. CSAV 45, Institute of Electrical Engineering Acad. Sci. Czech Republic 2000. pp. 149-161.
3. Kažimír, P. - Fedor, P. - Perduková, D.: Control of Distribution of Lubrications by a Programmable Automate. AT&P Journal 10, 2000. pp. 13-14 (in Slovak)
4. Ferková, Ž. - Perduková, D. - Fedor, P.: Influence of Linearization to Torque Calculation of a Switched Reluctance Motor. Časopis EE, No 6, 2000. No 4, pp. 7-8 (in Slovak)

### 9.3. Textbooks

1. Šimko, V. - Kováč, D. - Kováčová, I.: Theoretical Electrotechnics I. Elfa, Košice 2000. ISBN 80-88964-34-2 (in Slovak)
2. Šimko, V. - Kováč, D. - Kováčová, I.: Theoretical Electrotechnics II. Elfa, Košice 2000. ISBN 80-88964-44-X (in Slovak)
3. Harčarufka, R. - Harčarufková, K. - Perduková, D. - Tomášek, M.: Technologies for Informatics. Textbook for continuous education, TU Košice 2000. ISBN 80-7099-490-8 (in Slovak)
4. Harčarufka, R. - Harčarufková, K. - Perduková, D.: Technologies for Informatics. Textbook for continuous education, TU Košice 2000 (in Slovak)

### 9.4. Conferences

1. Balara, L. - Zboray, L. - Fedák, V.: Robust Control of a Synchronous Motor with Permanent Magnets. Proceedings of the 7th International Conference on Optimization of Electrical and Electronic Equipments: Optim 2000. Brasov, May 11-12, 2000, pp. 615-618.

2. Harčarufka, R. - Harčarufková, K.: Some Methodology and Technology Aspects of Virtualization of Education (ViE). Proc. of the Int. Seminar on Virtual University, Bratislava, 6 July 2000, pp. 51-55.
3. Fetyko, J. - Kron, S.: Fuzzy Adaptive Feedback and Feed-forward Speed Controller for Tracking Control of Servo Drives. In: Proc. of 9th Int. Conf. on Power Electronics and Motion Control, EPE-PEMC 2000 Košice, pp. 178-183.
4. Balara, L. - Zboray, L.: Robust Control of an Asynchronous Motor. In: Proc. of 9th Int. Conf. on Power Electronics and Motion Control, EPE-PEMC 2000 Košice, pp. 24-28.
5. Balara, D. - Timko, J.: Identification of Induction Motor Parameters with Use of Neural Networks Taking into Account Main Flux Saturation Effect. In: Proc. of 9th Int. Conf. on Power Electronics and Motion Control, EPE-PEMC 2000 Košice, pp. 17-23.
6. Dzurko, P. - Dudrík, J. - Višnyi, P.: Behavior of Arc Welder with High Frequency Resonant Converter. In: Proc. of 9th Int. Conf. on Power Electronics and Motion Control, EPE-PEMC 2000 Košice, pp. 102-106.
7. Faiz, J. - Sharifian, B.B.M. - Fedák, V.: Minimization of Current Harmonics of DTC Controller Using a Suitable Switching Pattern. In: Proc. of 9th Int. Conf. on Power Electronics and Motion Control, EPE-PEMC 2000 Košice, pp. 161-166.
8. Dudrík, J. - Dzurko, P.: An Improved Soft Switching Phase-Shifted PWM Full-Bridge DC-DC Converter. In: Proc. of 9th Int. Conf. on Power Electronics and Motion Control, EPE-PEMC 2000 Košice, pp. 65-69.
9. Záskalický, P.: Behavior of the Single-Pulse Operation Switched Reluctance Motors. In: Proc. of Int. Conf. SME 2000, Wroclaw, pp. 246-250.
10. Kováč, D. - Kováčová, I.: Converter Electromagnetic Compatibility Investigation. In: Proc. of 9th Int. Conf. on Electrical Drives and Power Electronics, Dubrovník, 9-11 October 2000. pp. 55-57.
11. Balara, L.: Robust Control for a Class of Non-Linear Systems with Uncertain Parameters. In: Proc. of the MicroCad 2000 Int. Conf. - Miskolc, pp. 1-6.
12. Záskalický, P.: One-Phase Motor with Permanent Magnet. In: Proc. of the Int. Conference Mechatronika 2000. Kočovce, 14-16 June 2000. pp. 229-233 (in Slovak)
13. Zboray, L. - Balara, L.: Robust Control of Electrical Drive. In: Proc. of the Int. Seminar SYMEP 2000, Košice, pp. 1-4 (in Slovak)
14. Gula, J. - Timko, J.: Fuzzy Control of Electrical Drive for Tank of Sheets in Tin Coating line. In: Proc. of the Int. Seminar SYMEP 2000, Košice (in Slovak)
15. Pohl, V. - Németh, J.: Visualization of Principle of Operation of Electrical Machines. In: Proc. of the Int. Specialized Seminar SEKEL 2000, Praha, 18-20 September 2000 (in Slovak)
16. Németh, J.: Teaching of Subjects from „General Electrotechnics “ at KEPM FEI TU Košice. In: Proc. of the Int. Specialized Seminar SEKEL 2000, Praha, 18-20 September 2000 (in Slovak)