

**INSTITUTE OF CONTROL AND INDUSTRIAL INFORMATICS**

<http://www.urpi.fei.stuba.sk/>

**Director**

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**I. STAFF**

Professors	Prof. Ing. Mikuláš Huba, PhD., Prof. Ing. Ladislav Jurišica, PhD., Prof. Ing. Václav Kalaš, DrSc., Prof. Ing. Ján Murgaš, PhD., Prof. Ing. Vojtech Veselý, DrSc., Prof. Ing. Milan Žalman, PhD
Associate Professors	Doc. Ing. Igor Hantuch, PhD., Doc. Ing. Peter Hubinský, PhD., Doc. Ing. Zdenka Králová, PhD., Doc. Ing. Eva Miklovičová, PhD., Doc. Ing. Danica Rosinová, PhD., Doc. Ing. Ivan Sekaj, PhD., Doc. Ing. Ján Šturcel, PhD., Doc. Ing. Anton Vitko PhD. , Doc. Ing. Katarína Žáková, PhD.
Assistant Professors	Ing. Richard Balogh, Ing. Pavol Bisták, Ing. Jozef Dorner, Ing. Peter Drahoš, PhD., Ing. Mária Dúbravská, Ing. Jozef Dúbravský, Ing. Štefan Chamraz, PhD., Ing. Slavomír Kajan, PhD., Ing. Ján Kardoš, PhD., Ing. Alena Kozáková, PhD., Ing. Ladislav Körösi, Ing. Marián Mrosko, Ing. Ivan Oravec, PhD., Ing. Ľubica Šimová, PhD., Ing. Peter Ťapák, Ing. Miroslav Toman, PhD.
Research Workers	Ing. Igor Bélai, PhD., Ing. František Duchoň, Ing. Peter Fodrek, PhD., Ing. Martin Foltin, PhD., Ing. Miroslav Halás, PhD., Ing. Jaroslav Hanzel, PhD., Ing. Monika Hejdová, Ing. Mária Hypiusová, PhD., Ing. Marián Klúčik, Ing. Leo Mrafko, Ing. Jana Paulusová, Ing. Danica Sovišová, Ing. Jozef Vöröš, PhD.
Technical Staff	Peter Detvaj, Ing. Radoslav Dibarbora, Pavol Gašparovič, Katarína Horvathová, Katarína Macková (secretary), Jozef Turčaník

**II. EQUIPMENT**

**II.1 Teaching and Research Laboratories**

- Network Control Systems Laboratory
- Continuous Process Control Laboratory
- Optimization and Optimal Control Laboratory
- Multivariable Systems Laboratory
- Production Systems Modelling Laboratory
- Computational Intelligence Laboratory
- Actuators Laboratory
- Electronics Laboratory
- CACSD Laboratory
- Automation Means Laboratory
- Sensors Laboratory
- SIEMENS Automation Technology Laboratory
- Smart Servosystems Laboratory
- Servosystems Laboratory
- Industrial Automation Laboratory I
- Industrial Automation Laboratory II

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- Multimedial Laboratory
  - Nonlinear Systems Laboratory
  - Robot Control Laboratory
  - Mechatronics Laboratory
  - Mechatronics Laboratory
  - Robotics Laboratory II
  - Robotics Laboratory I
  - Special Systems Laboratory
  - Real-Time Programming Tools Laboratory
  - CAD Systems Laboratory
  - Flying Devices Laboratory
  - Control System Software Laboratory
  - Discreet Event Systems Laboratory

## **II.2 Special Measuring Instruments and Computers**

- Mechanical Setup Position Control Plant
- Laboratory Models: Inverted Pendulum, Crane, Helicopter Rack, Helicopter Model, Thermal Plant, Thermo-optical Model, Magnetic Levitation Syst., Two - Tank System, Three - Tank System
- Digital Signal Processor Board for Real-Time Control
- CALYS 5 Digital Meas. and Calibr. Device for Process Measurement of Temperature
- Multitron PS 10 – Motion Control System
- Intelligent Mobile Robot System
- D Spice DS 1104 developing system
- Programmable Controllers: MicroLogix, Honeywell, Modicon
- Distributed Control System Yokogawa Centum
- Programmable Controllers: Simatic S7-300, S7-200, UDC Honeywell, Modicon TSX Premium, Mocrlogix 1000, Allen Bradley
- Allen Bradley Motor Drives, FLEX IIO Modules, Panel View 900
- Production Line Models with: Crane, Conveyors, Manipulators
- Networked control system with CAN Bus & Ether CAT
- Transportation Model, Model for Ball Color Separation, Bouncing Ball Model, Tank Level Control Model, Magnetic Levitation Model, Helicopter Model, Railway Transfer Station Model
- Software: Matlab, MODES, Witness, LABREG, PROMOTIC, SAP ERP
- HMI Software - WinCC, WinCC Flexible, Protool
- Programming Software Step7 Professional
- Two DC motor experimental system
- Software Wonderware InTouch
- RsLogix5000, RsLogix500, SoftLogix,
- ControlNet, DeviceNet, EtherNet,
- Emulate500, Emulate5000, LogixArchitect, RsLinx
- RsSQL, RsTune, RSView Supervisory Edition
- HW: ControlLogix PLC, CompactLogix, HMI

## **III. TEACHING**

### **III.1 Undergraduate Study (Bc.)**

Subject, semester, hours per week for lectures and for seminars or practical exercises, name of the lecturer:

Introduction into Engineering	(1st sem., 2-2h)	L. Jurišica
Computer Architecture	(2nd sem., 3-2h)	R. Ravas, Š.
Chamraz		
Programming Systems for RT Control	(3rd sem., 3-2h)	L. Šimová,
I.Hantuch		
Automatic Control Theory 1	(3rd sem., 2-3h)	M. Huba
Applied Computational Intelligence	(4th sem., 2-2h)	I. Sekaj
Control System Software 1	(4th sem., 2-2h)	I. Hantuch,
L.Šimová		
Automatic Control Theory 2	(4th sem., 3-2h)	J. Murgaš
Design of Web Applications 1	(4th sem., 2-2h)	K. Žáková
Modelling and Simulation	(4th sem., 2-2h)	M. Foltín
Electronics for Control Systems	(4th sem., 2-2h)	M. Toman, J. Šturcel
Instrumentation of Control Systems	(4th sem., 3-2h)	J. Šturcel
Learning management systems	(4th sem., 2-2h)	M. Huba
Actuators	(5th sem., 2-3h)	M. Žalman
Software for Control Systems	(5th sem., 2-3h)	I. Hantuch, L. Korosi
Control Methods and Algorithms	(5th sem., 2-2h)	J.
Kardoš,P.Hubinský		
Optimization	(5th sem., 2-2h)	D. Rosinová
Basic of Control Systems	(5th sem., 2-2h)	P. Hubinský
Cybernetics	(5th sem., 2-2h)	J. Murgaš
Industrial Communication bus	(6th sem., 2-2h)	P. Drahoš, J. Šturcel
Industrial Communication Systems	(6th sem., 2-3h)	M.Žalman, I. Belai
Robotics	(6th sem., 3-2h)	P. Hubinský
Continuous Processes	(6th sem., 3-2h)	E. Miklovičová
Nonlinear systems	(6th sem., 3-2h)	M. Huba

### III.2 Graduate Study (Ing.)

CAD for Programming Contr.Syst.Developing	1 (1st sem., 3-2h)	I. Hantuch
Multimedia in Control	(1st sem., 3-2h)	M. Huba, P. Bisták
Optimal Control	(1st sem., 2-2h)	A. Kozáková
Servosystems	(1st sem., 3-2h)	M. Žalman
Smart Sensors Systems	(1st sem., 3-2h)	J. Šturcel
Theory of Automatic Control 3	(1st sem., 3-2h)	M. Huba
Flexible Manufacturing Systems	(1st sem., 3-2h)	L. Jurišica

Modeling and Simulation of Processes	(1th sem., 3-2h)	E. Miklovičová, Z. Králová
Advanced TAC 1	(1st sem., 2-2h)	V. Veselý
Internet and Intranet Applications	(1st sem., 2-3h)	K. Žáková
Multimedia	(1st sem., 2-3h)	M. Huba
Artificial Neural Nets	(1st sem., 3-2h)	I. Sekaj
Evolutionary Computing	(2nd sem., 2-3h)	I. Sekaj
Databases of Control Systems	(2nd sem., 2-3h)	Z. Králová
Intelligent Systems	(2nd sem., 3-2h)	I. Sekaj S. Kajan
Adaptive Control	(2nd sem., 3-2h)	J. Murgaš
Discrete Event Systems	(2nd sem., 3-2h)	A. Vitko
Fuzzy and Neural Controllers	(2nd sem., 2-2h)	I. Sekaj
Multivariable System Control	(2nd sem., 3-2h)	V. Veselý
Sensor Systems in CIM	(2nd sem., 3-2h)	M. Toman, J. Šturcel
System Identification	(2nd sem., 3-2h)	T. Švantnerová
Control of Complex Systems	(2nd sem., 2-2h)	D. Rosinová
Theory of VSC in Robotics	(3rd sem., 3-2h)	L. Jurišica, J. Kardoš
CAD for Programming Contr.Syst.Developing	2 (3rd sem., 3-2h)	I. Hantuch
Production Systems Modelling and Control	(3rd sem., 2-3h)	Z. Králová
Robots Modelling and Control	(3rd sem., 3-2h)	A. Vitko
Network Technologies	(3rd sem., 2-3h)	J. Murgaš, M. Foltin
Mobile Robotics Systems	(3rd sem., 3-2h)	L. Jurisica
Mechatronics	(3rd sem., 3-2h)	L. Jurisica
Intelligent Servosystems	(3rd sem., 3-2h)	M. Žalman
CAD of Control systems	(3rd sem., 2-2h)	P. Drahoš, J. Šturcel

### III.3 Undergraduate and Graduate Study for Foreign Students (in English Language)

Automatic Control Theory	(3rd sem., 1h consul.)	M. Huba
Software of Control Systems	(4th sem., 1h consul.)	I. Hantuch

### III.4 Undergraduate Study (Bc. Distance Education Method)

Algorithmisation and Programming	(1st sem.)	E. Šimová
Introduction into Engineering	(1st sem.)	L. Jurišica, K. Žáková
Computer Architecture	(3rd sem.)	Š. Chamraz
Programming Systems for RT Control	(5th sem.)	E. Šimová
Automatic Control Theory 1	(5th sem.)	M. Huba
Automatic Control Theory 2	(6th sem.)	J. Murgaš

Control System Software 1 I.Hantuch	(6th sem.)	E. Šimová,
Instrumentation of Control Systems Modelling and Simulation	(6th sem.)	J. Šturcel M. Foltín
Electronics for Control Systems Software of Control Systems	(6th sem.) (7th sem.)	M. Toman, J. Šturcel I. Hantuch
Actuators Sensors and Transducers	(7th sem.) (7th sem.)	M. Žalman J. Šturcel
Optimization Industrial Communication Systems	(7th sem.) (8th sem.)	D.Rosinová M. Žalman, I. Belai
Robotics Control System Software 2	(8th sem.) (8th sem.)	L. Jurišica I. Hantuch
Continuous Processes Nonlinear Systems	(8th sem.) (8th sem.)	E. Miklovičová M. Huba, P. Bisták

### III.5 Graduate Study (Ing. Distance Education Method)

CAE of Mechatronics Systems V. Goga	(1st sem)	M. Křůčík,
Flexible Manufacturing Systems Multimedia in Control	(1st sem) (1st sem)	L. Jurišica P. Bisták
Servosystems Field Solution by Computer	(1st sem) (2nd sem)	I. Bélai K. Kutíš
Event Systems Robots Modelling and Control	(2nd sem) (3rd sem)	A. Vitko A. Vitko
Production Systems Modelling and Control	(3rd sem)	Z. Králová

### IV. RESEARCH PROJECTS

- Development and Integration of the Theory of Nonlinear Control Systems. VEGA 1/3089/06 (M.Huba)
- Control of Complex Systems. VEGA 1/3841/06 (V.Veselý)
- Algebraic Methods in Control of Nonlinear Systems and Their Application in Solving the Autorotation problem. APVV LPP-0127-06 (M. Huba, M. Halás)
- Sophisticated Control Methods for Multi-axis Motion Systems. 1/ 3120 / 06 -VEGA (L. Jurišica)
- Education & Propagation of Robotics - Istrobot. APVV LPP-0301-06 (R. Balogh, P. Hubinský)
- Positioning the Region Wien-Bratislava as the Robotics International Competence Center – CENTROBOT. EFRE – Interreg IV Slovakia – Austria (R. Balogh, P. Hubinský)
- Modern Network Control System for Complex Industrial Technologies. APVV-20-045805 (P.Hubinský)
- Controlled Rectifier with Active Filter of Harmonic Currents for SMART Frequency Converters. APVT – 99 – 026504 (M. Žalman – cooperation with Wonsch Brezno)

- Machines for Extreme Fast Material's Dividing. APVT – 99 – 022604 (M. Žalman – cooperation with Microstep Bratislava)
- Research and Development of New Generation of New Electric Linear Drives with High Resolution of Position, APVV-99-031205 (M.Žalman - cooperation with EVPU Nová Dubnica)
- Intelligent Control Systems, G 1/0155/03, (I.Sekaj)
- Design and Implementation of a New Interdisciplinary Intelligent Buildings KEGA 5179- (I. Hantuch)

## **V. COOPERATION**

### **V.1 Cooperation in Slovakia**

- ABB Bratislava, Ltd.
- ATEC Ltd., Bratislava
- AXESS Ltd., Bratislava
- Armed Forces Academy, Liptovský Mikuláš
- Business for Excellence Ltd., Bratislava
- Comenius University, Bratislava, Faculty of Natural Sciences
- ControlTech Industrial Automation Ltd., Trnava
- DATALAN Bratislava, Ltd.
- E-Academia Slovaca, n.o., Bratislava
- Eltis Ltd., Banská Bystrica
- Emerson Ltd., Bratislava
- First Welding Company, Bratislava
- Gratex International Ltd., Bratislava
- HMH Ltd., Bratislava
- Honeywell Ltd., Bratislava
- Institute of Informatics, Slovak Academy of Sciences, Bratislava
- Johnson Controls Ltd., Bratislava
- KFB Control Ltd., Bernolákovo
- Legrand Slovakia
- Matador Púchov, Inc.
- Meret Ltd., Bratislava
- MicroStep Ltd., Bratislava
- Microstep MIS Ltd., Bratislava
- NES Ltd., Nová Dubnica
- PosAm Ltd., Bratislava
- PPA Energo Ltd., Bratislava
- PROXY, Nové Mesto n/Váhom
- PZ Bratislava, Inc.
- Q – EX Trenčín, Inc.
- RMC Nová Dubnica, Ltd.
- S&A Ltd., Banská Bystrica
- SAP Slovakia, Ltd.
- SE Inc., Bratislava
- Schneider Electric Slovakia, Ltd.
- Siemens Ltd., Bratislava
- Slovak Electricity Transmission System Ltd., Bratislava
- Slovakodata, Inc., Bratislava
- Slovnaft Bratislava, Inc.
- SPP – Slovtransgaz Inc., Nitra
- SWH – Siemens Business Service, Bratislava
- Technical University of Košice
- Telegyr Systems (Slovakia) Ltd., Bratislava
- UMB Banská Bystrica

- UNIT Ltd., Bratislava
- University of Agriculture, Nitra
- University of Economics, Bratislava
- University of Žilina
- Volkswagen Slovakia Inc., Bratislava
- Vonsch Brezno, Ltd.
- VUJE Inc., Trnava

## V.2 International Cooperation

- Budapest University of Technology and Economics, Budapest, Hungary
- Czech Technical University of Prague, Czech Republic
- Democritus University of Thrace, Xanthi, Greece
- Eindhoven University, The Netherlands
- Faculty of Industrial Organisation and Management, Silesian Technical University Gliwice, Poland
- Fern Universität - Gesamthochschule in Hagen, Hagen, Germany
- Ghent University, Belgium
- Hochschule, Heilbronn, Germany
- Humusoft Ltd., Praha, Czech Republic
- Hungarian Fuzzy Association, Hungary
- HTL Spengergasse, Vienna, Austria
- IIASA Laxenburg, Austria
- Inno C.at, Austria
- Institute for Problems of Mechanical Engineering, St.Petersburg, Russia
- Institute of Information Theory and Automation, Academy of Sciences of the Czech Republic, Prague, Czech Republic
- Institute of Cybernetics at Tallinn University of Technology, Tallinn, Estonia
- Key Lab of Mathematics Mechanization, AMSS, Chinese Academy of Sciences, Beijing, China
- MES – DEA, Ltd. , Switzerland
- Moscow Power Institute, Moscow, Russia
- Profibus International, Germany
- Schneider Electric, Germany
- Strasbourg University, BETA, Strasbourg, France
- Technical University of Brno, Czech Republic
- Technical University of Liberec, Czech Republic
- Technical University of Ostrava, Czech Republic
- Technical University of Tomas Bata in Zlín, Czech Republic
- Technical University of Ancona, Italy
- Technical University of Graz, Austria
- Technical University of Chemnitz, Germany
- Technical University of Plovdiv, Uni Gabrovo, Bulgaria
- Technical University of Vienna, Austria
- Technical University of Zagreb, Uni Split, Croatia
- University of Maribor, Slovenia
- University of Bochum, Germany
- University of Defence, Czech Republic
- University of Technology, Pilsen, Czech Republic
- University of West Bohemia in Pilsen, Czech Republic
- University of Zagreb, Croatia
- University of Wisconsin - Whitewater, USA
- VŠB Technical University of Ostrava, Czech Republic
- Vytautas Magnus University, Kaunas, Lithuania
- Tallinn University of Technology, Tallinn, Estonia

## V.3 Membership in International Organizations and Societies

- IEEE The Institute of Electrical and Electronics Engineers, Inc. (L.Jurišica, M. Žalman, J.Murgaš, V.Veselý)
- IEE The Institute of Electrical Engineers, Inc. (L.Jurišica, M.Žalman, M.Huba, P.Hubinský)
- IFAC TC Nonlinear Control (M.Huba)
- IFAC, member of the Technical Committee on Adaptive and Learning Systems (J.Murgaš)
- IFAC, member of the Technical Committee on Robust Control (V.Veselý)
- Member of the American Mathematical Society (J.Murgaš)
- Publishing House Pergamon Press (M.Huba - editor)
- Profibus International (URPI, FEI STU)
- CLAWAR Association, Member of the Board of Trustees. (A.Vitko)
- IMEKO, Member of the Technical Committee on Measurement and Control in Robotic (A.Vitko)

## **VI. THESES**

### **VI.1 Masters Theses**

Masters theses supervised at the Institute of Control and Industrial Informatics. The names of supervisors are in brackets.

- [1] P. Bahník: Modular system for vizualization of constrained systems. (M. Huba)
- [2] M. Bachratý: Design and realization of control system for planar stepping motor (M. Žalman)
- [3] T.Belko: Vizualization and control of the cooling process in the TPP Vojany - EVO1 (Š. Kozák)
- [4] M. Boháček: Intelligent velocity servodriver with AM (M. Žalman)
- [5] P. Boško: Sensory subsystem of the mobile robot. (R. Balogh)
- [6] M. Čambor: SCADA/HMI application for the technology controlled by PLC (Bisták)
- [7] A. Čatloš: Johnson Controls automation means in intelligent building (P. Drahoš)
- [8] A. Čatloš: Internet webportal for scientific publications (M. Foltin)
- [9] K. Cisár: Stepping motors control by PLC Simatic S7-300 (L. Mrafko)
- [10] Z. Dideková: Intelligent control methods of nonlinear systems (Š. Kozák)
- [11] M. Dluhoš: Application station for position sensors (J. Šturcel)
- [12] R. Dzurej: Controller design of the dynamical call 2 for thermal plant (M. Huba)
- [13] M. Engelman: Control of the string of vehicles (M. Halás)
- [14] M. Ernek: Matlab model of Slovak power system (M. Foltin)
- [15] M. Ernek: Model of Slovak power system mode in Matlab/SimPowerSystems (M. Foltin)
- [16] D. Ertel: Model of crane and transporters system. Design of model control in lab C025 and visualization of both systems on PC. (P. Drozd)
- [17] L. Farkas: Adaptive controller based on response recognition (M. Foltin)
- [18] P. Fázik: Information web portal for institutional department (K. Žáková)
- [19] T. Ferenczi: Object distinguishing and tracking by methods of computer`s vision (J. Dorner)
- [20] T. Forró: Modern control methods and their application in PLC systems (J. Gabriel)
- [21] P. Gablas: Technological process control using industrial network (T. Chvostek)
- [22] M. Galajda: A graphic boundary realization in Matlab/Simulink for automatic synthesis of fuzzy control by the help of evolutionary techniques (J. Perkác)
- [23] L. Gatial: Design of monitoring and control for technological diagram by using of SIMATIC STEP-7 (Siemens) and OS WinXP (J. Dorner)
- [24] A. Hlavatá: Collaboration of GPS with Lotus Notes SW environment (I. Hantuch)
- [25] J. Hnát: Power system stabilizer influence on the power system stability and oscillation Dumping (J.Murgaš)
- [26] A. Horváth: Controller design for thermal plant with fast and slow mode (M. Huba)
- [27] M. Hubčík: Design of statement sets formation in multiagent system (J. Dorner)

- [28] M. Chmelko: Modification of GPC control (E. Miklovičová)
- [29] V. Chren: Modular networked control system driver structure (P. Fodrek)
- [30] P. Jablonický: Energy saving in Intelligent Building – Heat and Water Management (I. Hantuch)
- [31] M. Janík: Predictive control of nonlinear systems (E. Miklovičová)
- [32] J. Jesenská: WEB application of department library (M. Hejdová)
- [33] M. Juhas: Color textures distinguishion (R. Ravas)
- [34] P. Káčerik: Harmonic components measuring in UPS ELTECO (P. Drahoš)
- [35] M. Kadlec: Design of graphic software for operator's console (J. Dorner)
- [36] M. Kadlec: Graphic software design of operator's console for technological process control – collator (J. Dorner)
- [37] A. Katona: Power unit for actuators with stepping motors (J. Dúbravský)
- [38] M. Kavul'a . Design and realization of portal crane physical model (M. Žalman)
- [39] P. Kelemen: Predictive control methods for SISO and MIMO processes (Š. Kozák)
- [40] J. Kochan: Usage of genetic programming for problems solution in processes control (I. Sekaj)
- [41] P. Kollárik: Design of network program modules in multiagent system(J. Dorner)
- [42] J. Komáromi: Intelligent parameters setting of velocity servodrive with AM (J. Jovankovič)
- [43] M. Kopecký: Digital signal processing of incremental sensors (J. Dúbravský)
- [44] M. Korman: Level control using neural network in Allen-Bradley PLC (L. Kőrösi)
- [45] Z. Kostolný: Design of program modules for diagnostic and simulation of failures in discrete event systems (P. Drozd)
- [46] A. Krátky: Industrial Networks Modelling (T. Chvostek)
- [47] M. Kurák: Control of discrete event system model with data visualization on WEB (L. Mraško)
- [48] O. Kvasnica: Internet portal for accounting studies (Z. Králová)
- [49] V. Lukáč: Control of inverted pendulum (K. Žáková)
- [50] M. Markech: Discrete-time robust controller design for MIMO system (D. Rosinová)
- [51] M. Masár: Design and implementation of control algorithm of haptic simulator (P. Hubinský)
- [52] A. Matiaš: Information and control systems of production plants (J. Šturcel)
- [53] M. Matoušek: Decentralized control performance analysis in the frequency domain (A. Kozáková)
- [54] J. Mesiarkin: Steady state optimal control of a complex system (D. Rosinová)
- [55] A. Meško: Control system for technological device (J. Dúbravský)
- [56] M. Mikovíny: Education system for the course on production systems modelling and control (Z. Králová)
- [57] M. Minca: Design of robust controllers for SISO systems. (M. Dúbravská)
- [58] M. Mízner: Parallel evolutionary calculations (I. Sekaj)
- [59] Cs. Nagy: Control and visualisation of laboratory-scale model of production line (L. Mraško)
- [60] M. Oravec: Evolutionary computation methods (I. Sekaj)
- [61] T. Paulovič: Synchronous motor adaptive control (J. Murgaš)
- [62] M. Petruška: Control unit for actuating device with stepping motor. (J. Dúbravský)
- [63] M. Putiš: Possibility of software means using in Siemens Simatic systems (P. Drahoš)
- [64] M. Ratkoš: Multiple-model DMC control. (E. Miklovičová)
- [65] S. Ravas: Mobile robotic system. Control and monitoring on HW level, communication on superior level in MAS system. Design and realization (J. Dorner)
- [66] V. Rokyta: Adaptive process control using real-time operating system RTAI (T. Murgaš)
- [67] F. Rovenský: Comparison of control algorithms for constrained systems (M. Huba)
- [68] G. Ryšavý: Control of the gantry crane position (P. Hubinský)
- [69] P. Sartoris: Generation of optimal neural network structure using genetic algorithms (L. Kőrösi)
- [70] T. Sedlák: System for marks distinguishion (P. Kukuča)
- [71] M. Sedlák: Remote control of magnetic levitation system (K. Žáková)
- [72] P. Sedmák: Programming languages of PLC Simatic S7 (L. Mraško)

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- [73] D. Serina: Analysis and synthesis of nonlinear systems in algebraic system Maple (M. Halás)
- [74] J. Slávik: Design, implementation and comparison of control methods for school thermal system (M. Kamenský)
- [75] T. Skalský: Control system of flexible transporter model (M. Žalman)
- [76] M. Sklár: Design, implementation and comparison of control methods for school hydraulic system (M. Kamenský)
- [77] M. Suchánek: Servo drive with PM synchronous motor (J. Dúbravský)
- [78] M. Šimeček: Realization and watching of 2D scene and object by a computer's vision methods (J. Dorner)
- [79] J. Števek: PID Toolbox (Š. Kozák)
- [80] M. Šúlek: Traffic crossroad's control using PLC in InTouch environment (J. Kardoš)
- [81] M. Šveda: Position system with two degrees of freedom inverted pendulum (M. Žalman)
- [82] J. Tarnovský: Universal predictive control methods of SISO and MIMO systems (Š. Kozák)
- [83] J. Tomlain: Innovation and advertising strategy in oligopol (M. Horniaček)
- [84] T. Turček: Laboratory synchronous generator control system. (J. Murgaš)
- [85] T. Turňa: Process modelling using wavelet neural networks (L. Kőrösi)
- [86] J. Ulický: Model of SMA actuator (P. Drahoš)
- [87] J. Valko: Nonlinear process control using neural networks (L. Kőrösi)
- [88] P. Viselka: Generation of environment representation from ultrasonic and infrared sensor data (J. Hanzel)
- [89] M. Zvada: MIMO algebraic controllers (Š. Kozák)

## **VII. OTHER ACTIVITIES**

- Conferences organized by institute:
  - 8<sup>th</sup> International Conference CPS '08 - Control of Power Systems, High Tatras, Slovakia, 11-13 June, 2008 (J. Murgaš, V. Veselý – int. program committee, M. Hejdová, Z. Králová – organization committee)
  - International Conference 'Cybernetics and Informatics', Ždiar, Slovak Republic, February 2008 (A. Kozáková, D. Rosinová, K. Žáková, L. Mraško, L. Kőrösi, M. Mrosko)
  - Istrobot: Competition of Mobile Robots, Bratislava, SK. April 2008 (R. Balogh)
  - Robolution: Summer School of Robotics. Bratislava, SK. July 2008 (R. Balogh, P. Hubinský, A. Vitko)
  - Days of mobile robotics – exhibition on Elosys tradefair. Trenčín, SK. October 2008 (R. Balogh)
- Conferences Participation, Membership in Committees:
  - Elosys 2008, Trenčín. SK. October 2008, J. Murgaš, I. Sekaj – PC members, Profibus exposition)
  - Austria, Breitenbrunn, World Championship in Robotic Yachting. Jury members (I. Hantuch).
  - Austria, Vienna: Robotchallenge competition participation (R. Balogh)
- Projects:
  - Schneider-electric courses, automation and control systems, March, April, September, October 2008 (M. Mrosko - coordinator)
  - CEEPUS C II – CZ – 0031-01-0506 International Study in Automatic Control (M. Huba, K. Žáková)
  - EU Leonardo Da Vinci project 'REVIVE - Reviewing and Reviving Existing VET Curriculum' (M. Huba, K. Žáková)
  - Leonardo: SOMA (Safety of Machinery) (M. Huba)
  - ESF Project: Program of Continuing Education in the Area of Industrial Automation

and

- Information Technology. (M. Huba, P. Bisták - local coordinators)
- ESF Project: Enhanced Preparation of Students of Bachelor and Engineering Study for Their Future Career. (K. Žáková – coordinator)
- ESF Project: Preparation of university teachers for ICT in education (K.Žáková-coordinator)
- DAAD Project Autonomous Airships (Huba),
- AT&P Journal (L.Jurišica, J.Šturcel, M.Žalman, I.Hantuch, J. Murgaš, V. Veselý – Editorial Board members)
- Selected Topics in Modelling and Control (V. Veselý - Editor , L. Jurišica, J. Murgaš – Editorial Board members)
- Accreditations Board of SAS (L.Jurišica – member)
- Profibus Slovakia Association (P.Drahoš – chairman)
- International Machine Fair Nitra, May 2008 (Profibus exposition)
- Cooperation with Encyclopedic Institute of Slovak Academy of Sciences on the Slovak Encyclopedia (Lexical Group Cybernetics): L.Harsanyi, P.Hubinský, L. Jurišica, A. Kozáková, D. Rosinová, J.Šturcel, M. Žalman, K. Žáková
- Accreditation Board of the Government of Slovakia. (Working Group - L. Jurišica, J. Murgaš – member)
- Local Centre of Distance Education (M. Huba-head, D. Sovišová-Study coordinator, P. Bisták- equipment manager, K. Žáková-international cooperation)
- Computer Viruses Analysis ESET Ltd. Bratislava. (P. Hubinský)
- Administration of Shareware Archive of Slovak Antivirus Centre. (P. Hubinský)
- Slovak Society of Cybernetics and Informatics (M. Huba – deputy Head)
- Slovak Standards Institute (SUTN) - M. Huba: Working Group TK – 37, Information Technologies, Subgroup on e-learning – Head
- SSKI (Slovak Society for Cybernetics and Informatics): V. Veselý
- Journal ‘Cybernetics and Informatics’: D. Rosinová - Managing Editor. J. Murgaš, V. Veselý - members of Editorial Board
- AT&P Journal: J. Murgaš, V. Veselý - members of Editorial Board
- Journal of Electrical Engineering: V. Veselý - member of Editorial Board
- Project Management Association of Slovakia: Z. Králová - member
- Slovak Society for Operations Research: Z.Králová - council member
- MacPlanet: M.Foltin – editor internet journal [www.macplanet.sk](http://www.macplanet.sk)

## **VIII. PUBLICATIONS**

### **VIII.1 Journals**

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