

INSTITUTE OF CONTROL AND INDUSTRIAL INFORMATICS

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

Director

Prof. Ing. Ján Murgaš, PhD.

e-mail: jan.murgas@stuba.sk

Tel/Fax: +421-2-602 91 781

Mob.: +421-908 706 215

I. STAFF

Professors	Prof. Ing. Mikuláš Huba, PhD., Prof. Ing. Ladislav Jurišica, PhD., Prof. Ing. Václav Kalaš, DrSc., Prof. Ing. Štefan Kozák, PhD., 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. Alena Kozáková, 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. Michal Blaho, Ing. Jozef Dorner, Ing. Peter Drahoš, PhD., Ing. Mária Dúbravská, Ing. Jozef Dúbravský, Ing. Martin Foltin, PhD., Ing. Štefan Chamraz, PhD., Ing. Slavomír Kajan, PhD., Ing. Ján Kardoš, PhD., Ing. Ladislav Körösi, Ing. Marián Mrosko, Ing. Ivan Oravec, PhD., Ing. Lubica Šimová, PhD., Ing. Peter Ťapák, PhD., Ing. Miroslav Toman, PhD.
Research Workers	Ing. Igor Bélai, PhD., Ing. František Duchoň, Ing. Peter Fodrek, PhD., Ing. Miroslav Halás, PhD., Ing. Jaroslav Hanzel, PhD., Ing. Mária Hypiúsová, PhD., Ing. Marián Klúčik, Ing. Leo Mrafko, Ing. Jana Paulusová, Ing. Danica Sovišová, Ing. Jozef Vöröš, PhD.
Technical Staff	Peter Detvaj, Ing. Radoslav Dibarbora, Mgr. Alena Foltinová, Pavol Gašparovič, Katarína Horváthová, Katarína Macková (secretary), Jozef Turčánik
PhD. Students	Ing. Andrej Babinec, Ing. Pavol Bahník, Ing. Michal Bachratý, Ing. Peter Didek, Ing. Zuzana Dideková, Ing. Martin Ernek, Ing. Ľudovít Farkaš, Ing. Martin Gažo, Ing. Ivan Holič, Ing. Juraj Hnát, Ing. Peter Kurčík, Ing. Michal Leporis, Ing. Quang Nguyen, Ing. Michal Oravec, Ing. Jakub Osuský, Ing. Peter Pásztó, Ing. Ivan Pestún, Ing. Lukáš Palkovič, Ing. Tatiana Radičová, Ing. Jozef Rodina, Ing. Michal Sedlák, Ing. Miroslav Suchánek, Ing. Alexandra Šlezárová, Ing. Stanislav Števo, Ing. Juraj Švančara, Ing. Richard Tesár, Ing. Stanislav Triaška, Ing. Martin Urban, Ing. Kamil Valigura, Ing. Ján Vincel, Ing. Jakub Vonkomer, Ing. Vladimír Žilka

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
- CAD CS Laboratory
- Automation Means Laboratory
- Sensors Laboratory
- SIEMENS Automation Technology Laboratory
- Smart Servosystems Laboratory
- Servosystems Laboratory
- Industrial Automation Laboratory
- Multimedial Laboratory
- Nonlinear Systems Laboratory
- Robot Control Laboratory
- Mechatronics Laboratory
- Robotics Laboratory
- 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 1103 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
- DC servo drive system
- Software Wonderware InTouch
- RsLogix5000, RsLogix500, SoftLogix,
- ControlNet, DeviceNet, EtherNet,
- Emulate500, Emulate5000, LogixArchitect, RsLinx
- RsSQL, RsTune, RSVIEW Supervisory Edition
- HW: ControlLogix PLC, CompactLogix, HMI
- Sinamics S 120
- B&R APC 620 + ACOPOS 1016

- SIMOVERT
- LEGO Mindstorm NXT 2.0
- XCode Developer Tool

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)	K. Žáková, R. Ravas
Computer Architecture	(2nd sem., 3-2h)	Š. Chamraz, R. Ravas
Bases of Real Time Systems	(3rd sem., 2-3h)	L. Šimová, I. Hantuch
Automatic Control Theory 1	(3rd sem., 2-3h)	M. Huba
Applied Computational Intelligence	(4th sem., 2-2h)	I. Sekaj
Software for Control Systems 1	(4th sem., 2-2h)	L. Šimová, I. Hantuch
Automatic Control Theory 2	(4th sem., 2-3h)	J. Murgaš
Design of Web Applications	(4th sem., 2-2h)	K. Žáková
Modelling and Simulation	(4th sem., 2-2h)	M. Foltin, E. Miklovičová
Electronics for Control Systems	(4th sem., 2-2h)	M. Toman, J. Šturcel
Instrumentation of Control Systems	(4th sem., 3-2h)	J. Šturcel
Internet and Intranet Applications	(5th sem., 2-2h)	K. Žáková
Actuators	(5th sem., 2-3h)	M. Žalman
Software for Control Systems 2	(5th sem., 2-3h)	I. Hantuch, L. Kőrösi
Optimization	(5th sem., 2-2h)	D. Rosinová
Basic of Control Systems	(5th sem., 2-2h)	P. Hubinský
Cybernetics	(5th sem., 3-2h)	J. Murgaš
Sensor Systems for Cars	(5th sem., 2-2h)	V. Tvarožek, J. Šturcel
Automation 1	(5th sem., 3-2h)	J. Murgaš
Learning Management Systems 1	(6th sem., 2-2h)	M. Huba
Industrial Communication Bus	(6th sem., 2-2h)	P. Drahoš, J. Šturcel
Industrial Communication Systems	(6th sem., 3-2h)	I. Bělai, M. Žalman
Robotics	(6th sem., 3-2h)	P. Hubinský
Continuous Processes	(6th sem., 3-2h)	E. Miklovičová
Nonlinear Systems	(6th sem., 2-3h)	M. Huba
Automation 2	(6th sem., 2-2h)	M. Žalman

III.2 Graduate Study (Ing.)

CAD for Progr. Control Systems Development 1	(1st sem., 3-2h)	I. Hantuch
Multimedia in Control	(1st sem., 3-2h)	M. Huba

Optimal Control	(1st sem., 3-2h)	A. Kozáková
Servosystems	(1st sem., 3-2h)	M. Žalman
Theory of Automatic Control 3	(1st sem., 2-3h)	M. Huba
Linear Systems Control	(1st sem., 2-3h)	M. Hypiúsová, V. Veselý
Flexible Manufacturing Systems	(1st sem., 3-2h)	L. Jurišica
Modelling and Simulation of Processes	(1st sem., 3-2h)	E. Miklovičová
Artificial Neural Nets	(1st sem., 3-2h)	I. Sekaj
Internet and Intranet Applications	(1st sem., 2-3h)	K. Žáková
Evolutionary Computing	(2nd sem., 2-3h)	I. Sekaj
Databases of Control Systems	(2nd sem., 2-3h)	Z. Králová
Adaptive Control	(2nd sem., 3-2h)	J. Murgaš
Discrete Event Systems	(2nd sem., 3-2h)	A. Vitko
Multivariable System Control	(2nd sem., 3-2h)	V. Veselý
Sensor Systems in CIM	(2nd sem., 3-2h)	M. Toman, J. Šturcel
Fuzzy and Neural Controllers	(3rd sem., 3-2h)	I. Sekaj
Smart Sensors Systems	(3rd sem., 3-2h)	J. Šturcel
Intelligent Systems	(3rd sem., 3-2h)	S. Kajan, I. Sekaj
Theory of VSC in Robotics	(3rd sem., 3-2h)	L. Jurišica, J. Kardoš
CAD for Progr. Control Systems Development 2	(3rd sem., 3-2h)	I. Hantuch
Production Systems Management 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. Jurišica
Mechatronics	(3rd sem., 3-2h)	L. Jurišica
CAD of Control Systems	(3rd sem., 3-2h)	P. Drahoš, J. Šturcel
System Identification	(4th sem., 2-3h)	E. Miklovičová
Control of Complex Systems	(4th sem., 2-2h)	D. Rosinová
Intelligent Servosystems	(4th sem., 3-2h)	M. Žalman

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

Robotics	programm LLL, kapitols Erasmus (P. Hubinský)
Automation	programm LLL, kapitols Erasmus (P. Hubinský)

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	(2nd sem.)	Š. Chamraz

Bases of Real Time Systems	(5th sem.)	L. Šimová
Automatic Control Theory 1	(5th sem.)	M. Huba, I. Oravec
Automatic Control Theory 2	(6th sem.)	J. Murgaš
Control System Software 1	(6th sem.)	L. Šimová, I. Hantuch
Instrumentation of Control Systems	(6th sem.)	J. Šturcel
Modelling and Simulation	(6th sem.)	M. Foltin, E. Miklovičová
Electronics for Control Systems	(6th sem.)	M. Toman, J. Šturcel
Actuators	(7th sem.)	M. Žalman
Optimization	(7th sem.)	D. Rosinová
Control System Software 2	(7th sem.)	I. Hantuch, L. Kőrösi
Industrial Communication Systems	(8th sem.)	I. Béla, M. Žalman
Robotics	(8th sem.)	P. Hubinský
Continuous Processes	(8th sem.)	E. Miklovičová
Nonlinear Systems	(8th sem.)	M. Huba

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

CAE of Mechatronics Systems	(1st sem.)	M. Klůčik, V. Goga, J. Murín
Flexible Manufacturing Systems	(1st sem.)	L. Jurišica
Multimedia in Control	(1st sem.)	M. Huba
Servosystems	(1st sem.)	I. Béla, M. Žalman
Event Systems	(2nd sem.)	A. Vitko
Sensor Systems in CIM	(2nd sem.)	M. Toman, J. Šturcel
Robots Modelling and Control	(3rd sem.)	A. Vitko
Mechatronics	(3rd sem.)	L. Jurišica

IV. RESEARCH PROJECTS

IV.1 International projects

- Reviewing and Reviving Existing VET Curriculum. LLP-LdV-TOI-2008-LT-0022 (M. Huba)
- E-xcellence + Cross sectoral valorisation. 135375-LLP-2007-NL-KA4MP (M. Huba)
- Enhancing NO-SK cooperation in automatic control APVV VMSP-P-0004-09 (M. Huba)

IV.2 National projects

- Modern network control system for demanding industrial applications. APVV-99-045805 (J. Murgaš)
- Algebraic methods in nonlinear control systems and their application to autorotation problem. APVV LPP-0127-06 (M. Huba, M. Halás)
- Teaching aids for distance education study program in Industrial Informatics KEGA 3/5201/07 (J. Šturcel)
- Proposal and preparation of the new interdisciplinary subject Intelligent buildings (IB). KEGA 3/5179/07 (I. Hantuch)

- Design of a methodology of exploitation the 3D-modelling and virtual reality means in conditions of teaching in specialized laboratories. KEGA 3/7307/09 (L. Jurišica)
- Building virtual and remote experiments for a network of online laboratories. KEGA 3/7245/09 (M. Huba)
- Advanced control methods for industrial processes. VEGA 1/0544/09 (V. Veselý)
- Integration and development of nonlinear and robust control methods and their integration to control flying vehicles. VEGA 1/0656/09 (M. Huba)
- Research and development of marginal Power Alternate Traction Drive. APVV -0530-07 (M. Žalman)
- Hybrid triangulation - optical system for working quality checking of tire. APVV VMSP-P-0030-09 (P. Drahoš)
- Clutch Inspector. APVV VMSP-P-0155-09 (M. Žalman)
- Optimization of the mechatronic systems control. VEGA 1/0690/09 (L. Jurišica)
- Intelligent control of service robot APVV VMSP – P-0004-09 (L. Jurišica)
- Building grant for the Centre of Excellence for Smart Technologies, Systems and Services (SMART), ASF EÚ MS SR, ITMS 26240120005, (J. Murgaš)
- Building grant for the Centre of Excellence for Smart Technologies, Systems and Services 2 (SMART 2), ASF EÚ MS SR, ITMS 26240120029, (J. Murgaš)

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
- 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.
- RELKO, spol. s r.o.
- 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
- Robotika Sk, Bratislava
- ME inspection, Bratislava
- ZTS VVU Košice

V.2 International Cooperation

- Institute de Recherche en Communications et Cybernetique, C.N.R.S, Nantes, France
- Department of Mathematical Sciences, Chalmers University of Technology, Gothenburg, Sweden
- Budapest University of Technology and Economics, Budapest, Hungary
- Czech Technical University of Prague, Czech Republic
- Democritos 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
- Heilbronn University, Germany
- Humusoft Ltd., Praha, Czech Republic
- Hungarian Fuzzy Association, Hungary
- HTL Spengergasse, Vienna, Austria
- IIASA Laxenburg, Austria
- InnoC.at, Austria (Austria Association for Innovative Computer Science)
- 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 Vienna, Austria
- 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
- Vytautas Magnus University, Kaunas, Lithuania
- FH Technikum, Vienna, Austria
- Technical University Riga

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, M. Huba)
- 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.

Alumni Robotics, Cybernetics, January 2009

- [1] Bartos, P.: Design of algorithm of trajectory control with preventing residual oscillation of elastic unit. (P. Hubinský)
- [2] Brežný, B.: HMI animation of robotic workstation controlled with PLC (J. Kardoš)
- [3] Červenák, L.: Creating a simulation process in an eM-Plant on the basis of real production line of transmissions in Volksawagen Slovakia a.s. (J. Gabriel)
- [4] Dorkovič, N.: Design and realization of physical model of the portal gantry cranes (M. Žalman)
- [5] Gažo, M.: Control speed of one-way engine (J. Dúbravský)
- [6] Gregorovič, P.: Master-Slave control of vertical cutting saw (M. Žalman)
- [7] Hlavatý, A.: Associated control of mobile robot (P. Hubinský)
- [8] Hudoba, J.: E-learning system designed with OOP (P. Bisták)
- [9] Jesenská, J.: Library of the Institute of Control and Industrial Informatics (M. Hejdová)
- [10] Ličko, M.: Objects recognition using image processing (J. Dorner)
- [11] Machlica, P.: Movement simulation in 3D area – Svatat (J. Grman)
- [12] Mókus, Š.: Simulation of strategies for production planning on the laboratory model with manipulators (Z. Králová)
- [13] Nguyen, Q., T.: Robust controller design for the 3DCRANE process (V. Veselý)
- [14] Novomeská, Z.: Application of the evolutionary computation methods in solving multicriterial optimization tasks (I. Sekaj)
- [15] Ráchel, L.: Triangulation in the environment using a laser scanner (F. Duchoň)
- [16] Sarvaš, T.: Realization of parallel genetic algorithms on multiple computers (S. Kajan)
- [17] Šlezárová, A.: Heuristic adaptive control (J. Murgaš)

- [18] Štrenger, M.: Mobile robot navigation in unknown environment (F. Duchoň)
- [19] Šuplata, M.: Human face recognition (R. Ravas)
- [20] Tóth, V.: The system for presentation of product sale through electronic media using the database of Lotus Notes/Domino placed on a web server (P. Kratmüller)

Alumni Cybernetics, June 2009

- [1] Babel'a, P.: Robust controller design of magnetic levitation in the frequency domain (M. Hypiusová)
- [2] Bulko, J.: Predictive control design for laboratory system (A. Kozáková)
- [3] Čalfa, M.: TSP solution using artificial neural network (A. Kozáková)
- [4] Didek, P.: Application of evolutionary computing for solving of logistics problems (I. Sekaj)
- [5] Fodrek, T.: JavaScript Teaching portal (M. Blaho)
- [6] Gašpárek, J.: Robust controller design for laboratory crane model (M. Hypiusová)
- [7] Gedai, T.: Design of robust PID auto-tuner for control of linear SISO systems with uncertainties (Š. Bucz)
- [8] Harušťák, P.: Web interface for automatic testing web applications (L. Farkaš)
- [9] Hinka, M.: Analysis and design of software solution of deduction states in power industry (M. Dúbravská)
- [10] Holič, I.: Design of continuous and discrete correcting elements with specified and general structure (M. Dúbravská)
- [11] Jašková, M.: Design and analysis of chosen model control in lab C026 (P. Drozd)
- [12] Jurčácko, B.: Design of control and diagnostics of a laboratory model of production line with Simatic S7 (L. Mraňko)
- [13] Kadlic, B.: Actuator SMA (P. Drahoš)
- [14] Kamenský, J.: Distributed computations using Java Ethernet (P. Fodrek)
- [15] Lavo, J.: Design of predictive PID controller, which has parameters automatically tuned using fuzzy methods (J. Paulusová)
- [16] Le Huy Nam: Direct adaptive control (J. Murgaš)
- [17] Marič, L.: Design of robust PID controller of processes with parameters and unknown mathematical model (Š. Bucz)
- [18] Marton, K.: Design controllers for the laboratory model of servo system (M. Hypiusová)
- [19] Matúš, R.: Predictive control of a laboratory thermal process (E. Miklovičová)
- [20] Matušík, J.: Record attendance system (M. Dúbravská)
- [21] Michalových, T.: Robust controllers design for angular velocity of DC-motor (M. Hypiusová)
- [22] Nagy, P.: Distributed computations using Java RPMI (M. Foltin)
- [23] Nízky, M.: Control with pole placement for systems with constraints (P. Ťapák)
- [24] Orlík, V.: Internet based administration of journals (K. Žáková)
- [25] Pásztó, P.: Mobile robot with visual system controlling (P. Hubinský)
- [26] Pintér, M.: Optimization of steady states of complex dynamic system (D. Rosinová)
- [27] Radičová, T.: Master-slave servo-drive with LM PM without iron (M. Žalman)
- [28] Schlosser, M.: Control of direct motor model with PLC Simatic S7-200 (M. Mrosko)
- [29] Šandera, M.: Solving optimization tasks in simulation environment Comsol using genetic algorithms (I. Sekaj)
- [30] Škoda, M.: Network control system for metal parts separating (J. Murgaš)
- [31] Švančara, J.: Using simulation in optimization of production process in the company Power-One, s.r.o. (Z. Králová)
- [32] Triaška, S.: Virtual laboratory of servosystems (M. Žalman)
- [33] Uhrík, M.: Movement control of robotic head in space (J. Murgaš)
- [34] Urban, M.: Control of hydraulic model using PLC Simatic S7-200 (M. Mrosko)
- [35] Valigura, K.: SimEvents-flexible and transport system modeling tool (M. Foltin)
- [36] Valo, A.: Control technological processes (outages, planned outages) via system OMS (I. Hantuch)

- [37] Varga, T.: Higher-level visualization of digital measurement of the length and data exchange with warehouse management system (J. Gabriel)
- [38] Varga, I.: Design and realization of gantry stage motion control system of cutting machine (M. Žalman)
- [39] Vavra, M.: Wind power plant control (M. Poliačik)
- [40] Vereš, P.: Temperature control in an intelligent house (P. Drahoš)
- [41] Veselský, J.: Fuzzy prediction control methods (Š. Kozák)
- [42] Vincel, J.: Design of virtual models of technological processes (I. Sekaj)
- [43] Vrábel, P.: Control of the model of thermal system (M. Mrosko)
- [44] Vydra, J.: Alarm management and failure diagnostics in control system with PLC Simatic S7 (L. Mraško)
- [45] Žáčik, M.: Business model of the web development company and its commercialisation (M. Zajko)

Alumni Robotics, June 2009

- [1] Amena, P.: Wireless temperature control in thermostatic valves (E. Vavrinský)
- [2] Babinec, A.: Remote operator control of mobile robot influenced by time-delay in communication channel (F. Duchoň)
- [3] Bačik, M.: Autonomous road vehicle control in normal traffic Supervisit (M. Klůčik)
- [4] Bakoš, J.: Visual system of a remotely controlled mobile robot (L. Jurišica)
- [5] Bella, L.: Inspection robot (L. Jurišica)
- [6] Brozman, J.: Virtual model AC variable speed servo-drive with the ACS 800 (M. Žalman)
- [7] Duong, Q., K.: Visualization of motion control algorithms (P. Hubinský)
- [8] Ďurfina, M.: Electronic book for the course 'Industrial Communication Systems' (I. Béla)
- [9] Gondžúr, R.: Methods of sensor fusion of robotic device and using the result in robot control (L. Petrovič)
- [10] Grossmann, F.: The case for using RFID in e-commerce (B. Mišota)
- [11] Hupka, M.: HART protocol implementation (P. Drahoš)
- [12] Juhaniak, J.: Virtual model of a DC speed servo-drive with a converter DCS 600 (M. Žalman)
- [13] Kolenčík, M.: Internet based inverted pendulum control (K. Žáková)
- [14] Korcsmáros, T.: Design of transportation system control and visualization with WinCC (L. Mraško)
- [15] Kotrčka, R.: Numeric control of conveyor model (M. Žalman)
- [16] Kytka, L.: Determination of the robot position using MEMS gyroscopes and accelerometers (M. Klůčik)
- [17] Liška, P.: Modification of algorithm of movement trajectory generation of 2-axis mechanism for elimination of residual oscillations (P. Hubinský)
- [18] Masár, V.: Speed control of direct current engine (J. Dúbravský)
- [19] Mihálik, P.: Creating grid-based map using NN (J. Hanzel)
- [20] Mihaľo, M.: Drive unit with synchronous motor (J. Dúbravský)
- [21] Miklo, J.: Design and implementation of algorithms for the controlled conditions of the planning production in the textile industry (P. Bisták)
- [22] Mináč, M.: Speed servo drive with BDCM (M. Žalman)
- [23] Molčány, M.: Actuator with the Stepper motor (J. Dúbravský)
- [24] Monsberger, P.: Actuator with the Direct-current motor (J. Dúbravský)
- [25] Morávek, M.: Serial programmer of ATMEL microcontrollers - BOOTLOADER (Š. Chamraz)
- [26] Palkovič, L.: Design of portal crane control (P. Hubinský)
- [27] Pestún, I.: Helicopter control (M. Halás)
- [28] Plůta, J.: Creating a control interface in C#NET to control servomechanism via TCP / IP (T. Surovčík)
- [29] Rodina, J.: Control design of gyroscopic stabilized robotic drive (P. Hubinský)

- [30] Rosa, J.: The user of SAP application software in purchase management of industrial enterprise (M. Zajko)
- [31] Rydzyk, L.: ABAP programming guide in SAP ERP (V. Rossa)
- [32] Sámel, P.: Software equipment for robotic workstation with vision system (M. Žalman)
- [33] Slodička, M.: Control system proposal of mobile robotic system (J. Dorner)
- [34] Spilý, P.: Graphical user interface to support identification and control of systems (K. Žáková)
- [35] Tuhý, P.: A simple information system for small business as promoting e-commerce (B. Mišota)
- [36] Varga, T.: Robust controller design for MIMO system (inverted pendulum) (D. Rosinová)
- [37] Vonkomer, J.: Sensorless speed servodrive with an induction motor (M. Žalman)
- [38] Záborský, J.: Virtual models of mobile robots and their control (I. Sekaj)

Alumni Robotics, June 2009 (Distance Education Method)

- [1] Balec, M.: Automatic adaptation of the PS settings using RFID (K. Žáková)
- [2] Bisák, B.: Optimization and security of information in automatization (M. Bittera)
- [3] Jankovič, J.: Temperature controller with SMT 160-30 (Š. Chamraz)
- [4] Jurčovičová, J.: Sensor subsystem of the mobile robot (R. Balogh)
- [5] Kmeť, A.: Genetic algorithms (J. Grman)
- [6] Martinček, J.: Universal control system for use in robotics (M. Klúčik)
- [7] Mikula, V.: Creation and optimization the simulation of lift control by PLC SIMATIC S7-300 90 (L. Jurišica)
- [8] Moravčík, T.: Design of network laboratory with use of multi-layer visualization (I. Hantuch)
- [9] Pšitek, M.: Online multi-conference system (K. Žáková)
- [10] Repčok, M.: Application of parallel genetic algorithms on problems solving in Matlab and Comsol (I. Sekaj)
- [11] Štefánik, P.: Security system of college's positron (L. Jurišica)
- [12] Truben, G.: Microcomputer control system with possibility of program and parameters modification using BOOT-Loader (Š. Chamraz)
- [13] Vyžinkár, I.: System for enviromental information collecting (R. Balogh)

VI.2 Doctoral Thesis

- [1] Pospiech, T.: Optimized methods of the mechatronic system kontrol (P. Hubinský)
- [2] Ťapák, P.: Constrained pole assignment control for third order systems with input constraints (M. Huba)

VII. OTHER ACTIVITIES

Conferences organized by the Institute:

- Workshop on 'New Trends in Cybernetics, Automation and Informatics' (held during Meeting of Departments of Cybernetics, Measurement and Control and Automation from Czech and Slovak Republic, Gabčíkovo, Slovak Republic, 7-9 September 2009)
- 11th Conference of Doctoral Students ELITECH'09 - (A. Kozáková - responsible for organization, editor of Conference Proceedings)
- Days of the Mobile Robotics – exhibition on ELOSYS tradefair. Trenčín, SK. October 2009 (R. Balogh)
- Istrobot: Competition of Mobile Robots, Bratislava, SK. April 2009 (R. Balogh)
- Summer School of Robotics. Vienna, AT, August 2009 (R. Balogh, P. Hubinský)
- 10th International Conference Virtual University VU'09 December 10 - 11, 2009, Bratislava (M. Huba)

Other events:

- Celebration of 50th anniversary of Automation at FEI STU ('Automation and Slovakia'), 7 September 2009

Conferences Participation, Membership in Committees:

- ELOSYS 2009, Trenčín. SK. October 2009, J. Murgaš, I. Sekaj – PC members, Profibus exposition)
- Austria, Vienna: Robotchallenge Competition participation (R. Balogh)
- 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, 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)
- SSKI (Slovak Society for Cybernetics and Informatics): V. Veselý
- Journal ‘Cybernetics and Informatics’: D. Rosinová - Managing Editor. J. Murgaš, Veselý - members of Editorial Board
- Journal of Electrical Engineering: V. Veselý - member of Editorial Board
- Slovak Society for Operations Research: Z. Králová - council member
- MacPlanet: M. Foltin – editor internet journal www.macplanet.sk

Projects:

- Schneider-electric courses, automation and control systems (M. Mrosko)
- EU Leonardo Da Vinci project ‘REVIVE - Reviewing and Reviving Existing VET Curriculum’ (M. Huba, K. Žáková)
- Creating the Future – Centrobot International Project Slovakia – Austria, EFRE N-0023 (R.Balogh, P. Hubinský)
- Istrobot (APVV LPP-0301-06) Popularization Project (R. Balogh)

VIII. PUBLICATIONS**VIII.1 Journals**

- [1] BALOGH, R.: ISTROBOT 2009. In: AT&P Journal. - ISSN 1335-2237. - Vol. 16, No. 7 (2009), p. 60. (in Slovak)
- [2] BALOGH, R.: ISTROBOT 2009. In: Robot revue. – Vol. 1, October (2009), p. 4-6. (in Slovak)
- [3] BENICKÝ, P., JURIŠICA, L.: Real Time Edge Detection in Binary Images. In: AT&P Journal. - ISSN 1335-2237. - Vol. 16, No. 8 (2009), p. 53-55. (in Slovak)
- [4] BENICKÝ, P., JURIŠICA, L.: Fuzzy Logic-Based Real Time Motion Detection. In: AT&P Journal. - ISSN 1335-2237. - Vol. 16, No. 5 (2009), p. 95-97. (in Slovak)
- [5] BENICKÝ, P., JURIŠICA, L.: Corner Detection in Binary Images. In: AT&P Journal. - ISSN 1335-2237. - Vol. 16, No. 11 (2009), p. 54-55. (in Slovak)

- [6] BLAHO, M., FOLTIN, M.: Matlab (9). Database Toolbox. In: AT&P Journal. - ISSN 1335-2237. - Vol. 16, No. 1 (2009), p. 58-59. (in Slovak)
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- [8] BUCZ, Š., MARIČ, L., HARSÁNYI, L., VESELÝ, V.: Design of Robust PID Controller on the Base of Practical Experiments. In: EE časopis pre elektrotechniku a energetiku. - ISSN 1335-2547. - Vol. 15, Special Issue (2009), p. 180-184. (in Slovak)
- [9] CIGÁNEK, J., KOZÁK, Š.: An Effective Robust Controller Algorithm Design. In: In: AT&P Journal Plus. - ISSN 1336-5010. - No. 2: Process Control (2009). - p. 93-96. (in English)
- [10] CHAMRAZ, Š.: Microprocessor Control of Temperature System. In: EE časopis pre elektrotechniku a energetiku. - ISSN 1335-2547. - Vol. 15, Special Issue (2009), p. 188-192. (in Slovak)
- [11] CHAMRAZ, Š., BALOGH, R.: Implementation of the First Order Control System. In: Journal of Applied Mathematics, Statistics and Informatics. - ISSN 1336-9180. - Vol. 5, No. 2 (2009), p. 63-76. (in English)
- [12] DIDEKOVÁ, Z., KOZÁK, Š.: Modeling and Control of Non-Linear Systems Using Soft Computing. In: International Review of Automatic Control. - ISSN 1974-6059. - Vol. 2, No. 4 (2009), p. 366-371. (in English)
- [13] DIDEKOVÁ, Z., KAJAN, S.: Neural Control of Non-Linear Processes Designed by Genetic Algorithms. In: Posterus.sk. - ISSN 1338-0087. - October (2009), <http://www.posterus.sk/?p=3138>. (in English)
- [14] DUCHOŇ, F., KLÚČIK, M.: Application of Sensory Systems in Welding. In: Zvárač. - ISSN 1336-5045. - Vol. 6, No. 4 (2009), p. 7-11. (in Slovak)
- [15] DUCHOŇ, F., JURIŠICA, L.: Detection of Environment Marks by Laser Scanner. In: AT&P Journal Plus. - ISSN 1336-5010. - No. 1: Intelligent Motion Control Systems (2009). - p. 43-48. (in Slovak)
- [16] DUCHOŇ, F., KLÚČIK, M., JURIŠICA, L.: Reactive Navigation of Mobile Robot with Visual System. In: Acta Mechanica Slovaca. - ISSN 1335-2393. - Vol. 13, No. 2-A (2009), p. 47-52. (in English)
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