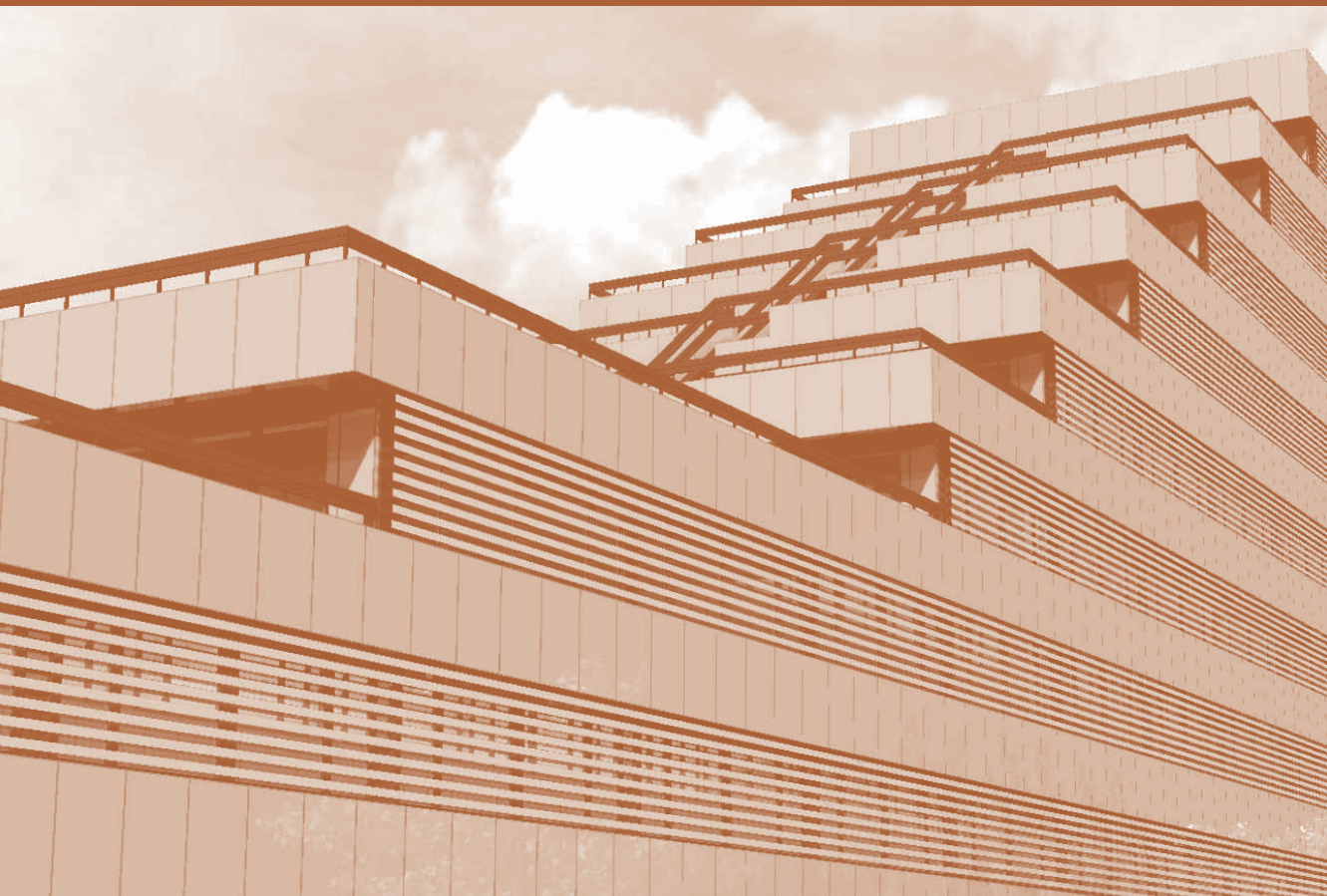


STU  
FEI

SLOVENSKÁ TECHNICKÁ  
UNIVERZITA V BRATISLAVE  
FAKULTA ELEKTROTECHNIKY  
A INFORMATIKY

# 2011



## INSTITUTE OF CONTROL AND INDUSTRIAL INFORMATICS

ANNUAL REPORT  
SLOVAK UNIVERSITY OF TECHNOLOGY IN BRATISLAVA

# INSTITUTE OF CONTROL AND INDUSTRIAL INFORMATICS

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



**Director of the Institute:**  
**prof. Ing. Ján Murgaš, PhD.**

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E-mail: [jan.murgas@stuba.sk](mailto:jan.murgas@stuba.sk)

**Vice-Director for Science and Research, Foreign Relations, and Industry Cooperation:** prof. Ing. Štefan Kozák, PhD.  
**Vice-Director for Teaching:** doc. Ing. Eva Miklovičová, PhD.  
**Secretary:** Mgr. Alena Foltinová  
**Office:** Katarína Macková

## General Information

Institute of Control and Industrial Informatics (ICII) is one of the top university institutes in Slovakia in the field of automation and control, industrial informatics, cybernetics, robotics and mechatronics. ICII was established in 2006 and consists of the former Department of Automation and Control, and the Department of Automatic Control Systems.

## Teaching

Institute of Control and Industrial Informatics (ICII) is a technical guarantor of the following accredited study programmes:

Bachelor study programmes (BEng/Bc): Industrial Informatics, Applied Informatics - application domain Information Technologies in Control

Master study programmes (MEng/MSc): Cybernetics, Robotics, Applied Mechatronics, Applied Informatics - application domain Information Technologies in Control.

Study programmes Robotics and Industrial Informatics can be studied in the distance learning programme.

Doctoral study programmes (PhD): Applied Mechatronics, Automation and Control, Cybernetics. These study programmes are provided in both internal (full-time) and external (part-time) forms.

Institute of Control and Industrial Informatics provides courses and final theses supervision also for other study programmes at FEI STU, e.g. Applied Informatics, Automotive Electronics.



## Research

The research at the institute focuses on development of automatic control methods and their application in drive systems, mobile robotics, industrial robotics, service robotics, digital image processing, variable structure control, control of systems with low damping, power engineering, manufacturing and chemical processes. Successively, re-

search interests started aiming at optimal control of complex systems, decentralized, adaptive, robust and predictive control approaches, soft computing methods in control, and at present mainly at network and robust hybrid control approaches. Individual research teams have proved their expertise by rich publishing activity including international journals, monographs and proceedings of important world-wide international conferences (IFAC, IEEE, ECC etc.)

At present, the main research topics are:

- Robust hybrid control methods
- Algebraic approaches to nonlinear systems control
- Advanced control methods of industrial processes
- New methods and software for networked control

Institute workers take part in scientific projects supported by the Scientific Grant Agency of the Ministry of Education of the Slovak Republic (VEGA), Cultural and Education Grant Agency (KEGA), Slovak Research and Development Agency (SRDA), NIL Fund, DAAD, and others. The Institute is the partner of the STU project Centre of Excellence for Smart Technologies, Systems and Services.

#### **Structure of the Institute:**

## Departments of the Institution Control and Industrial Informatics

The institute has 5 departments and administrative-economic body.

## Department of Systems and Signals

Head of department  
doc. Ing. Danica Rosinová, PhD.  
Deputy-head  
doc. Ing. Eva Miklovičová, PhD.

## Department of Automatic Control Methods

Head of department  
prof. Ing. Mikuláš Huba, PhD.  
Deputy-head  
doc. Ing. Katarína Žáková, PhD.

## Department of Information and Communication Systems

Head of department  
Ing. Martin Foltin, PhD.  
Deputy-head  
Ing. Ladislav Körösi, PhD.

## Department of Robotics and Artificial Intelligence

Head of department  
prof. Ing. Ladislav Jurišica, PhD.  
Deputy-head  
doc. Ing. Ivan Sekaj, PhD.

## Department of Applied Mechatronics

Head of department  
prof. Ing. Štefan Kozák, PhD.  
Deputy-head  
prof. Ing. Milan Žalman, PhD.

## I. STAFF

#### **Professors:**

prof. Ing. Mikuláš Huba, PhD., prof. Ing. Peter Hubinský, PhD.,  
prof. Ing. Ladislav Jurišica, PhD., 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. 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. Igor Béla, PhD., Ing. Pavol Bisták,  
Ing. Michal Blaho, Ing. Jozef Dorner, Ing. Peter Drahoš, PhD.,  
Ing. Mária Dúbravská, Ing. Jozef Dúbravský, Ing. Martin Foltin, PhD.,  
Ing. Mária Hypiúsová, PhD., Ing. Štefan Chamraz, PhD.,  
Ing. Slavomír Kajan, PhD., Ing. Ján Kardoš, PhD., Ing. Ladislav Körösi, PhD.,  
Ing. Marián Mrosko, PhD., Ing. Jana Paulusová, PhD.,  
Ing. Peter Ťapák, PhD., Ing. Miroslav Toman, PhD.

#### **Research Workers:**

doc. Ing. František Duchoň, PhD., Ing. Peter Fodrek, PhD.,  
doc. Ing. Miroslav Halás, PhD., Ing. Jaroslav Hanzel, PhD.,  
Ing. Marián Klúčik, Ing. Leo Mirafko, PhD., Ing. Jakub Osuský, PhD.,  
Ing. Danica Sovišová, Ing. Stanislav Števo, PhD., Ing. Jozef Vöröš, PhD.

#### **Technical Staff:**

Peter Detvaj, Ing. Radoslav Dibarbora, Mgr. Alena Foltinová,

Pavol Gašparovič, Katarína Horváthová, Katarína Macková (office),  
Jozef Turčánik

### PhD. Students:

Ing. Andrej Babinec, Ing. Pavol Bahník, Ing. Martin Dekan, Ing. Peter Didek,  
Ing. Zuzana Dideková, Ing. Branislav Dvorščák, Ing. Pavol Folvarčík,  
Ing. Martin Gažo, Ing. Matej Gímera, Ing. Peter Guzmický, Ing. Ivan Holič,  
Ing. Tomáš Huba, Ing. Ivan Hujší, Ing. Ľuboš Chovanec, Ing. Zoltán Janík,  
Ing. Andrej Kozák, Ing. Róbert Krasňanský, Ing. Marek Linder,  
Ing. Tomáš Malatínec, Ing. Quang Nguyen, Ing. Lukáš Palkovič,  
Ing. Peter Pászto, Ing. Ondrej Pašúth, Ing. Tatiana Radičová,  
Ing. Jozef Rodina, Ing. Jozef Škultéty, Ing. Alexandra Šlezárová,  
Ing. Juraj Švančara, Ing. Marián Tárnik, Ing. Stanislav Triáška,  
Ing. Michal Tölgyessy, Ing. Martin Urban, Ing. Peter Valach,  
Ing. Eugen Viszus, Ing. Vladislav Vodička, Ing. Daniel Vozák,  
Ing. Jakub Vonkomer

## II. EQUIPMENT

### II. 1 Teaching and Research Laboratories

- Adaptive Control Laboratory
- Continuous Process Control Laboratory (D-301)
- Optimization and Optimal Control Laboratory
- Multivariable Systems Laboratory
- Production Systems Modelling Laboratory
- Computational Intelligence Laboratory
- Joint Laboratory of Robotics (D-705)
- Actuators Laboratory
- Electronics Laboratory
- CAD CS Laboratory
- Automation Means Laboratory
- Sensors Laboratory
- SIEMENS Automation Technology Laboratory
- Smart Servosystems Laboratory
- Servosystems Laboratory
- Industrial Automation Laboratory
- Multimedia Systems Laboratory
- Nonlinear Systems Laboratory
- Robot Control Laboratory
- Mechatronics Laboratory
- Robotics Laboratory (basement D block - Ro )
- Special Systems Laboratory
- Real-Time Programming Tools Laboratory
- CAD Systems Laboratory
- Flying Devices Laboratory
- Control System Software Laboratory
- Discrete Event Systems Laboratory
- Laboratory of Embedded Control Systems
- Laboratory of PLC
- Laboratory of Applied Mechatronics
- Laboratory of Modelling and Simulation for Mechatronic Systems
- Laboratory of Bio-informatics and Info-Medicine

### II. 2 Special 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, Two-Tank System with Two Pumps, Shell and Tube Heat Exchanger, Rotary Servo Plant
- Digital Signal Processor Board for Real-Time Control
- Embedded MicroComputer Systems Freescale, Intel
- 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, Mirocrolgix 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, Protocol
- 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
- Mobile robot research kit
- Leica GPS1200
- Thermovision camera TIM160
- Laser scanner M2-iLAN-2-80/40
- iRobot Create robotic platforms

## 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 to Engineering  
(1st sem., 2-2 h) K.Žáková

Computer Architecture  
(2nd sem., 3-2 h) R. Ravas, Š. Chamraz

Modelling and Simulation  
(2th sem., 2-3 h) M. Foltin

Unix/Linux – Real Time Systems  
(3rd sem., 2-3 h) I. Sekaj, P. Fodrek

Automatic Control Theory 1  
(3rd sem., 2-3 h) M. Huba

Cybernetics 1  
(3rd sem., 2-2 h) D. Rosinová

Automatic Control Theory 2  
(4th sem., 2-3 h) J. Murgaš

Design of Web Applications  
(4th sem., 2-2 h) K. Žáková

Modelling and Simulation  
(4th sem., 2-2 h) M. Foltin

Electronics for Control Systems  
(4th sem., 2-2 h) J. Šturcel, M. Toman

Instrumentation of Control Systems  
(4th sem., 3-2 h) J.Šturcel,M.Toman,Š.Chamraz

Java-graphical interface CS  
(4th sem. 2-2 h) I. Sekaj, P. Fodrek

Internet and Intranet Applications  
(5th sem., 2-2 h) K. Žáková

Actuators  
(5th sem., 2-3 h) M. Žalman, J. Dúbravský

Software for Control Systems  
(5th sem., 2-3 h) I. Hantuch, L. Kőrösi

Optimization  
(5th sem., 2-2 h) D. Rosinová

Basic of Control Systems  
(5th sem., 2-2 h) P. Hubinský

Sensor Systems for Cars  
(5th sem., 2-2 h) V. Tvarožek, J. Šturcel

Automation 1  
(5th sem., 3-2 h) J. Murgaš, M.Mrosko

Monolithic microcontrollers  
(5th sem., 2-2 h) J. Šturcel, Š. Chamraz, R. Balogh

Cybernetics 2  
(5th sem., 2-2 h) J. Murgaš

Applied Computational Intelligence  
(5th sem., 2-2 h) I. Sekaj

Industrial Communication Bus  
(6th sem., 2-2 h) J. Šturcel, P. Drahoš

Industrial Communication Systems  
(6th sem., 3-2 h) M. Žalman, I. Bélaí

Robotics  
(6th sem., 3-2 h) P. Hubinský

Continuous Processes  
(6th sem., 3-2 h) E. Miklovičová

Nonlinear Systems  
(6th sem., 2-3 h) M. Huba

Automation 2  
(6th sem., 2-2 h) M. Žalman, I. Bélaí, J. Dúbravský

Control systems

(6th sem., 2-2 h) J. Murgaš, M. Mrosko

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

CAD of Software Systems  
(1st sem., 3-2 h) I. Hantuch

Multimedia in Control  
(1st sem., 3-2 h) M. Huba, P. Bisták

Optimal Control  
(1st sem., 3-2 h) A. Kozáková

Servosystems  
(1st sem., 3-2 h) M. Žalman, I. Bélaí

Theory of Automatic Control 3  
(1st sem., 2-3 h) M. Huba

Linear Systems Control  
(1st sem., 2-3 h) V. Veselý, M. Hypiúsová

Flexible Manufacturing Systems  
(1st sem., 3-2 h) L. Jurišica

Modelling and Simulation of Processes  
(1st sem., 3-2 h) E. Miklovičová

Artificial Neural Nets  
(1st sem., 3-2h) I. Sekaj, S. Kajan

Internet and Intranet Applications  
(1st sem., 2-3 h) K. Žáková

Matlab in Power Systems  
(1st sem., 2-3 h) Š. Kozák

Applications of Embedded Systems  
(1st sem., 2-2 h) Š. Kozák

Digital Control Methods  
(1st sem., 3-2 h) Š. Kozák, A. Kozáková, D. Rosinová

Sensor microsystems  
(1st sem., 2-3 h) V. Tvarožek, P. Drahoš

Evolutionary Computing  
(2nd sem., 2-3 h) I. Sekaj

Databases of Control Systems  
(2nd sem., 2-3 h) Z. Králová

Adaptive Control  
(2nd sem., 3-2 h) J. Murgaš

Discrete Event Systems  
(2nd sem., 3-2 h) A. Vitko

Multivariable System Control  
(2nd sem., 3-2 h) V. Veselý

Advanced Control Theory 1  
(2nd sem., 3-2 h) V. Veselý

Sensor Systems in CIM  
(2nd sem., 3-2 h) J. Šturcel, M. Toman

Control Methods and Algorithms  
(2nd sem., 3-2 h) P. Hubinský, J. Kardoš

Multimedia  
(2nd sem., 2-3 h) M. Huba, P. Bisták

System Identification  
(2nd sem., 2-3 h) E. Miklovičová

Modelling and Simulation of Mechatronic Systems  
(2st sem., 2-3 h) Š. Kozák

Software Development for Office Automation  
(3rd sem., 3-2 h) J. Murgaš, M. Kratmüller

Fuzzy and Neural Controllers

(3rd sem., 3-2 h) I. Sekaj  
 Smart Sensors Systems  
 (3rd sem., 3-2 h) J. Šturcel  
 Intelligent Systems  
 (3rd sem., 3-2 h) I. Sekaj, S. Kajan  
 Production Systems Management and Control  
 (3rd sem., 2-3 h) Z. Králová  
 Robots Modelling and Control  
 (3rd sem., 3-2 h) A. Vitko  
 Network Technologies  
 (3rd sem., 2-3 h) J. Murgaš, M. Foltin  
 Mobile Robotics Systems  
 (3rd sem., 3-2 h) L. Jurišica, F. Duchoň  
 Mechatronics  
 (3rd sem., 3-2 h) L. Jurišica  
 CAD of Control Systems  
 (3rd sem., 3-2 h) J. Šturcel, P. Drahoš  
 Database and visualization systems  
 (3rd sem., 2-3 h) Z. Králová, L. Kőrösi  
 Distributed embedded computer systems  
 (3rd sem., 2-2 h) J. Šturcel, Š. Chamraz, R. Balogh  
 Advanced methods of control of mechatron. systems  
 (3rd sem., 3-2 h) Š. Kozák, D. Rosinová  
 Electrical drives of mechatronic systems  
 (3rd sem., 2-2 h) L. Hüttner, I. Béla, M. Uhrík  
 Control of Complex Systems  
 (4th sem., 3-2 h) D. Rosinová  
 Intelligent Servosystems  
 (4th sem., 3-2 h) M. Žalman  
 Telematics and Control  
 (4th sem., 3-2 h) M. Huba, P. Bisták  
 Control of Technological Processes  
 (4th sem., 2-2 h) Š. Kozák

### III. 3 Undergraduate Study (Bc.) Distance Learning Method

Algorithmisation and Programming  
 (1st sem.) I. Sekaj, P. Fodrek  
 Introduction into Engineering  
 (1st sem.) K. Žáková  
 Computer Architecture  
 (2nd sem.) Š. Chamraz  
 Unix/Linux - Real Time Systems  
 (5th sem.) I. Sekaj, P. Fodrek  
 Automatic Control Theory 1  
 (5th sem.) M. Huba, D. Sovišová  
 Automatic Control Theory 2  
 (6th sem.) J. Murgaš, M. Dúbravský  
 Control System Software  
 (6th sem.) I. Hantuch, L. Kőrösi  
 Instrumentation of Control Systems  
 (6th sem.) J. Šturcel  
 Modelling and Simulation  
 (6th sem.) M. Foltin  
 Electronics for Control Systems  
 (6th sem.) J. Šturcel, M. Toman

Actuators  
 (7th sem.) M. Žalman, J. Dúbravský  
 Optimization  
 (7th sem.) D. Rosinová  
 Control System Software  
 (7th sem.) I. Hantuch, L. Kőrösi  
 Industrial Communication Systems  
 (8th sem.) M. Žalman, I. Béla  
 Robotics  
 (8th sem.) P. Hubinský  
 Continuous Processes  
 (8th sem.) E. Miklovičová  
 Nonlinear Systems  
 (8th sem.) M. Huba, D. Sovišová

### III. 4 Graduate Study (Ing.) Distance Learning Method

CAE of Mechatronics Systems  
 (1st sem.) J. Murín, M. Klúčik, V. Goga  
 Flexible Manufacturing Systems  
 (1st sem.) L. Jurišica  
 Multimedia in Control  
 (1st sem.) M. Huba, P. Bisták  
 Servosystems  
 (1st sem.) M. Žalman, I. Béla  
 Event Systems  
 (2nd sem.) A. Vitko  
 Sensor Systems in CIM  
 (2nd sem.) J. Šturcel, M. Toman  
 Robots Modelling and Control  
 (3rd sem.) A. Vitko  
 Mechatronics  
 (3rd sem.) L. Jurišica  
 Telematics and Control  
 (4th sem.) M. Huba, P. Bisták

## IV. RESEARCH PROJECTS

### IV. 1 National Scientific Projects

- Algebraic Methods in Nonlinear Control Systems: Theory and Applications. VEGA1/0369/10 Duration: 2010–2011 (completed) (M. Halás)
- New technologies in the teaching of subjects in the management of electrical and mechatronic systems, KEGA 006-005TUKE-4/2010, Duration: 2010–2011 (completed) (I. Béla)
- Generalized Modular Industrial Computer, APVV project VMSP-P-0059-09 (Š. Kozák)
- Robust MPC for hybrid systems, VEGA 1/1105/11 Duration 2011–2013 (solved) (Š. Kozák)
- Research and development of new information technologies for prediction and solution of critical situations and safety peoples, OP VaV 26240220060 Duration 2011–2013 (solved) (Š. Kozák)

- Design of a Methodology of Exploitation the 3D-Modelling and Virtual Reality Means in Conditions of Teaching in Specialized Laboratories. KEGA 3/7307/09 Duration 2009–2011 (completed) (L. Jurišica)
- Building Virtual and Remote Experiments for a Network of Online Laboratories. KEGA 3/7245/09 Duration 2009–2011 (completed) (M. Huba)
- Advanced Control Methods for Industrial Processes. VEGA 1/0544/09 Duration 2009–2011 (completed) (V. Veselý)
- Advanced Decentralized Control Methods in Network Control Systems. APVV-0211-10. Duration: 2010–2014 (solved) (V. Veselý)
- Integration and Development of Nonlinear and Robust Control Methods and Their Integration to Control Flying Vehicles. VEGA 1/0656/09 Duration 2009–2012 (M. Huba)
- Hybrid Triangulation - Optical System for Working Quality Checking of Tire. APVV VMSP-P-0030-09 Duration 2009–2011 (completed) (P. Drahoš)
- Optimization of the Mechatronic Systems Control. VEGA 1/0690/09 Duration 2009–2012 (solved) (L. Jurišica)
- Intelligent Control of Service Robot APVV VMSP - P-0004-09 Duration 2009–2011 (completed) (L. Jurišica)
- Building Grant for the Centre of Excellence for Smart Technologies, Systems and Services (SMART 1), ASF EÚ MS SR, ITMS 26240120005, Duration: 2009–2011 (completed) (J. Murgaš)
- Building Grant for the Centre of Excellence for Smart Technologies, Systems and Services (SMART 2), ASF EÚ MS SR, ITMS 26240120029, Duration: 2010–2012 (solved) (J. Murgaš)
- Advanced Methods for Network Control Systems. VEGA 1/0592/10 Duration: 2010–2011 (completed) (J. Murgaš)
- Competence Center for Intelligent Technologies to computerize and information systems and services ITMS: 26240220072 Duration: 2011–2014 (started) (J. Murgaš)
- Weldtech – stimuly – Mur – cooper.-. 4K38 Duration: 2011–2013 (started) (Murgaš)
- Research on high-tech welding technologies for industrial applications, Req-00048-0001 Duration: 2010–2013, (solved) (J. Murgaš)
- Laboratory for teaching and development of OpenSource projects, KEGA 032STU-04/2011 Duration: 2011–2013 (solved) (M. Žalman)
- Bioinspired multirobot coordination system APVV -0261-Hub-Sk5 Duration: 2011v2014 (started) (P. Hubinský)
- Control of a service robot 7042 RSR Duration: 2011–2012 (started) (F. Duchoň)
- Advanced inertial measurement unit for mobile robots 7046 AIMU Duration: 2011–2012 (started)

(J. Rodina)

- Intelligent navigation of a service robot 1/0177/11 Duration: 2011–2014 (solved) (A. Vitko)

## IV. 2 International Scientific Projects

- Enhancing NO-SK Cooperation in Automatic Control NIL-I-007-d Duration: 2009–2011 (completed) (M. Huba, K. Žáková)
- Autoweldlink. EÚ European Regional Development Fund ITMS 26240220033 Duration 2010–2014 (solved) (L. Jurišica)
- Cybernetics and Modern Methods of Control. Ceepus CII-CZ-0404-01-1011. Duration: 2010–2011 (completed) (K. Žáková)
- Cybernetics and Modern Methods of Control. Ceepus CII-CZ-0404-02-1112. Duration: 2011–2012 (solved) (K. Žáková)
- The establishment of the Vienna - Bratislava international center of expertise in the field of robotics (CENTROBOT OPCS-SK - AT), Duration: 2009–2013 (solved) (P. Hubinský)



## 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
- 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
- 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
- EVPU Nova Dubnica a.s.,
- Institut of Informatics, SAV, Bratislava
- Regotrans Rittmeyer, s.r.o., Bratislava
- Schneider Electric Slovakia, s.r.o., Bratislava
- Termoreg, s.r.o., Bratislava

## V. 2 International Cooperation

- Norwegian University of Science and Technology, Trondheim, Norway
- 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 - Hagen, Germany
- Heilbronn University, Germany

- Humusoft Ltd., Praha, Czech Republic
- Hungarian Fuzzy Association, Hungary
- IIASA Laxenburg, Austria
- InnoCat, 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 West Bohemia in Pilsen, Czech Republic
- University of Zagreb, Croatia
- Vytautas Magnus University, Kaunas, Lithuania
- FH Technikum, Vienna, Austria
- Technical University Riga
- Faculdade de Engenharia da Universidade do Porto, Portugal

## VI. THESES

### VI. 1 Master theses

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

#### Alumni Cybernetics, June 2011

- [1] Bobek B.: Control uncertainty systems with fuzzy and fuzzy type 2 (M. Foltin)
- [2] Dian M.: Network control design of laboratory machine (J. Murgaš)
- [3] Drapák V.: Predictive control of glucose (A. Kozáková)
- [4] Erneková A.: Matlab connection with Web (M. Foltin)
- [5] Ertel D.: Control of hoist (L. Körösi)
- [6] Ferenc J. Adaptive control of synchronous



- generator exciter (J. Murgaš)
- [7] Gabčo O.: Design of network control system for laboratory model (J. Murgaš)
- [8] Jesenko K.: Application of optimization methods in control (D. Rosinová)
- [9] Kmeť L.: Design of decentralized controller with certain performance (A. Kozáková)
- [10] Kollárik I.: Web application for synthesis PID controllers for SISO systems (M. Hypiúsová)
- [11] Kratochvíl P.: Web archive of publications (M. Foltin)
- [12] Kravianský V.: Control of the hydraulic system (E. Miklovičová)
- [13] Mihálik M.: The Natural Gas flow measurement (J. Šturcel)
- [14] Onufer Š.: Automotive antiblocking system (ABS) (A. Vitko)
- [15] Pillár B.: Modern methods in building automation (P. Drahoš)
- [16] Pípa P.: Measurement And Control of humidity in a closed space (J. Šturcel)
- [17] Potfaj M.: Predictive control of real system (M. Mrosko)
- [18] Serbinová K.: Discrete decentralized controller design in the frequency domain (A. Kozáková)
- [19] Silanič M.: Control of heating system (E. Miklovičová)
- [20] Szimonisz M.: Measurement Station for air pressed piping (R. Balogh)
- [21] Šalátek L.: OPC as an integration of various controlling and data acquisition platforms (P. Drahoš)
- [22] Ščasný P.: Adaptive controller of biological system (J. Murgaš)
- [23] Šeliga R.: Predictive control of MIMO systems (V. Veselý)
- [24] Šipoš K.: Application of optimization methods in control (D. Rosinová)
- [25] Toldy O.: Proposal of conveyer band control (P. Hubinský)
- [26] Toma J.: The optimization of the portal for support of innovations for search engines (M. Zajko)
- [27] Vozák D.: Synthesis of two degree of freedom controller (Š. Chamraz)
- [7] Grus M.: Animation robot dynamic model in Matlab (J. Kardoš)
- [8] Hegeduš P.: Discrete control of the placing of poles for the thermal system with limited control Action (P. Ľapák)
- [9] Hladký J.: Diagnostics of the production line by PLC (L. Mrafko)
- [10] Hološ T.: Usage of Apple iPhone device for mobile robot controlling (A. Šlezárová)
- [11] Hudec P.: Speed measurement system (J. Dúbravský)
- [12] Ivanco I.: Controlling of reaction wheel pendulum (L. Palkovič)
- [13] Kičín P.: DC motor control system using PLC (J. Dúbravský)
- [14] Kocian M.: Analysis of Security of RFID &#8211; radio-frequency identification (M. Stenclák)
- [15] Kolarovič M.: Design and implementation of motion system control (M. Žalman)
- [16] Kollár M.: Building automation system (J. Dúbravský)
- [17] Kompan P.: Actuator SMA from NiTi alloy (P. Drahoš)
- [18] Ligás M.: Information medicine &#8211; utilization informatics in bioresonance medicine (I. Hantuch)
- [19] Malatinec T.: Dosing system of medicament (R. Balogh)
- [20] Michlík M.: Damping vibration control of flexible arm traction drive (V. Goga)
- [21] Mikula R.: Servo with synchronous motor (J. Dúbravský)
- [22] Mikuláš M.: Positional system with radial magnetic bearings (M. Žalman)
- [23] Nízky M.: Control system APC 620 (I. Bélai)
- [24] Petrovič J.: Control unit of a mobile robot for use in education (R. Balogh)
- [25] Pulen A.: Comparison of PID algorithms on Modicon PLC (L. Körösi)
- [26] Slodičák B.: Demonstration program for the management of intelligent buildings (P. Drahoš)
- [27] Sorokač A.: RFID technology for tracking the movement of material (B. Mišota)
- [28] Strigáč M.: Mobile robot remote control (J. Hanzel)
- [29] Šašura J.: Control model with stepper motors SIMOSTEP (L. Mrafko)
- [30] Tóth F.: Complex design and realization of mobile robotic system (B. R. Ilkiv)
- [31] Tóth J.: Inspection telerobot (L. Jurišica)
- [32] Valach P.: Process simulation in InTouch and MS Excel (J. Kardoš)
- [33] Vandžura D.: DC motor system control (J. Dúbravský)
- [34] Zachar P.: Examination of the impact of human factor to the security of operation intelligent houses using virtual reality (I. Hantuch)
- [35] Zubo I.: The analysis subsystem; Acoustics; design for intelligent buildings (I. Hantuch)

### Alumni Robotics, June 20111

- [1] Arbet M.: The control of robot virtual 3D model (J. Kardoš)
- [2] Bosák Š.: Optimization of mobile robot control system (M. Klúčik)
- [3] Čutriková M.: Control of mobile robot (L. Jurišica)
- [4] Dvoršček B.: Management level (P. Drahoš)
- [5] Gehrer M.: Actuator with microprocessor (J. Dúbravský)
- [6] Gimera M.: Controlling technological conveyor (J. Dúbravský)

## Alumni Robotics, June 2011 (Distance Learning Method)

- [1] Horečná E.: Smart house (P. Drahoš)
- [2] Huba T.: Control of simple flying vehicle – para-copter (I. Pestún)
- [3] Hunča T.: Mobile robot trajectory optimisation using evolutionary algorithms (M. Klůčik)
- [4] Klučárová L.: Robust control of multivariable system (D. Rosinová)
- [5] Kohút M.: Controlling and monitoring an existing system in the laboratory of automation technique of SIEMENS (I. Béla)
- [6] Kováčik M.: Haptic Control of Mobile Transport Robot (P. Hubinský)
- [7] Lepko E.: Design and realization of the power source monitored and controlled by microcomputer (Š. Chamraz)
- [8] Longauer M.: Predictive control of the excitation of a synchronous generator using neural nets (M. Ernek)
- [9] Novoveská J.: Dynamic Robot Model Control (J. Kardoš)
- [10] Ondriaš M.: Navigation of mobile robot (A. Vitko)
- [11] Štofanič A.: Design and Realization of Thermostat based on Thermoelectric Elements (V. Štofanič)

## VI. 2 PhD. Theses

- [1] Bucz Š.: Engineering Methods of PID Controller Tuning for Specified Performance (V. Veselý)
- [2] Häuptle P.: Advanced Control of Servomechanism with Flexible Gear-box (P. Hubinský)
- [3] Cigánek J.: Contribution to the problem of robust control using stable polytope of reflection vectors (Š. Kozák)
- [4] Hricko J.: Analysis, modelling and optimization of compliant mechanisms design (A. Vitko)
- [5] Thurský B.: Robust variable structure control systems (VSCR) in robotics and mechatronics (P. Hubinský)

## VII. OTHER ACTIVITIES

### Conferences organized by the Institute:

- 13th Conference of Doctoral Students ELITECH'11 - (A. Kozáková - responsible for organization, editor of Conference Proceedings)
- Istrobot: Competition of Mobile Robots, Bratislava, SK, April 2011 (R. Balogh)
- Freescale Race Competition, FEI STU, Bratislava May 2011 (R. Balogh)
- 2nd International Conference on Robotics in Education, Wien, 2011, (R. Balogh, P. Hubinský)

### Other events:

- Conferences Participation, Membership in Committees:
  - ELOSYS 2011, Trenčín. SK. October 2011, J. Murgaš,

- I. Sekaj, M. Foltin – 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 – Editorial Board member)
- Transactions of the Institute of Measurement and Control (A. Vitko – Associate editor)
- CLAWAR Conference Nagoya (A. Vitko - Member of International Program Committee)
- Accreditations Board of SAS (L. Jurišica – member)
- Profibus Slovakia Association (P. Drahoš – chairman)
- Cooperation with Encyclopedic Institute of Slovak Academy of Sciences on the Slovak Encyclopedia (Lexical Group Cybernetics): L. Harsányi, 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): Chair of Main Committee - Š. Kozák, Vice-chairs: V. Veselý, M. Huba
- Journal of Cybernetics and Informatics: Š. Kozák - Editor in Chief, D. Rosinová - Managing Editor
- Journal of Electrical Engineering: V. Veselý - member of Editorial Board
- Slovak Society for Operations Research: Z. Kráľová - council member
- MacPlanet: M. Foltin – editor internet journal www.macplanet.sk
- European Robotics Week-active-participation (R. Balogh)

### Projects:

- Schneider-Electric Courses, Automation and Control Systems (M. Mrosko)

## VIII. MEMBERSHIP IN INSTITUTIONS/ COMMITTEES

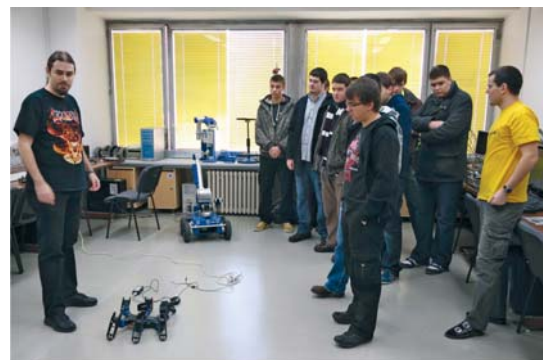
### VIII. 1 Membership in National Institutions/ Committees

- The Accreditation Commission is an advisory body to the Government, the Working Group Research 16 (L. Jurišica, J. Murgaš, members)
- Accreditation Commission of the SAS (L. Jurišica, member)
- Faculty of Informatics and Information Technology (Š. Kozák, member of Scientific Board)
- Slovak Society for Operations Research (Z. Králová, member)
- Institute of Informatics Slovak Academy of Sciences (Š. Kozák, member of Scientific Board)

### VIII. 2 Membership in International Institutions/ Committees

- 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 member of the Technical Committee on Nonlinear Control Systems (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)
- IFAC member of Technical Committees: TC 3. 1 Computers for Control (Š. Kozák)
- IFAC member of Technical Committees: TC 3. 2 Computational Intelligence in Control (Š. Kozák)
- IFAC member of the Technical Committee on Nonlinear Control Systems (M. Halás)
- IFAC member of the CC4-Mechatronics, Robotics and Components (P. Hubinský)
- Profibus International (P. Drahoš)
- CLAWAR Association, member of the Board of Trustees (A. Vitko)
- IMEKO, member of the Technical Committee on Measurement and Control in Robotic (A. Vitko)
- Slovak Society for Cybernetics and Informatics-SSCI (Š. Kozák, chairman, V. Veselý, M. Huba)
- European Coordination Committee for Artificial Intelligence-ECCAI, member, (Š. Kozák)



# IX. PUBLICATIONS

## IX. 1 Journals

- [1] BACHRATÝ, M. - HUBINSKÝ, P.: Robotic Middleware Based on Protothreads. In: ATP Journal plus. - ISSN 1336-5010. - No. 1. Systems of Automatic Control (2011), p. 45-47. (in English)
- [2] BISTÁK, P. - FOLVARČÍK, P.: Remote Laboratory Java Server Based on JACOB Project. In: International Journal of Online Engineering. - ISSN 1861-2121. - Vol. 7, No. 1 (2011), p. 33-36. (in English)
- [3] BUCZ, Š. - MARIČ, L. - HARSÁNYI, L. - VESELÝ, V.: Easy Tuning of Robust PID Controllers Based on The Design-Oriented Sine Wave Type Identification. In: ICIC Express Letters. - ISSN 1881-803X. - Vol. 5, No. 3 (2011), p. 563-572. (in English)
- [4] BUCZ, Š. - HARSÁNYI, L. - VESELÝ, V.: Tuning Robust PID Controller. In: Elektrotechnický magazín. - ISSN 1210-5422. - Vol. 21, No. 3 (2011), p. 34-37. (in Czech)
- [5] DEKAN, M. - DUCHOŇ, F. - VITKO, A.: Global Metric Map for Mobile Robotics. In: ATP Journal plus. - ISSN 1336-5010. - No. 1. Systems of Automatic Control (2011), p. 65-68. (in English)
- [6] DEKAN, M. - DUCHOŇ, F. - JURIŠICA, L. - VITKO, A.: Probabilistic Model of Laser Rangefinder. In: AD ALTA: Journal of Interdisciplinary Research. - ISSN 1804-7890. - Vol. 1, Iss. 2 (2011), p. 151- 155. (in English)
- [7] DORNER, J. - DÚBRAVSKÝ, J.: Control of Automatized Stacker Crane with PLC System for Warehouses. In: ATP Journal. - ISSN 1335-2237. - Vol. 18. No. 9 (2011), p. 46-49. (in Slovak)
- [8] DORNER, J.: Intelligent Control Systems - Introduction. In: Posterus. - ISSN 1338-0087. - April (2011), <http://www.posterus.sk/?p=10361>. (in Slovak)
- [9] DRAHOŠ, P. - KUTIŠ, V. - DÚBRAVSKÝ, J. - SEDLÁR, T.: Design and Simulation of SMA Actuator. In: International Review of Automatic Control. - ISSN 1974-6059. - ISSN 1974-6067. - Vol. 4, No. 4 (2011), p. 588-593. (in English)
- [10] DRAHOŠ, P. - BÉLAI, I.: Diagnostic of Physical Layer Profibus DP. In: Automa. - ISSN 1210-9592. - Vol. 17, No. 4 (2011), p. 2-6. (in Slovak)
- [11] DÚBRAVSKÁ, M. - PAULUSOVÁ, J.: Designing and Implementation of Software Solution for Processing of Measurement Rates. In: ATP Journal plus. - ISSN 1336-5010. - No. 1. Systems of Automatic Control (2011), p. 31-33. (in English)
- [12] DUCHOŇ, F. - KLÚČIK, M. - JURIŠICA, L. - VITKO, A. - KAŠTAN, D.: Mobile Robots with Leica GPS1200. In: Reporter. - Iss. 65 (2011), p. 30-31. (in English)
- [13] DUCHOŇ, F. - KLÚČIK, M. - DEKAN, M.: Search and Rescue Robots. In: Posterus. - ISSN 1338-0087. - October (2011), <http://www.posterus.sk/?p=11934>. (in Slovak)
- [14] DUCHOŇ, F. - DEKAN, M. - KLÚČIK, M.: Service Robotics for Homes. In: Posterus. - ISSN 1338-0087. - November (2011), <http://www.posterus.sk/?p=12020>. (in Slovak)
- [15] DUCHOŇ, F. - JURIŠICA, L. - KLÚČIK, M. - VITKO, A.: Service Robots. In: ATP Journal plus. - ISSN 1336-5010. - No. 1. Systems of Automatic Control (2011), p. 53-56. (in English)
- [16] FU, G. - HALÁS, M. - KOTTA, Ü. - LI, Z.: Some Remarks on Kahler Differentials and Ordinary Differentials in Nonlinear Control Theory. In: Systems and Control Letters. - ISSN 0167-6911. - Vol. 60 (2011), p. 699-703. (in English)
- [17] HALÁS, M.: Discrete-Time Disturbance Decoupling of Coupled Tanks. In: ATP Journal plus. - ISSN 1336-5010. - No. 2: Process Control (2011), p. 40-44. (in English)
- [18] HANZEL, J. - JURIŠICA, L. - KLÚČIK, M. - DUCHOŇ, F.: Identification of the Experimental Ultrasonic System Parameters. In: AD ALTA: Journal of Interdisciplinary Research. - ISSN 1804-7890. - Vol. 1, Iss. 2 (2011), p. 138-141. (in English)
- [19] HANZEL, J. - JURIŠICA, L. - KLÚČIK, M. - VITKO, A.: Ultrasonic Mapping System. In: ATP Journal plus. - ISSN 1336-5010. - No. 1. Systems of Automatic Control (2011), p. 77-80. (in English)
- [20] HUBA, M. - ĎAPÁK, P.: Developing E-Course Robust Constrained PID Control. In: International Journal of Emerging Technologies in Learning. - ISSN 1863-0383. - Vol. 6, Special Issue 1 (2011), p. 27-30. (in English)
- [21] HUBINSKÝ, P. - CHOVANEC, Ľ.: The Position Prediction for Bridge Crane Using Input Shaping Methods. In: ATP Journal plus. - ISSN 1336-5010. - No. 1. Systems of Automatic Control (2011), p. 34-37. (in English)
- [22] HUBINSKÝ, P.: Use a Software for Advantageous Price 1. In: PC revue. - ISSN 1335-0226. - Vol. 19, No. 1 (2011), p. 82. (in Slovak)
- [23] HUBINSKÝ, P.: Use a Software for Advantageous Price 2. In: PC revue. - ISSN 1335-0226. - Vol. 19, No. 2 (2011), p. 102. (in Slovak)
- [24] HUBINSKÝ, P.: Use a Software for Advantageous Price 3. In: PC revue. - ISSN 1335-0226. - Vol. 19, No. 3 (2011), p. 106. (in Slovak)

- [25] HUBINSKÝ, P.: Use a Software for Advantageous Price 4. In: PC revue. - ISSN 1335-0226. - Vol. 19, No. 4 (2011), p. 108. (in Slovak)
- [26] HUBINSKÝ, P.: Use a Software for Advantageous Price 5. In: PC revue. - ISSN 1335-0226. - Vol. 19, No. 5 (2011), p. 93. (in Slovak)
- [27] HUBINSKÝ, P.: Use a Software for Advantageous Price 6. In: PC revue. - ISSN 1335-0226. - Vol. 19, No. 6 (2011), p. 95. (in Slovak)
- [28] HUBINSKÝ, P.: Use a Software for Advantageous Price 7. In: PC revue. - ISSN 1335-0226. - Vol. 19, No. 7 (2011), p. 95. (in Slovak)
- [29] HUBINSKÝ, P.: Use a Software for Advantageous Price 8. In: PC revue. - ISSN 1335-0226. - Vol. 19, No. 8 (2011), p. 90. (in Slovak)
- [30] HUBINSKÝ, P.: Use a Software for Advantageous Price 9. In: PC revue. - ISSN 1335-0226. - Vol. 19, No. 9 (2011). (in Slovak)
- [31] HUBINSKÝ, P.: Use a Software for Advantageous Price 10. In: PC revue. - ISSN 1335-0226. - Vol. 19, No. 10 (2011), p. 95. (in Slovak)
- [32] HUBINSKÝ, P.: Use a Software for Advantageous Price 11. In: PC revue. - ISSN 1335-0226. - Vol. 19, No. 11 (2011), p. 110. (in Slovak)
- [33] HUBINSKÝ, P.: Use a Software for Advantageous Price 12. In: PC revue. - ISSN 1335-0226. - Vol. 19, No. 12 (2011), p. 106. (in Slovak)
- [34] HYPIUSOVÁ, M. - KAJAN, S.: Robust Controller Design for the Laboratory Model of a DC Motor. In: ATP Journal plus. - ISSN 1336-5010. - No. 1. Systems of Automatic Control (2011), p. 13-17. (in English)
- [35] JANÍK, Z. - ŽÁKOVÁ, K.: Online Design of Matlab/Simulink Block Schemes. In: International Journal of Emerging Technologies in Learning. - ISSN 1863-0383. - Vol. 6, Special Issue 1 (2011), p. 11-13. (in English)
- [36] JÁNO, M. - ŽÁKOVÁ, K.: SciLab Based Remote Control of Thermo-Optical Plant. In: International Journal of Online Engineering. - ISSN 1861-2121. - Vol. 7, No. 4 (2011), p. 10-15. (in English)
- [37] JURÍŠICA, L. - DUCHOŇ, F. - DEKAN, M.: Dynamic Obstacle Avoidance in Mobile Robotics. In: ATP Journal plus. - ISSN 1336-5010. - No. 1. Systems of Automatic Control (2011), p. 69-73. (in English)
- [38] JURÍŠICA, L. - DUCHOŇ, F.: Global Navigation of Mobile Robots on Basis of Geometrical Map. In: ATP Journal. - ISSN 1335-2237. - Vol. 18, No. 2 (2011), on-line ([http://www.atpjournalsk/buxus/docs/casopisy/atp\\_2011/atp\\_2\\_2011\\_Teoria2.pdf](http://www.atpjournalsk/buxus/docs/casopisy/atp_2011/atp_2_2011_Teoria2.pdf)). (in Slovak)
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- [41] JURÍŠICA, L. - VITKO, A. - DUCHOŇ, F. - KAŠTAN, D.: System GPS-Principle, Advantages and Shortages (part 2). In: Automa. - ISSN 1210-9592. - Vol. 17, No. 2 (2011), p. 38-40. (in Slovak)
- [42] JURÍŠICA, L. - VITKO, A. - DUCHOŇ, F. - KAŠTAN, D.: System GPS-Principle, Advantages and Shortages (part 1). In: Automa. - ISSN 1210-9592. - Vol. 17, No.1 (2011), p. 50-53. (in Slovak)
- [43] KAJAN, S. - LAJTMAN, M. - DIDEKOVÁ, Z.: Cluster Analysis Using Self-Organizing Maps. In: ATP Journal plus. - ISSN 1336-5010. - No. 1. Systems of Automatic Control (2011), p. 22-25. (in English)
- [44] KAJAN, S. - HYPIUSOVÁ, M.: Robust Controller Design Using Genetic Algorithm. In: ATP Journal plus. - ISSN 1336-5010. - No. 1. Systems of Automatic Control (2011), p. 18-21. (in English)
- [45] KLÚČIK, M. - DUCHOŇ, F. - JURÍŠICA, L. - VITKO, A. - BABINEC, A.: The Welding Spot Detection in the Automated Welding of Large-Capacity Tanks and Pipes. In: Zvárač. - ISSN 1336-5045. - Vol. 8, No. 4 (2011), p. 12-15. (in Slovak)
- [46] KÖRÖSI, L.: Neural Network Modeling and Control Using Programmable Logic Controller. In: Posterus. - ISSN 1338-0087. - December (2011), <http://www.posterus.sk/?p=12304>. (in English)
- [47] KÖRÖSI, L. - MRAFKO, L. - MROSKO, M.: PLC and their Programming - 2. PLC, PAC, DCS - Who Whom? In: Posterus. - ISSN 1338-0087. - October (2011), <http://www.posterus.sk/?p=11925>. (in English)
- [48] KOZÁK, Š.: Modern and Practical Approaches of the PID Controllers Implementation (1). In: ATP Journal. - ISSN 1335-2237. - Vol. 18, No. 5 (2011), p. 52-54. (in Slovak)
- [49] KOZÁK, Š.: Modern and Practical Approaches of the PID Controllers Implementation (2). In: ATP Journal. - ISSN 1335-2237. - Vol. 18, No. 4 (2011), p. 30-31. (in Slovak)
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- [51] KOZÁK, Š.: Modern and Practical Approaches of the PID Controllers Implementation (4). In: ATP Journal. - ISSN 1335-2237. - Vol. 18, No. 7 (2011), p. 57-59. (in Slovak)

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