

		Wednesday		3rd December				
		HALL-AULA		STUCCO HALL				
	09:00					Registration		
	10:00							
	10:00	Opening ceremony				-		
	10:15					-		
Power Electronics	10:15	KEYNOTE LECTURE - Vladimir Oplustil (UNIS):		✓		-		
	10:45	ESPOSA – Efficient Systems and Propulsion for Small Aircraft		✓		-		
	10:45	Dalibor Cervinka, Jan Knobloch, Petr Prochazka, Josef Kadlec, Radoslav Cipin, Ivo Pazdera:		✓		-		
	11:00	Electric Powered Airplane VUT 051 RAY (93)		✓		-		
	11:00	Petr Prochazka, Jan Knobloch, Dalibor Cervinka, Josef Kadlec, Radoslav Cipin, Ivo Pazdera:		✓		-		
	11:00	Communication and Energy Management System of Small Electric Airplane (94)		✓		-		
	11:15	Zdenek Katolicky, Bohuslav Busov, Milada Bartlova:		✓		-		
	11:15	Turbojet Engine Innovation and TRIZ (106)		✓		-		
Electric Machines and Drives I	11:30	Dominik Łuczak, Krzysztof Siembab:		✓	ICT and Communications	11:30	Petr Chlumsky, Zdenek Brabec, Lukas Cepa, Milos Kozak:	✓
	11:45	Comparison of fault tolerant control algorithm using space vector modulation of PMSM drive (58)		✓		11:45	Benchmarking Methodology for IP Testing in Industrial Networks (12)	✓
	11:45	Konrad Urbanski:		✓		11:45	Jiri Holecek, Zdenek Brabec, Vojtech Tikovsky:	✓
	12:00	Comparison of Methods for Back EMF Estimation at Low Speed for PMSM Drive (80)		✓		12:00	Smart Grids Process Framework Assessment Through Process Modeling (56)	✓
	12:00	Bogdan Fabianski, Bartlomiej Wicher:		✓		12:00	Juraj Dudak, Martin Skovajsa, Ivan Sladek:	✓
	12:15	Control algorithms in distributed system of three wheeled electric vehicle (128)		✓		12:15	Proposal of a Communication Protocol for Smart Sensory Systems (75)	✓
	12:15	Bartlomiej Wicher, Krzysztof Siembab: The impact of deterioration of the absolute position transducer on the electric drive with Permanent Magnet Synchronous Motor (172)		✓	12:15	Anatolijs Zabasta, Kaspars Kondratijevs, Nadezhda Kunicina, Leonids Ribickis:	✓	
	12:30				12:30	Wireless Sensor Networks and SOA Development for Optimal Control of Legacy Power Grid (151)	✓	
	12:30	Conference lunch						
	13:30							
Power Electronics	13:30	Jan Martis, Pavel Vorel:		✓	Energy Harvesting	13:30	Joon Sung Park, Junbo Yun, Ju Lee:	✗
	13:45	Apparatus for Induction Heating 2.5 kW Using a Series Resonant Circuit (82)		✓		13:45	A Study on Power Generation from Sea Waves by Using Linear Generator (48)	✗
	13:45	Stepan Janous, Dusan Janik, Tomas Kosan, Petr Kamenicky, Zdenek Peroutka:		✓		13:45	Marco Nesarajah, Felix Felgner, Georg Frey:	✓
	14:00	Comparative study of vector PWM and FS-MPC for 3-level Neutral Point Clamped converter (178)		✓		14:00	Modeling and Simulation of a Thermoelectric Energy Harvesting System for Control Design Purposes (55)	✓
	14:00	M. V. Pronin, A. G. Voronov, T. Nahdi, I. A. Pimenova:		✓		14:00	Ondrej Rubes, Jan Smilek, Zdenek Hadas:	✓
	14:15	Single-phase active rectifiers in a cascade frequency converter (42)		✓		14:15	Development of Vibration Energy Harvester Fabricated by Rapid Prototyping Technology (146)	✓
	14:15	Tomas Kerlin:		✓		14:15	Ludek Janak, Vladislav Singule:	✓
	14:30	Electrical Power Distribution Boxes for Small Aircraft (98)		✓		14:30	Energy Harvesting for Aerospace: Application Possibilities (191)	✓
	14:30	Josef Kadlec, Radoslav Cipin, Dalibor Cervinka, Jan Knobloch, Petr Prochazka, Ivo Pazdera:		✓		14:30	Lukas Vojtech, Lukas Kypus, Lukas Kvarda, Nicolas Thiard, Jerbi Yannis:	✓
	14:45	Modular System of Converters with Interleaved Structure (111)		✓		14:45	Solar and Wireless energy Harvesting semi-active UHF RFID tag Design and Prototyping (164)	✓
14:45	Tomas Kosan, Martin Jara, Dusan Janik, Zdenek Peroutka:		✓	14:45	Marek Borowiec:	✓		
15:00	Complete Development Platform for Multi-Level Converters and Complex Control Algorithms (166)		✓	15:00	Energy Harvesting in a Nonlinear Cantilever Beam System Excited by Harmonic and Random Vibrations (184)	✓		
15:00	Jin-Hong Kim, Joon Sung Park, Jun-Hyuk Choi, In-Soung Jung, Chung-Yuen Won:		✗	15:00	Krzysztof Kecik:	✓		
15:15	Development of High Power Stack for Offshore Wind Power Generation (51)		✗	15:15	Energy Harvesting of an Autoparametric Pendulum System (187)	✓		
		Free evening						

Thursday 4th December							
HALL-AULA			STUCCO HALL				
Production Machines	09:00	Matthias Rehm, Johannes Quellmalz, Holger Schlegel, Reimund Neugebauer: Modelling and parameterization of mechanically coupled linear motors as part of a holistic mechatronic development methodology (49)	✓	Control of Mechatronic Systems	09:00	Martin Juhas, Oliver Moravcik, Bohuslava Juhasova, Zuzana Sutova: Sensitivity Analysis of Mechatronic System with Flexibility Control (50)	✓
	09:15	Johannes Quellmalz, Matthias Rehm, Holger Schlegel, Reimund Neugebauer: Influence analysis on the model comparison performance index for servo drive control (62)	✓		09:15	Ondrej Andrs, Zdenek Hadas, Jiri Kovar: Introduction to Design of Speed Controller for Fuel Pump (192)	✓
	09:30	Jiri Tuma, Petr Blecha, Jiri Zahalka, Zdenek Tuma: Prediction method for electrical energy consumption of the machine tool in the usage stage (107)	✓		09:30	Yu Zhang, Timothy Gordon: Decomposition of Steering Angle Measurements Inspired by Pulse Control Model for Lane Keeping (124)	✓
	09:45	Roland Janco, Pavel Elesztos, Ladislav Ecsi: Experimental and Numerical Solutions for Friction Stir Welding the Plates (188)	✗		09:45	Radoslav Cipin, Ivo Pazdera, Petr Prochazka, Jan Knobloch, Dalibor Cervinka, Josef Kadlec: Discrete and Continuous Fractional Controllers (86)	✓
	10:00	Michal Holub, Josef Knobloch: Geometric accuracy of CNC machine tools (206)	✓		10:00	Miroslav Jirgl, Rudolf Jalovecky: Modelling and Simulations of Longitudinal Flight (168)	✓
	10:15	Jakub Stetina, Tomas Brezina, Jan Vetiska, Zdenek Hadas: Multibody Model of Heavy Machine Tool (215)	✓		10:15	David Kraus, Jakub Nemecek: Low Cost Fixed Wing UAV for Development of Control Laws (207)	✓
	10:30				10:30		
	11:00				11:00		
Modelling and Simulation	11:00	Michal Dub, Alexandr Stefek: Model Cooperation in Particle Swarm Optimization (109)	✓	Mechatronic Systems in Automotive	11:00	Daniel Busuttill, Glenn Camilleri, Mario Farrugia: Mechatronics for Water Injection in SI Engine (63)	✓
	11:15	Dominik Luczak, Krzysztof Nowopolski: Identification of Multi-mass Mechanical Systems in Electrical Drives (117)	✓		11:15	Vladimir Cech, Jiri Jevicky, Milan Jus: Simulation of the Vehicle Passing the Gun Stabilization Bump Course of the Aberdeen Proving Ground (195)	✓
	11:30	Maciej Gniadek: Auto Tuning of Systems with Input Shaping (153)	✓		11:30	Timothy Gordon, Yangyan Gao: A Flexible Hierarchical Control Method for Optimal Collision Avoidance (127)	✓
	11:45	Anamaria Oros, Roxana Daniela Amariutei, Andi Buzo, Monica Rafaila, Marina Topa, Georg Pelz: Robustness Optimization of Heterogeneous Systems in Multi-Objective Scenarios (167)	✓		11:45	Juraj Madaras, Viktor Ferencey, Martin Bugar, Jan Danko: Algorithms for Vehicle Control Stability System with 4 WS (144)	✓
	12:00	Kaplan Kaplan, Samet Bayram, Melih Kuncan, H.Metin Ertunc: Feature Extraction of Ball Bearings in Time-Space and Estimation of Fault Size with Method of ANN (214)	✗		12:00	Vejupek Josef, Grepel Robert, Krejci Petr, Lesak Frantisek, Matous Karel: Hardware-In-the-Loop Simulation for Automotive Parking Assistant Control Units (195)	✓
	12:15	Tomas Brezina, Lukas Brezina, Jakub Stetina, Jiri Marek: Design of Optimal Parameter Values of Mechatronic System with Flexible Bodies Using a Block Model (222)	✓		12:15	Mihai Lungu, Romulus Lungu: State Estimation of the Controlled Generic Reentry Vehicles via Multiple Observer (133)	✗
	12:30				12:30		
	13:30				13:30		
Electric Machines and Drives II	13:30	Karel Hruska, Vladimir Kindl: A Comprehensive Approach to Calculation of the Air Gap Magnetic Flux Density in Induction Machines with Eccentrically Placed Rotor (36)	✓	Robotics	13:30	Jaroslav Mlynek, Tomas Martinec: Mathematical Model of Composite Manufacture and Calculation of Robot Trajectory (46)	✓
	13:45	Jan Barta, Cestmir Ondrusek: Design and Optimization of Synchronous Reluctance Machine (47)	✓		13:45	Mario Farrugia: Integration of Force Sensing for Robotic Generic Assembly (64)	✓
	14:00	Tomaz Munih, Damijan Miljavec: A method for accelerated ageing of electric machine insulation (115)	✓		14:00	Jan Mazal, Petr Stodola, Milan Podhorec: UGV development with supervised autonomy (141)	✓
	14:15	Jan Sobra, Miroslav Byrtus, Vladimir Kindl, Karel Hruska: Analysis of rotor's eccentricity influence on bearing load of induction machine (130)	✓		14:15	Mikołaj Wasielec, Marek Wąsik: Active stabilization of a humanoid robot base on inertial measurement unit data (171)	✓
	14:30	Petr Losak, Radek Vlach: Study of the response of the shaft loaded by Unbalanced Magnetic Pull (177)	✓		14:30	Akif Durdu, Halil Cetin, Hasan Komur: Robot Imitation of Human Arm via Artificial Neural Network (197)	✓
	14:45	Jiri Klima, Ondrej Vitek: Analysis of high-speed induction motor (202)	✓		14:45	Stanislav Vechet, Jiri Krejsa, Kuo-Shen Chen: Sensor Failure Detection in Autonomous Mobile Robot Application (201)	✓
	15:00				15:00		
	15:30				15:30		
Coffee break							
Poster session							
Conference banquet							

Friday 5th December							
HALL-AULA			STUCCO HALL				
KEYNOTE LECTURE	09:00 10:00	Pavol Bauer: Integration of renewable energy sources and electric mobility in DC networks and future DC transmission grid (DC Ready Devices – Is Redimensioning of the Rectification Components Necessary? (230))	✓				
Vibrations in Mechatronics	10:00 10:15	Ali Hassan, Angel Torres-Perez, Stefan Kaczmarczyk, Phil Picton: Active Vibration Control Strategies for a Free Piston Stirling Engine Generator (19)	✓	Sensors and Measurement	10:00 10:15	Kutilek Patrik, Socha Vladimir, Svoboda Zdenek, Smrcka Pavel: Evaluation of Muscular Moment Asymmetry using Bilateral Cyclograms (69)	✓
	10:15 10:30	George Juraj Stein, Peter Tobolka, Rudolf Chmurny: Preliminary Investigations of a Vibration Attenuator Based on Eddy Current Principle (43)	✓		10:15 10:30	Vladimir Socha, Patrik Kutilek, Alexandr Stefek, Lubos Socha, Jakub Schlenker, Karel Hana, Stanislav Szabo: Evaluation of relationship between the activity of upper limb and the piloting precision (160)	✓
	10:30 10:45	Zdenek Hadas, Filip Ksica: Model-based Desing of Testing Electromagnetic Shaker with Flexible Beam (190)	✓		10:30 10:45	Lubos Kotek, Michal Holub, Jan Vetiska, Kamil Subrt, Zdenek Hadas, Petr Blecha: Comparison of Suitability of Tracking Marks for Optical Measurement of Displacement (45)	✓
	10:45 11:15	Coffee break					
Smart systems	11:15 11:30	Kang Zhang, Pengxing Yi, Yahui Li , Xuming Zhang, Zailin Guan: Numerical Investigation of the lift-off effect on the cut-off frequency in the Rayleigh wave (10)	✓	Education in Mechatronics	11:15 11:30	Konstantin Zimenko, Dmitry Bazylev, Alexey Margun, Artem Kremlev: Application of Innovative Mechatronic Systems in Automation and Robotics Learning (39)	✓
	11:30 11:45	Veronika Safarova, Kveta Malachova, Jiri Militky: Electromechanical Analysis of Textile Structures Designed for Wearable Sensors (41)	✓		11:30 11:45	Karel Hruska, Lucie Hornikova, David Koten: Educational Machinery with a Brushless Excited Synchronous Machine (137)	✓
	11:45 12:00	Chaohao Chen, Yang Wu, Tao Dong: Dipsticks integrated on smart diapers for colorimetric analysis of urinary tract infections (208)	✓		11:45 12:00	Huseyin Emre Guner, Oguz Tekelioglu, Murat Ambarkutuk, Levent Bilginer, Ali Aşkın, Serkan Erkan: Distance Mechatronic Laboratory for SMEs Universities and Vocational High Schools in Turkey (209)	✗
	12:00 12:15	Richard Zeleny, Michal Lucki: Design of a Narrowband Photonic Filter Based on the Leaky Outer Defect Mode (212)	✗		12:00 12:15	Mehmet Kivanc Celik, Engin Yesil, Tufan Kumbasar: Tuning Methods and Educational GUI Design for 1-DoF and 2-DoF PI(D) Controllers (211)	✗
	12:15 12:30	Jennifer Panugan Bergstrøm, Tao Dong: An Experimental Study on Capacitive Touch Sensor's Response to E. coli Bacteria (213)	✓		12:15 12:30		
	12:30 12:45	Closing ceremony					
	12:45 13:30	Conference lunch					

POSTER SESSION - LIST

ID	author: title	
(9)	Jan Farlik, Alexandr Stefek, Josef Casar: Multi-agent system as operational center support	✓
(20)	Vladimir Kindl, Karel Hruska, Jan Sobra, Miroslav Byrtus: Effect of Induction Machine's Load and Rotor Eccentricity on Space Harmonics in the Air Gap Magnetic Flux Density	✓
(32)	Jiri Krejsa, Stanislav Vechet: Covering the Working Space of Mobile Robot	✓
(37)	Min Zhao, Xiao-han Tian, Ruo-yun Zhang, Lin-lin Wu: A wireless passive tension sensor	✓
(38)	Oleg Sivkov, Martin Novak: Implementation of SiC inverter for high frequency, medium voltage applications	✓
(40)	Roman Pechanek, Vladimir Kindl, Bohumir Hana: Determination of Critical Temperature of Small Squirrel Cage Motor through FEA	✓
(44)	Ladislav Gregor, Libor Drazan, Jiri Vesely: The creation of pressure maps using SIF/IFF information	✓
(53)	Jiri Zahalka, Frantisek Bradac, Jiri Tuma, Milos Synek: Assurance of Functional Safety in relation to Ecodesign of Machine Tools	✓
(57)	Dusan Maga, Jiri Hajek, Marek Neruda, Lukas Vojtech: FE Model of EM Shielding Textile Materials	✓
(60)	Petr Stodola, Jan Mazal, Milan Podhorec, Ondrej Litvaj: Using the Ant Colony Optimization Algorithm for the Capacitated Vehicle Routing Problem	✓
(61)	Yves Bergeon, Radek Duskocil, Jaromir Hosek, Vaclav Krivanek, Alexandr Stefek: Stereo Vision for Teleoperated Robot	✓
(74)	Patrik Kutilek, Vladimir Socha, Premysl Fitl, Pavel Smrcka: Evaluation of the Adhesion Strength using Digital Microscope and International Standards	✓
(76)	Marcel Janda, Zbynek Makki, Pavel Konicek: Calculation of the Vibration Induction Motor Using the Finite Element Method	✓
(79)	Pham Ich Quy, Martin Polasek: Using Thresholding Techniques for Object Detection in Infrared Images	✓
(83)	Pavel Vorel, Jan Martis: Power Supply for Resistive Heating of Iron Components	✓
(84)	Yao Min, Zhao Min, Guo Xiaobo: The Development of X-ray Fluorescence Spectrometer Based on Energy Dispersion	✓
(85)	Michal Ruzicka, Petr Masek: Design of visual odometry system for mobile robot	✓
(91)	Peter Fabo, Gabriel Gaspar: pySimEd – universal framework for visual programming	✓

POSTER SESSION - LIST

ID	author: title	
(95)	Jan Knobloch, Dalibor Cervinka, Petr Prochazka, Josef Kadlec, Radoslav Cipin, Ivo Pazdera: Universal Test Bench for AC Traction Motors 600V/500A	✓
(96)	Ivo Pazdera, Petr Prochazka, Dalibor Cervinka, Radek Cipin, Jan Knobloch, Josef Kadlec: Actuator for Tattoo Machine	✓
(99)	Bac Nghia Vu, Milos Andrlc: The Code and Carrier Tracking loops for GPS Signal	✓
(108)	Bohuslav Busov, Milada Bartlova: Improvement of Active Hinge of the Car Bonnet	✓
(112)	Bohuslav Busov, Radek Knoflicek, Milada Bartlova: Improvement the Evaluation of Innovation	✓
(116)	Radek Votrubec, Miroslav Vavrousek: Control system of a rotary pneumatic motor	✓
(119)	Petr Masek, Michal Ruzicka: Speech Recognition via STT API for Autonomous Mobile Robot	✓
(120)	Radek Votrubec: Control system of the seat with variable stiffness	✓
(145)	Juraj Madaras, Viktor Ferencey, Martin Bugar: Mechatronic System of Variable Valve Lift Control for Internal Combustion Engine	✓
(147)	Radim Belousek, Miroslav Patocka: Analysis of the Induction Machine Substituting Circuit	✓
(150)	Miloslav Neubauer, Alexandr Stefek: General Implementation of the Ant Colony Optimization on .NET Platform	✓
(152)	Jaroslav Krejci, Tomas Zeman, Jaromir Hrad: Modeling of Impulse Noise in Metallic Lines	✓
(154)	Stefan Brock, Maciej Gniadek: Analysis of input shaping and PID-controller interaction structures for two-mass systems	✓
(155)	Marek Neruda, Lukas Vojtech: Heating Ability of Electrically Conductive Textile Materials	✓
(157)	Radek Vlach: Novel Approach to Thermoelectric Generator Modeling as Energy Harvesting System	✓
(158)	Marek Nevsad, Pavel Lafata: Analysis of Transmission Parameters of Metallic Cables Based on External Conditions	✓
(159)	Marek Regula, Vladimir Socha, Patrik Kutilek, Lubos Socha, Karel Hana, Lenka Hanakova, Stanislav Szabo: Study of heart rate as the main stress indicator in aircraft pilots	✓
(162)	Jiri Vodrazka, Zbynek Kocur, Jiri Holecek, Leos Bohac: Procedure to Measure of the Data Transmission Speed in LTE Mobile Networks	✓

POSTER SESSION - LIST

ID	author: title	
(163)	Jiri Vodrazka, Martin Horak, Karel Dusek: Aging Analysis of Metalized Film Capacitors	✓
(165)	Vojtech Blahnik, Tomas Kosan, Jakub Talla: Control of Single-Phase AC/DC Converter based on SOGI-PLL voltage synchronization	✓
(169)	Igor Kostal: A .NET application searching for data in a log file of the KUKA industrial welding robot	✓
(182)	Lubos Streit, Jakub Talla, Pavel Drabek: Economic Comparison of Basic Energy Storage System Control Strategies	✓
(183)	Martin Pittermann, Jiri Fort: Electric Drive with Voltage-Fed Inverter with Regard to Influence of Voltage Sag	✓
(196)	Josef Vejlupek: Trailer Parking Assistant	✓
(200)	Suat Karakaya, Gürkan Küçükyıldız, Can Toprak, Hasan Ocak: Development of a Human Tracking Indoor Mobile Robot Platform	✓
(210)	Yongtao Liu, Kai Dong, Tao Dong: Thermal Simulation of Bionic transpiration heat pipe system for high-power LED	✓
(216)	Valentin Morozov, Alexey Zhdanov: Features of designing mechatronic units of translatory motion with forced load modes	✓
(217)	Jiri Kovar, Jan Rucka, Ondrej Andrs: Simulation modelling of water-supply network as mechatronic system	✓
(218)	Godem A. Ismeal, Karol Kyslan, Viliam Fedak: DC Motor Identification Based on Recurrent Neural Networks	✓
(220)	Maria Iskandrova, Petr Blecha, Michal Holub, Ivan Dudarev: Assessing the impact of mechatronic systems on the environment	✓
(221)	Jan Hrbacek, Vladislav Singule, Pavel Houska:: Design of PMSM-based Electric Motor Test Stand	✓
(223)	Stanislav Vechet, Jiri Krejsa, Michal Ruzicka, Petr Masek: Building a Scaled Model of Autonomous Convoy Powered by ARM mbed Microcontrollers	✓
(226)	Vit Ondrousek, Jan Kolomaznik, Marcel Vytecka: Recognition of the Objects on the Conveyor Belt Using Graph Matching Algorithms	✓
(231)	Margarita Plotnikova: Communication in nanotechnology	✓