List of accepted papers

1. Design, Modeling and Simulation of Mechatronic systems		
ID	**Paper title**	**Authors**
3001	Monitoring of Energy Flows in the Production Machines	J. Augste, M. Holub, R. Knoflíček, T. Novotný, J. Vyroubal
3004	Off- Road Vehicle with Controlled Suspension in Soft Unprepared Terrain	A. Bílkovský, Z. Šika
3007	The Manipulator of the Passive Optoelectronic Rangefinder as a Controlled System of Servomechanisms	V. Cech, M. Cervenka
3010	Energy Management System Algorithms for the Electric Vehicle Applications	J.Danko, L. Magdolen, M. Masaryk, J. Madaras, M. Bugar
3017	Virtual Commissioning of Mechatronic Systems with the Use of Simulation	J. Hloska, M. Kubín
3018	Prediction of Machining Accuracy for Vertical Lathes	M. Holub, M. Michalíček, J. Vetiška, J. Marek
3020	Towards to Haptic Keyboard: Modeling the Piano Action	P. Horváth
3022	Gubanov model for vacuum packed particles	R. Zalewski, P. Chodkiewicz

3023	Eco-design of Mechatronic Systems	M. Iskandirova, P. Blecha, M. Holub, F. Bradáč
3025	Thick Film Polymer Composites with Graphene Nanoplatelets for Use in Printed Electronics	D. Janczak, M. Słoma, G. Wróblewski, A. Młożniak, M. Jakubowska
3027	Safety Module for the System of Verticalization and Aiding Motion of the Disabled	D. Jasińska-Choromańska, B. Kabziński, M. Matyjewicz-Maciejewicz, D. Kołodziej
3028	Electromagnetic Coil Gun – Construction and Basic Simulation	B. Skala, V. Kindl
3034	Generating Code Consistent with Simulink Simulation for Aperiodic Execution on a Target Hardware Powered by a Free RTOS	V. Lamberský, J. Križan, A. Andreev
3036	A New Approximation of the Storage Efficiency for the Lean NOx Trap Model	B. Lee, R. Grepl, M. Han
3040	Overview of Computational Models Used for Mixed Lubrication	O. Maršálek, P. Novotný, P. Raffai, L. Drápal, V. Píštěk
3042	Heating of Mould in Manufacture of Artificial Leathers in Automotive Industry	J. Mlynek, T. Martinec, R. Srb
3055	Influence of Underpressure on Acoustic Properties of Semi-intelligent Vacuum Packed Particles	M. Rutkowski
3060	Hardware in the Loop Simulation Model of BLDC Motor Taking Advantage of FPGA and CPU Simultaneous Implementation	V. Sova, R. Grepl
3062	Using PSO Method for System Identification	M. Dub, A. Stefek
3063	Damping of Machine Frame Vibrations by an Electro-magnetic Actuator	G. J. Stein, R. Chmúrny
3069	Determination of Parameters of Second Order Integration Model for Weighing Scales	R. Ugodziński, R. Szewczyk
3070	Feed-Rate Control along Multi-Axis Toolpaths	P. Vavruska
3072	Model Based Design of Power HIL System for Aerospace Applications	J. Vejlupek, J. Chalupa, R. Grepl (a)
3073	Visualization of Energy Flows Using a Particle System	I.Dudarev, V.Wittstok, F.Pürzel, P.Blecha
3084	Parameter Identification of Rheological Models Using Optimization Algorithms	V. Píštěk, P. Novotný, T. Mauder, L. Klimeš
3085	Cam Ring Force Simulation for Variable Roller Pump	P. Zavadinka, R. Grepl

3090	Benefits of a Parallelization of a Stand-Alone Desktop .NET Application Threaded Instance Methods	I. Košťál
3094	Morphing Structure with a Magnetorheological Material – Preliminary Approach	P. Skalski
3098	Evaluation of Possibilities of Electroactive Polymers Application in Bio-inspired Adaptronic System	J. Kaleta, K. Kot, D. Lewandowski, K. Niemiec, P. Wiewiorski
3099	Transport Duty Cycle Simulation of Electro-Hydro-Mechanical Drive Unit for Mixing Drum	P. Krišśák, J. Jakubovič, P. Zavadinka
3104	Investigation on the Jump Phenomenon of Linear Compressor	H.M. Zou, M.S. Tang, Sh.Q. Shao, Ch.Q. Tian, Y.Y. Yan
3108	Software Tool for Calibration of Hydraulic Models of Water-supply Networks	J. Kovar, J. Rucka
3111	Practical Problems during Fuel Pump Development for Aerospace Industry	P. Axman, R. Král, V. Axman, J. Berjak
3118	Simulation Modelling of MEMS Thermoelectric Generators for Mechatronic Applications	L. Janak, Z. Ancik, Z. Hadas
3122	Simulation Assessment of Passive Elimination of Tool Vibrations during Machining	T. Březina, L. Březina, J. Marek, Z. Hadas

2. Electrical Machines, Drives & Power Electronics

ID	Paper title	Authors
3041	The Comparison of the Permanent Magnet Position in Synchronous Machine	P. Svetlik
3050	Air Gap Heat Transmission and Its Consideration in FEM Analyses	R. Pechanek, V. Kindl, K. Hruska
3054	Problems of FEM Analysis of Magnetic Circuit	J. Roupec, M. Kubik, I. Mazůrek, Z. Strecker
3059	FEM Model of Induction Machine's Air Gap Force Distribution	J. Sobra, V. Kindl
3074	Current-voltage Characteristics and IR Imaging of Organic Light-emitting Diodes	G. Koziol, J. Gromek, A. Arazna, K. Janeczek, K. Futera, W. Steplewski
3078	Complex Model of Asynchronous Machine as Traction Machine in Mining	R. Vlach
3091	Energetic Properties of a New, Iron Powder Based Switched Reluctance Motor Drive	B. Fabianski
3095	Switched Reluctance Motor Drive Embedded Control System	B. Fabianski, K. Zawirski
3112	Design and Implementation of A Single-Stage Full-Bridge DC/DC Converter with ZVS Mode	A. Diker, D. Korkmaz, Ö.F. Alçin, U. Budak, M. Gedikpınar
3115	Sensitivity Analysis of the Induction Machine Torque to the Substituting Circuit Elements	M. Patocka, R. Belousek
3116	Fractional-order Model of DC Motor	R. Cipin, C. Ondrusek, R. Huzlik
3119	FEM Model of Electro-Magnetic Vibration Energy Harvester	Z. Hadas, R. Huzlík

3. Measurement and Diagnostics

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3011	Contribution to Determination of Target Angular Position by Single Visual Camera at Indoor Close Environs	R. Doskocil, V. Krivanek, A. Stefek
3026	A Simple Acoustic Generator for Boiler Cleaning Applications	A. Jedrusyna, A. Noga
3037	Effects of Misalignments of MEMS Accelerometers in Tilt Measurements	S. Łuczak
3044	Method for Determining Direction, Velocity and Position of a Flying Ball	A. Nagy
3048	Silicon PIN Photodiode-Based Radiation Detector for Mobile Robots	O. Petruk, R. Szewczyk
3056	A Method for Measuring Size and Form Deviations of Rotary Components with Variable Curvature on FMM	M. Sieniło, S. Żebrowska-Łucyk
3061	Three-dimensional Meshless Modelling of Functionally Graded Piezoelectric Sensor	P. Stanak, J. Sladek, V. Sladek, A. Tadeu
3064	Diagnostics of Mechatronic Systems on the Basis of Neural Networks with High-performance Data Collection	P. Stepanov, Yu. Nikitin
3065	Signal Processing in DiaSter System for Simulation and Diagnostic Purposes	M. Syfert, P. Wnuk
3066	System for Multipoint Measurements of Slowly Varying Magnetic Fields	M. Szumilas, E. Ślubowska, K. Lewenstein
3081	X Band Power Generator	R. Krizan, L. Drazan
3092	A New Approach to the Uncertainty in Diameter Measurement Using Laser Scanning Instrument	Ryszard Jablonski, Pawel Fotowicz
3096	Real-time Edge Detection Using Dynamic Structuring Element	M. Kawecki, B. Putz
3101	Investigation Method for the Magnetoelastic Characteristics of Construction Steels in Nondestructive Testing	D. Jackiewicz, R. Szewczyk, J. Salach, A. Bieńkowski, K. Wolski
3102	Testing of Automotive Park Assistant Control Unit by HIL Simulation	P. Krejci
3105	Coupled Thermal-Structural Transient Analysis of Pressure Sensors	R. Vlach
3117	Device for Measuring of Active Power and Energy at Machine Tools	R. Huzlík, P. Blecha, A. Vašíček, P. Houška, M. Holub

4. Robotics

ID	Paper title	Authors
3002	Effect of Gear Ratio on Energy Consumption of Actuators Used in Orthotic Robot	K. Bagiński, J. Wierciak
3003	Precise Model of Multicopter for Development of Algorithms for Autonomous Flight	R. Baranek, F. Solc
3005	In-pipe Microrobot Driven by SMA Elements	M. Bodnicki, D. Kamiński
3008	Adaptive Cruise Control for a Robotic Vehicle Using Fuzzy Logic	A. Hassan, G. Collier
3012	Robot with Adjustable Undercarriage – the Design and the Simulation	M. Dovica, T. Kelemenová, M. Kelemen, T. Lukac
3013	Project of Autonomous Control System in HUSAR Lunar Mining Rover	P. Węclewski, G. Bujko, P. Etz, Ł. Godziejewski, J. Kaplińska, P. Kicman, M. Wiśniowski
3015	Object Classification Using Dempster–Shafer Theory	B. Harasymowicz-Boggio, B. Siemiątkowska
3021	A Novel Indoor Localization Scheme by Integrating Wiimote Sensing and A Controllable IR-LED Array	Y. T. Fu, K.S.Chen
3071	Hybrid Navigation Method for Dynamic Indoor Environment Based on Mixed Potential Fields	S. Vechet, K. S. Chen, J. Krejsa
3076	Human-machine Interface for Mobile Robot Based on Natural Language Processing	P. Mašek, M. Růžička
3077	Real Time Object Tracking Based on Computer Vision	M. Růžička, P. Mašek
3086	Searching for Features in Laser Rangefinder Scan via Combination of Local Curvature Scale and Human Obstacles Detection	J. Krejsa, S. Vechet
3093	Orthotic robot as a self optimizing system	J. Wierciak, K. Bagiński, D. Jasińska-Choromańska, T. Strojnowski
3100	Trajectory Generation for Autonomous Vehicles	Vu Trieu Minh
3113	Robotnic Underwater Vehicle Steered by a Gyroscope – Model of Navigation and Dynamics	E. Ładyżyńska-Kozdraś
3114	Robotic Implementation of the Adaptive Cruise Control-Comparison of Three Control Methods	P. Shakouri, A. Ordys, G. Collier

5. Control and Automation

ID	Paper title	Authors
2121	Self-learning Control for Servo Drives in Forming Technologies	M. Hoffmann, P. Hušek, H.-J. Koriath, V. Kučera, U. Priber
3006	Automatic system for object recognition in robotic production line for automotive industry	P. Božek, P. Pokorný
3031	Pulse Response Identification of Inertial Model for Astatic System	J. E. Kurek
3035	Benchmarking Various Rapid Control Prototyping Targets Supported in Matlab/Simulink Development Environment	V. Lamberský, R. Grepl
3043	Tuning Rules Selection and Iterative Modification of PID Control System Parameters	J. Możaryn, K. Malinowski
3045	Fuzzy Approach to the Selection of Interference Fit Assembly Method	Sinitsyn A.N., Sinitsyna V.V., Abramov I.V., Abramov A.I.
3046	Application of Artificial Neural Network for Speed Control of Servodrive with Variable Parameters	T. Pajchrowski
3047	Hybrid Fuzzy - State Variable Feedback Controller of Inverted Pendulum	A. Petrovas, R. Rinkevičiene
3051	A Model Comparison Performance Index for Servo Drive Control	J. Quellmalz, M. Rehm, H. Schlegel, W.-G. Drossel
3052	Control Structures for Opposed Driving, Coupled Linear Drives	M. Rehm, J. Quellmalz, H. Schlegel, W.-G. Drossel
3075	The Robust Remote Control of the Manipulator	V. Ondroušek, M. Vytečka, J. Kolomazník, M. Hammerschmiedt
3083	Control System of One-Axis Vibration-insulation Platform with Gyroscopic-Stabilizer	R. Votrubec
3097	Hybrid PI Sliding Mode Position and Speed Controller for Direct Drive	S. Brock
3106	Distributed Control System of Solar Domestic Hot Water Heating Using Open-source	G. Gaspar, S. Pavlikova, R. Masarova
3109	Design of Engine Control System for Small Helicopter	L. Ertl, M. Jasansky

6. Biomedical and Biomechanical Engineering

ID	Paper title	Authors
3009	Application of Indices Characterizing the Shape of a Signal for Automatic Identification of Artifacts in Impedance Cardiography	P. Piskulak, G. Cybulski, W. Niewiadomski
3016	Predictive Algorithm For The Insulin Dose Selection With Continuous Glucose Monitoring System	H.J. Hawłas, K. Lewenstein
3019	Experimental Device for Reconstructing Spinal Deviations in to a 3D Model	F. Horvát, M. Čekan, L. Šoltés, B. Hučko
3024	Automatic Analysis of Recurrence Plot for the needs of the Analysis of Infrasonic Signals from the Human Heart	M. Jamrozy, K. Lewenstein, T. Leyko
3030	Evaluation of the Empirical Mode Decomposition Method as a Tool for Preprocessing Ultrasonic Cardiological Data	T. Kubik, K. Kałużyński, S. Cygan, K. Mikołajczyk
3033	Evaluation of Bilateral Asymmetry of the Muscular Forces using OpenSim Software and Bilateral Cyclograms	P. Kutilek, Z. Svoboda, P. Smrcka
3049	Properties of Ankle-Brachial-Index (ABI) in the Light of Numerical Simulation of Pulse Wave Propagation	M. Pieniak, K. Cieślicki
3053	Patient Activity Measurement in Active Elbow Orthosis	T. Ripel, J. Krejsa, J. Hrbáček
3057	A Physical Model of the Human Circulatory System for the Modeling, Control and Diagnostic of Cardiac Support Processes	A. Siewnicka, K. Janiszowski, M. Gawlikowski
3079	A New Method for Tissue Impedance Spectrometry and its Initial Application *in vivo*	M.Władziński, K. Wildner, S. Cygan, B. Grobelski, D. Pawełczak, T. Pałko
3080	Active Artificial Lower Limb	M. Zawiski, R. Paśniczek
3087	Evaluation and Testing of Novel Ocular Tactile Tonometry Device	E. T. Enikov, P. P. Polyvás, R. Jančo, M. Madarász
3088	Calculation of the Bio-ceramic Material Parameters	V. Fuis, P. Janicek
3110	Effect of Contact Condition on Film Thickness Formation in Artificial Joints	T. Návrat, M. Vrbka, J. Laštůvka, I. Křupka, M. Hartl, J. Gallo

7. Mechatronic Education

ID	Paper title	Authors
3014	Model Based Design of a Self-Balancing Vehicle: a Mechatronic System Design Case Study	R. Grepl
3029	The Design and Use of 3DOF Manipulator as a Platform for Education in Mechatronics	D. Klimes, T. Ripel, M. Suransky, J. Vejlupek
3107	Jasper - a Platform for Teaching Mechatronics	G. Gaspar, S. Pavlikova, P. Fabo, P. Pavlík
3120	Model-Based Design of Mobile Platform with Integrated Actuator – Design with Respect to Mechatronic Education	O. Andrs, Z. Hadas, J. Kovar, J. Vetiska, V. Singule