

2013 International Symposium on Electrodynamic and Mechatronic Systems

(SELM 2013)

**Opole-Zawiercie, Poland
15 – 18 May 2013**



**IEEE Catalog Number: CFP13SLM-POD
ISBN: 978-1-4673-5588-9**

CONTENTS

MECHATRONICS

Remote Control of the Artificial Arm Model Using 3D Hand Tracking.....	9
G. Baron, P. Czekalski, D. Malicki, K. Tokarz	
Assessing the Accuracy of a Non-Invasive Identification Method	11
A. Hellmich, S. Hofmann, K. Hipp, H. Schlegel, W.-G. Drossel	
Assessment of Optimization Criteria in the Time Domain Used for Simulation Based Controller Parameterization.....	13
K. Hipp, A. Hellmich, H. Schlegel, W.-G. Drossel	
Analysis of a Position Control Extension on the Model of a Servo-Screw-Press.....	15
R. Münster, R. Schönherr, H. Schlegel, W.-G. Drossel	
Mathematical Model of Linear Electric Nacelle Actuation System.....	17
M. Henzel, K. Falkowski, P. Mazurek	
Modeling and Identification of Lithium-Ion Batteries for Electric Vehicles	19
F. Quantmeyer, X. Liu-Henke	
Electromagnetic Force Components Analysis in an Active Magnetic Bearing Numerical Model.....	21
A. Piłat	
An Synergistic Dynamic Model of an Active Magnetic Bearing with Three Electromagnets.....	23
A. Piłat	
Propulsion Control of the Semi-Magnetically Levitated Cart	25
A. Piłat, M. Żyła	
Concept of Chassis Dynamometer for Wheeled Mobile Robots	27
P. Mróz, S. Brol	
Application of Direct Acceleration Measurement in Powertrain Testing.....	29
S. Brol	
Diagnostics of Static Unbalance of Single Wheel of Passenger Car Carried Out on Road	31
K. Prażnowski, S. Brol, A. Augustynowicz	
Gesture and Voice Driven Mobile Tribot Robot Using Kinect Sensor	33
G. Baron, P. Czekalski, M. Golenia, K. Tokarz	
Energetic Aspects for an Integrated Vehicle Dynamics Control for E-Vehicles with Decentral Drives and All-Wheel Steering.....	35
R. Buchta, X. Liu-Henke	
An Idea of Combustion Process Onboard Monitoring System – CPOMS for Multi-Cylinder Engine	37
A. Bieniek	
Monitoring System of Harmful Substances Emission at Compression Ignition Engine with Exhaust Gas Recirculation	39
M. Graba, A. Bieniek	
Hardware-in-the-Loop Type Simulator of Spark Ignition Engine Control Unit	41
J. Mamala, S. Brol, G. Graba	
Modeling and Simulation of the Hybrid Powertrain for the Use in Buggy Vehicle	43
A. Lechowicz, A. Augustynowicz	
The Analysis of Amplifier Module for Electric Drive.....	45
D. Chojnacki, K. Falkowski, M. Henzel	
Evaluation of Selected Elements of the Power Line Using CAD Environment	47
R. Gasz, S. Zator	

Measurements of Casting Components Using Image Processing Methods.....	49
R. Gasz, S. Zator	
Analysis of Selected Constructions of the Electrodynamic Accelerator.....	51
A. Waindok, P. Piekielny	
Tests of the Controllers Settings for a 5-phase Permanent Magnet Tubular Linear Motor Using Matlab/Simulink Software	53
A. Waindok, M. Piegza	
Frequency of Power Line Failures in Life Cycle Cost Analysis	55
Ł. Dzierżanowski, B. Ruszczak, M. Tomaszewski	
Comparison of Simulated and Measured Signals of the Electromagnetic Coil Launcher for Micro Aerial Vehicles	57
M. Kondratiuk, Z. Gosiewski	
The Use of Discrete Signal Decomposition to Identify Different Types of Overvoltage	59
W. Skomudek	

ELECTRODYNAMICS

Inactivating Pathogenic Micro-Organisms Through Microwave Sterilization Technology.....	63
S. Sinha, T. Stander, J. du Preez	
Dispersion of Permittivity of Technological Dielectrics for Microstrips	65
A. A. Girich, A. Moskaltsova, S. V. Nedukh	
Technique for Measuring the Spatial Field Distribution in Tapered Wire Medium	67
L. I. Kozhara, S. Y. Polevoy	
FE Analysis of Magnetorheological Brake with Hybrid Excitation	69
C. Jędrzycka, W. Szela, R.M. Wojciechowski	
Calculation of Temperature in the Permanent Magnet Tubular Linear Motor	71
A. Waindok	
Comparison of Magnetic Field Parameters Obtained from 2D and 3D Finite Element Analysis for an Active Magnetic Bearing	73
D. Wajnert	
Thermal Analysis of the Permanent Magnet Synchronous Generator with the Use of Ansys Fluent.....	75
D. Mazur	
Implementation of Selected Numerical Algorithms for Solving Sparse Matrixes Using CUDA Technology.....	77
J. Zimon, M. Zoworka	
Modified Time Stepping Method for Field-Circuit Problems Based on Vector Magnetic Potential.....	79
J. Zimon, P. Strzelczyk	
Determination of the Magnetic Field Parameters Using a New Fast Computational Tool	81
J. Zimon, D. Piula	

MATERIALS IN ELECTRICAL ENGINEERING

Influence of the Electrodeposition Cathodic Potential on the Composition and Magnetic Properties of CoNi Nanowires	85
A. Moskaltsova, M. P. Proenca, C. T. Sousa, A. Apolinário, J. Ventura, G. N. Kakazei, J. P. Araujo	
Loss Components in Electrical Steel with Goss Texture	87
W. A. Pluta	
Influence of Magnetization Curve on the Force Generated in Axial Active Magnetic Bearing.....	89
P. Graca, K. Mrozek	