

2010 12th International Conference on Optimization of Electrical and Electronic Equipment

(OPTIM 2010)

**Brasov, Romania
20-22 May 2010**

Pages 1-655



**IEEE Catalog Number: CFP1022D-PRT
ISBN: 978-1-4244-7019-8**

TABLE OF CONTENTS

VOLUME 1

POWER ELECTRONICS FOR RENEWABLE SEA WAVE ENERGY	1
<i>Marian P. Kazmierkowski, Marek Jasinski</i>	
MULTI-PHYSICAL SIMULATION OF DRIVE TRAINS	7
<i>Enno Lange, Michael Van Der Giet, Thomas Herold, Kay Hameyer</i>	
ENCODERLESS CONTROL OF SYNCHRONOUS MACHINES WITH PERMANENT MAGNETS - IMPACT OF MAGNETIC DESIGN	16
<i>Ralph Kennel</i>	
INFLUENCE OF TRACE ADDITIVES ON DIELECTRIC PROPERTIES OF GAS	22
<i>Zden Kucerovsky, Adrian Ieta</i>	
DFIG TURBINE REPRESENTATION FOR SMALL SIGNAL VOLTAGE CONTROL STUDIES	28
<i>Jorge Martinez, Philip C. Kjaer, Remus Teodorescu</i>	
VOLTAGE STABILITY WITH MECHANICALLY SWITCHED CAPACITORS USING VACUUM CIRCUIT BREAKERS IN THE HIGH-VOLTAGE GRID	38
<i>Timo Wenzel, Thomas Leibfried</i>	
A NEW ALGORITHM FOR STEADY STATE LOAD-SHEDDING STRATEGY	45
<i>V. Calderaro, V. Galdi, V. Lattarulo, P. Siano</i>	
OPTIMAL DECISION ON CONTRACT SIZE FOR V2G AGGREGATOR REGARDING FREQUENCY REGULATION	51
<i>Sooheong Jang, Sekyung Han, Soo Hee Han, Kaoru Sezaki</i>	
MAGNETIC MEASUREMENTS FROM LOW TO HIGH FREQUENCY ON AMORPHOUS RIBBON OF $\text{CO}_{67}\text{FE}_{4}\text{B}_{14.5}\text{SI}_{14.5}$ AND PREDICTION OF EXCESS LOSSES WITH THE STATISTICAL LOSS MODEL BASED ON MAGNETIC OBJECTS (OM) THEORY	60
<i>Veronica Paltanea, Gheorghe Paltanea, Elena Helerea, Iosif Vasile Nemoianu, Emil Cazacu</i>	
MAGNETIC PROPERTIES OF TWO-DIMENSIONAL (2D) CLASSICAL SQUARE HEISENBERG LATTICES I- ZERO-FIELD PARTITION FUNCTION	66
<i>Jacques Curely</i>	
STUDY OF THE MAGNETIC PROPERTIES OF TWO-DIMENSIONAL (2D) CLASSICAL SQUARE HEISENBERG ANTIFERROMAGNETS II- SPIN CORRELATIONS AND SUSCEPTIBILITY	76
<i>Jacques Curely</i>	
FOURIER TRANSFORM OF THE PULSE FUNCTION FOR APPLICATION IN HIGH VOLTAGE TECHNIQUE	86
<i>Vesna Javor</i>	
MOBILE PHONE SAR ANALYSIS THROUGH EXPERIMENTAL AND NUMERICAL SIMULATION	92
<i>Mihaela Morega, Andrei Marinescu, Alexandru Mihail Morega</i>	
COMPARISON OF WINDING TOPOLOGIES IN A POT CORE ROTATING TRANSFORMER	100
<i>J. P. C. Smeets, L. Encica, E. A. Lomonova</i>	
ANALYTICAL AND NUMERICAL COMPUTATION OF THE ELECTRIC FIELD OF A HYPERBOLOID-PLANE GEOMETRY WITH AND WITHOUT SPACE CHARGES	108
<i>Sebastian Azer, Thomas Mertens, Dirk Peier</i>	
HIGH-VOLTAGE CERAMIC STATION POST INSULATORS - LEAST-EFFORT DETERMINATION OF BENDING STRENGTH UNDER SHORT-CIRCUIT -	115
<i>Norbert Stein, Amir M. Miri</i>	
THERMAL AND VOLTAGE TESTING AND CHARACTERIZATION OF SUPERCAPACITORS AND BATTERIES	122
<i>A. M. Puscas, M. C. Carp, C. Z. Kertesz, P. N. Borza, G. Coquery</i>	
ELECTRICAL DESIGN OF ELECTROPORATION REACTORS	130
<i>Martin Sack, Georg Muller</i>	
A NOVEL, FERROFLUID-COOLED TRANSFORMER. ELECTROMAGNETIC FIELD AND HEAT TRANSFER BY NUMERICAL SIMULATION	137
<i>A. M. Morega, M. Morega</i>	
DYNAMIC CHARACTERISTICS OF A PERMANENT MAGNET ELECTROMAGNETIC VALVE ACTUATOR	144
<i>Ivan Yatchev, Vultchan Gueorgiev, Krastio Hinov, Racho Ivanov, Dimitar Dimitrov</i>	
ANALYTICAL METHOD FOR HYSTERESIS MODELLING OF SOFT MAGNETIC MATERIALS	150
<i>Septimiu Motoasca, Andrei Nicolaide, Elena Helerea, Gheorghe Scutaru</i>	

ANALYSIS OF DIRECT CURRENT FLOWING INSIDE A LINEAR INCREASING CONDUCTIVITY HALF-SPACE	156
<i>Ovidiu Centea, Iosif Vasile Nemoianu, Emil Cazacu, Veronica Paltanea, Gheorghe Paltanea</i>	
SEMI-ANALYTICAL SOLUTIONS TO THE SCHROEDINGER-POISSON MODEL OF ELECTRON STATES.....	162
<i>J. A. Barrett, M. M. De Souza, S. Cirstea</i>	
DETECTION OF INRUSH CURRENT USING S-TRANSFORM AND COMPETITIVE NEURAL NETWORK.....	167
<i>G. Mokryani, P. Siano, A. Piccolo</i>	
ANALYTICAL-NUMERICAL APPROACH FOR LEVITATION FORCE CALCULATION OF A CYLINDRICAL BEARING WITH PERMANENT MAGNETS USED IN AN ELECTRIC METER.....	173
<i>Marian Greconici, Zlata Cvetkovic, Ana Mladenovic, Slavoljub Aleksic, Daniela Vesa</i>	
SPARK GAP EROSION IN MARX GENERATORS FOR ELECTROPORATION.....	178
<i>Florian Attmann, Martin Sack, George Muller</i>	
DIELECTRIC PROPERTIES CHARACTERIZATION OF CONDUCTIVE POLYMERIC MATERIALS AT TEMPERATURE AND FREQUENCY VARIATION	184
<i>Vlad-Andrei Scarlatache, Maria Ursan, Romeo Cristian Ciobanu</i>	
A SUPERCAPACITOR STACK – DESIGN AND CHARACTERISTICS.....	190
<i>I. D. Oltean, A. M. Matoi, E. Helena</i>	
STUDY OF HIGH FREQUENCY SIGNALS BEHAVIOR	196
<i>Lia Elena Aciu, Petre Ogrutan, Mihai Scutaru, Adrian Mailat</i>	
AN ANALYSIS ON THE OPTIMAL FIELDS NUMBER OF THE PLATE-TYPE ELECTROSTATIC PRECIPITATORS USED IN A THERMOELECTRIC POWER PLANT.....	202
<i>Gabriel N. Popa, Victor Vaida, Sorin L. Deaconu, Ioan Sora</i>	
DISCO PLANNER FLEXIBLE DG ALLOCATION IN MV DISTRIBUTION NETWORKS USING MULTI-OBJECTIVE OPTIMIZATION PROCEDURES.....	210
<i>A. Moeini, H. Yassami, M. Owlady, M. H. Sadeghi</i>	
TORQUE OPTIMIZATION ALGORITHM FOR SRM DRIVES USING A ROBUST PREDICTIVE STRATEGY	216
<i>Alin Argeseanu, Ewen Ritche, Krisztina Leban</i>	
MODELING OF SATURATION IN SALIENT POLE SYNCHRONOUS MACHINES.....	222
<i>Aurel Campeanu, Manfred Stiebler</i>	
ELECTROMAGNETIC PUMPING OF MOLTEN SALTS.....	228
<i>J. Etay, V. Fireteanu, Y. Fautrelle, C. Roman</i>	
ASPECTS REGARDING DYNAMIC REGIMES MODELLING, SIMULATION AND MONITORING FOR RELUCTANCE SYNCHRONOUS MOTORS	237
<i>Sorin Enache, Aurel Campeanu, Ion Vlad, Monica-Adela Enache</i>	
THE MAGNETIC NOISE OF INVERTER-FED THREE-PHASE INDUCTION MOTORS WITH SQUIRREL CAGE ROTORS	243
<i>Gheorghe Scutaru, Ioan Peter, Razvan Mihai Ionescu, Andrei Negoita</i>	
SWITCHED RELUCTANCE MOTOR ANALYTICAL MODELS, COMPARATIVE ANALYSIS	249
<i>Emil Padurariu, Liviu Somesan, Ioan-Adrian Viorel, Claudia Steluta Martis, Octavian Cornea</i>	
THE SIMULATION OF A MULTI-PHASE INDUCTION MOTOR DRIVE	255
<i>Octavian Grigore-Muler, Mihai Barbelian</i>	
HYBRID ALGORITHM FOR MULTI-OBJECTIVE OPTIMIZATION OF PMSM USING MASSIVELY DISTRIBUTED FINITE ELEMENT ANALYSIS.....	265
<i>Jens Krotsch, Bernhard Piepenbreier</i>	
SIMULATION OF A HIGH VOLTAGE SYSTEM IN A HYBRID ELECTRICAL VEHICLE.....	273
<i>Rudiger Appunn, Kay Hameyer</i>	
MOTION SENSORLESS CONTROL OF BLDC PM MOTOR WITH OFFLINE FEM INFO ASSISTED STATE OBSERVER.....	279
<i>Alin Stirban, Ion Boldea, Gheorghe-Daniel Andreescu, Dorin Iles, Frede Blaabjerg</i>	
NOVEL MOTION SENSORLESS CONTROL OF SINGLE PHASE BRUSHLESS D.C. PM MOTOR DRIVE, WITH EXPERIMENTS.....	287
<i>Liviu Ioan Iepure, Ion Boldea, Gheorghe Daniel Andreescu, Dorin Iles, Frede Blaabjerg</i>	
I-F STARTING AND ACTIVE FLUX BASED SENSORLESS VECTOR CONTROL OF RELUCTANCE SYNCHRONOUS MOTORS, WITH EXPERIMENTS.....	295
<i>Sorin-Cristian Agarlita, M. Fatu, L. N. Tutlea, F. Blaabjerg, I. Boldea</i>	
A NOVEL, SINGLE STATOR DUAL PM ROTOR, SYNCHRONOUS MACHINE: TOPOLOGY, CIRCUIT MODEL, CONTROLLED DYNAMICS SIMULATION AND 3D FEM ANALYSIS OF TORQUE PRODUCTION.....	301
<i>Ion Boldea, Marcel Topor, Fabrizio Maringnetti, Sorin Iona Deaconu, Lucian Nicolae Tutelea</i>	

POWER-OPTIMIZED SYMMETRIZING CURRENT CONTROL WITH A 8.7 KNM-TRANSVERSE FLUX GENERATOR	310
<i>Jochen Schuttler, Holger Groke, Marek Siatkowski, Johannes Adler, Bernd Orlik</i>	
PERMANENT-MAGNET SYNCHRONOUS MACHINE MODEL FOR URBAN TRANSPORT APPLICATIONS	316
<i>J. Fang, C. Heising, V. Staudt, A. Steinmel</i>	
ROTOR BARS DIAGNOSIS IN SINGLE PHASE INDUCTION MOTORS BASED ON THE VIBRATION AND CURRENT SPECTRUM ANALYSIS.....	322
<i>Mariana Iorgulescu, Robert Beloiu, Mihai Octavian Popescu</i>	
REPRESENTATION OF IRON CORE AND DIELECTRIC LOSSES FOR CALCULATION OF COMMON MODE STATOR GROUND CURRENTS IN INVERTER-FED AC MACHINES	329
<i>Oliver Magdun, Andreas Binder, Yves Gemeinder</i>	
SENSORLESS CONTROL OF A BLDC PM MOTOR BASED ON I-F STARTING AND BACK-EMF ZERO-CROSSING DETECTION	335
<i>A. Ungurean, V. Coroban-Schramel, I. Boldea</i>	
FLUX-BASED CONTROL OF PMSM.....	341
<i>Martin Oettmeier, Carsten Heising, Volker Staudt, Andreas Steimel</i>	
3D FINITE ELEMENT THERMAL ANALYSIS OF A SMALL POWER PM DC MOTOR.....	347
<i>Ovidiu Craiu, Alina Machedon, Tiberiu Tudorache, Mihaela Morega, Mircea Modreanu</i>	
THE INDUCTION MACHINE WITH RING STATOR WINDING AS A POSSIBLE SOLUTION FOR SPEED REGULATION.....	353
<i>Al. Simion, S. Mihai, L. Livadaru, A. Munteanu</i>	
HEAT TRANSFER ANALYSIS IN THE DESIGN PHASE OF A HIGH TEMPERATURE SUPERCONDUCTOR MOTOR.....	359
<i>A. M. Morega, I. Dobrin, M. Popescu, M. Morega</i>	
SPEED AND POSITION ESTIMATION TECHNIQUE FOR PMSM BASED ON MODIFIED MACHINE MODEL	365
<i>Vasilios C. Iliuodis, Nikolaos I. Margaritis</i>	
HIGHER ORDER ROTOR SLOT HARMONICS FOR ROTOR SPEED & POSITION ESTIMATION	374
<i>Ozan Keysan, H. Bulent Ertan</i>	
BLDC-SPM MOTOR DRIVE WITH DC-DC CONVERTER IN THE DC LINK: HALL SENSOR VERSUS SENSORLESS SPEED CONTROL	380
<i>Vlad Gradinaru, Lucian Tutelea, Ion Boldea</i>	
COMPUTATION OF THE CHARACTERISTICS EDDY CURRENT ELECTROMAGNETIC BRAKE FOR A BICYCLE, BY THE FINITE ELEMENT METHOD 3D.....	388
<i>Constantin Stoica, Leonard Melcescu, Emilian Lefter, Luminita Mirela Constantinescu</i>	
MODULAR FAULT TOLERANT SWITCHED RELUCTANCE MACHINE – DESIGN AND DYNAMIC SIMULATIONS	393
<i>Mircea Ruba, Ioana Bentia, Lorand Szabo</i>	
DETERMINING START TIME FOR THREE-PHASE CAGE INDUCTION MOTORS THAT DRIVE BELT TRANSPORT CONVEYERS	399
<i>Gabriel Nicolae Popa, Iosif Popa, Corina Maria Dinis, Angela Iagar</i>	
A CLASS OF FAST DYNAMICS V/F SENSORLESS AC GENERAL DRIVES WITH PM-RSM AS A CASE STUDY	405
<i>Ion Boldea, Ana Moldovan, Vasile Coroban Schramel, Gheorghe Daniel Andreescu, Lucian Tutelea</i>	
PM-RSM SENSORLESS VECTOR CONTROL: ZERO Q-AXIS FLUX VERSUS APPROXIMATE MAXIMUM TORQUE PER CURRENT, WITH EXPERIMENTS	412
<i>Mihaela Codruta Paicu, Lucian Tutelea, Ion Boldea, Gheorghe Daniel Andreescu, Razvan Ancuti</i>	
DESIGN OF AN EXTENDED LUENBERGER OBSERVER FOR SENSORLESS VECTOR CONTROL OF INDUCTION MACHINES UNDER REGENERATING MODE	421
<i>T. Pana, O. Stoicuta</i>	
INDUCTION MOTOR ELECTROMAGNETIC DESIGN OPTIMIZATION: HOOKE JEEVES METHOD VERSUS GENETIC ALGORITHMS	431
<i>Lucian Tutelea, Ion Boldea</i>	
VIBRATION MONITORING FOR DIAGNOSIS OF ELECTRICAL EQUIPMENT'S FAULTS	439
<i>Mariana Iorgulescu, Robert Beloiu, Mihai Octavian Popescu</i>	
ROEBEL BAR LOSSES ESTIMATION FOR OPTIMIZATION PURPOSE	446
<i>Toma Dordea, Ileana Torac, Gheorghe Madescu, Victor Proca, Martian Mot, Lucian Ocolisan</i>	
NEW BALANCING EQUIPMENT FOR MASS PRODUCTION OF SMALL AND MEDIUM-SIZED ELECTRICAL MACHINES	452
<i>Alin Argeseanu, Ewen Ritchie, Krisztina Leban</i>	

A NOVEL INITIAL ROTOR-POSITION ESTIMATION METHOD FOR BLDC MOTORS BASED ON FOUR VOLTAGE PULSES	458
<i>Robert Lorincz Istvan, Vasile Coroban-Schramel, Virgil Tiponut</i>	
SOFTWARE POSITION TUNING OF A SRM DRIVE SYSTEM	466
<i>O. Cornea, D. Popovici</i>	
MODAL TEST OF AN ELECTRICAL MACHINE ROTOR	472
<i>M. Filip, I. C. Rosca, E. Helerea</i>	
REALTIME SIMULATION OF CONTROL ALGORITHMS INCLUDING THE DEDICATED CONTROL HARDWARE	478
<i>M. Gorski, R. Bartelt, C. Heising, V. Staudt, A. Steimel</i>	
DC-BUS VOLTAGE OPTIMUM CONTROL OF THREE-PHASE SHUNT ACTIVE FILTER SYSTEM	484
<i>Alexandru Bitoleanu, Mihaela Popescu, Mircea Dobriceanu, Felicia Nastasoiu</i>	
SIMPLE COMPARISON OF DIFFERENT PWM STRATEGIES FOR A THREE-LEVEL H-BRIDGE FLYING CAPACITOR CONVERTER	490
<i>A. Ruderman, B. Reznikov</i>	
MONITORING SYSTEM AND INTELLIGENT CONTROL SYSTEM USED IN THE STARTING PROCESS OF A LDH1250HP LOCOMOTIVE	497
<i>M. C. Carp, A. M. Puscas, C. Kertesz, M. Romanca, P. N. Borza</i>	
DESIGN AND ANALYSIS OF A CORELESS FLYBACK CONVERTER WITH A PLANAR PRINTED-CIRCUIT-BOARD TRANSFORMER	503
<i>Abdoulkarim Bouabana, Constantinos Sourkounis</i>	
SIMULATION OF THREE – PHASE VOLTAGE SOURCE PULSE WIDTH MODULATED (PWM) LCL FILTERED RECTIFIER BASED ON INPUT – OUTPUT LINEARIZATION NONLINEAR CONTROL	510
<i>Erdal Sehirli, Meral Altinay</i>	
SYNCHRONOUS CURRENT DOUBLER RECTIFIER WITH SATURABLE INDUCTORS FOR ASYMMETRIC HALF-BRIDGE DC/DC CONVERTER	516
<i>Petre Scortaru, Lucian Iulian</i>	
A SIMPLE TWO-QUADRANT DC MOTOR CONTROLLER	522
<i>Felix A. Himmelstoss, Yvonne Flicker, Markus Rabl</i>	
MACHINE EMULATOR: POWER-ELECTRONICS BASED TEST EQUIPMENT FOR TESTING HIGH-POWER DRIVE CONVERTERS	528
<i>M. Oettmeier, R. Bartelt, C. Heising, V. Staudt, A. Steimel, St. Tietmeyer, B. Bock, Ch. Doerlemann</i>	
INTERLEAVED 3 PHASE DC/DC CONVERTER FOR AUTOMOTIVE APPLICATIONS	535
<i>O. Cornea, N. Muntean, M. Gavris</i>	
NONLINEAR MODELING OF POWER-FACTOR-CORRECTION CONVERTER	541
<i>Marcelle Merhy, Cristina Morel, Eric Chauceau, Mohamed Machmoum</i>	
PARTICLE SWARM OPTIMIZATION FOR OPTIMAL POWERTRAIN COMPONENT SIZING AND DESIGN OF FUEL CELL HYBRID ELECTRIC VEHICLE	547
<i>Omar Hegazy, Joeri Van Mierlo</i>	
DUAL LOOP DIGITAL CONTROL DESIGN AND IMPLEMENTATION OF A DSP BASED HIGH POWER BOOST CONVERTER IN FUEL CELL ELECTRIC VEHICLE	556
<i>Omar Ellabban, Omar Hegazy, Joeri Van Mierlo, Philippe Lataire</i>	
PWM POWER CONVERTER VOLTAGE QUALITY BOUNDS AND THEIR APPLICABILITY TO NON-PWM CONTROL SCHEMES	564
<i>A. Ruderman, B. Rezniko</i>	
LOSS BALANCING FOR ACTIVE-NPC AND ACTIVE-STACKED-NPC MULTILEVEL CONVERTERS	571
<i>D. Floricaeu, E. Floricaeu, L. Parvulescu, G. Gateau</i>	
IMPROVED STRATEGY FOR AN INSTANTANEOUS SUPER-RESONANT CONVERTER REGULATION	577
<i>Stanimir Valtchev, Svilen Valtchev</i>	
ELECTRIC AND ELECTRONIC EQUIPMENT OF A RESEARCH-ORIENTED ELECTROSTATIC SEPARATOR	585
<i>Tiberiu Butnoi, Gabriel Gagi, Mihai Bilici, Adrian Samuila, Vasile Neamtu, Roman Morar, Lucian Dascalescu, Alexandru Iuga</i>	
THREE-LEVEL ASNPC CONVERTER IMPLEMENTED WITH AN ANALOGUE COMMAND	592
<i>L. Parvulescu, D. Floricaeu, M. Covrig, I. Parvulescu</i>	
A NEW CURRENT CONTROL USING TWO HYSTERESIS MODULATION FOR A NEW 3-LEVEL INVERTER	598
<i>Kambiz Arab Tehrani, Ignace Rasoanarivo, Ludovic Barrandon, Mohammed Hamzaoui, Francois-Michel Sargos, Mohammadreza Rafiei</i>	

EXPERIMENTAL STAND FOR RESEARCH THE ALTERNATORS DIRECTIONS OF FURTHER DEVELOPMENT	605
<i>E. Ceuca, S. Lungu, A. Tulbure, Gh. Brezeanu</i>	
A LOW VOLTAGE SENSORLESS SWITCHED RELUCTANCE MOTOR DRIVE USING FLUX LINKAGE METHOD	611
<i>Thomaq Koblara, Ciprian Sorandaru, Sorin Musuroi, Marcus Svoboda</i>	
CAPACITIVE SENSORS FOR POSITION ACQUISITION OF LINEAR DRIVES WITH PASSIVE VEHICLES	619
<i>M. Mihalachi, P. Mutschler</i>	
IMPROVING AND MEASURING THE EFFICIENCY OF THE SPEED SENSORLESS VECTOR CONTROLLED INDUCTION MOTOR	627
<i>Emad Hussein, P. Mutschler</i>	
POSITION SENSORLESS CONTROL OF A LINEAR INTERIOR PERMANENT MAGNET OSCILLATORY MACHINE, WITH EXPERIMENTS	635
<i>S. C. Agarlita, I. Boldea, F. Marignetti, L. N. Tutelea</i>	
DESIGN, CONTROL AND MONITORING OF A SYNCHRONOUS LINEAR MOTOR SERVO DRIVE SYSTEM BASED ON DISTRIBUTED CONTROLLERS	642
<i>Sorin Silaghiu, Peter Mutschler</i>	
OPTIMUM CURRENT COMMAND ALGORITHM FOR WIDE SPEED RANGE AND FOUR QUADRANT OPERATION OF PMSMS DRIVE WITHOUT REGENERATIVE UNIT	650
<i>N. V. Olarescu, S. Musuroi, C. Sorandaru, M. Weinmann, S. Zeh</i>	

VOLUME 2

CASCADE BASED CONTROL OF A DRIVETRAIN WITH BACKLASH	656
<i>Florin Caruntu Constantin, Elena Balau Andreea, Corneliu Lazar</i>	
ACTIVE DYNAMIC DAMPING OF TORSIONAL VIBRATIONS BY H_{∞}-CONTROL	662
<i>C. Sourkounis</i>	
NONCOHERENT DEMODULATION OF CONTINUOUS PHASE MODULATED SIGNALS USING EXTENDED KALMAN FILTERING	670
<i>Janos Gal, Andrei Campeanu, Ioan Nafornita</i>	
DEVELOPMENT OF HARDWARE REDUNDANT EMBRYONIC STRUCTURE FOR HIGH RELIABILITY CONTROL APPLICATIONS	674
<i>Cs. Szasz, V. Chindris</i>	
ON THE DEVELOPMENT OF AN EXPERIMENTAL CAR-LIKE MOBILE ROBOT	680
<i>Robert Gall, Fritz Troster, Gheorghe Mogan</i>	
MECHANICAL-ELECTRICAL OPTOISOLATOR TRANSDUCERS	686
<i>Ioan Marcel Ciurus, Mihai Dimian, Adrian Graur</i>	
INTELLIGENT ACTIVE VISION SYSTEM FOR AUTONOMOUS ROBOTS	692
<i>F. Moldoveanu, C. Boldisor, D. Floroian, C. Suliman, C. Suci</i>	
DYNAMIC LOAD CHANGE STRESS MINIMIZING CONTROL OF ELASTICALLY COUPLED MULTI-MASS SYSTEMS	700
<i>Matthias Joost, Christian Mehler, Bernd Orlik</i>	
DESIGN, IMPLEMENTATION AND MONITORING OF A SCREW ORDER HANDLING PROCESS USING BUSINESS PROCESS MANAGEMENT TOOLS	706
<i>Alina Girbea, Francisc Sisak, Liviu Perniu</i>	
EFFECTIVE OPTIMIZATION OF CONTROLLERS STABILIZING CLOSED CIRCUIT GRINDING SYSTEMS OF CEMENT	714
<i>D. Tsamatsoulis, C. Lungoci</i>	
OPTIMAL FPGA IMPLEMENTATION OF GARBF SYSTEMS	720
<i>I. C. Vizitiu, I. C. Rincu, A. Radu, I. Nicolaescu, F. Popescu</i>	
BUFFERING APPLICATION FOR AN INDUSTRIAL MONITORING SOFTWARE SYSTEM	726
<i>Costin-Marius Grigorescu, Sorin-Aurel Moraru, Florian Neukart, Milian Badea</i>	
DATA ACQUISITION, STORAGE AND ONLINE RETRIEVAL OF CHROMATOGRAPHY FROM AUTOMATED HPLC FOR PHARMACEUTICAL RESEARCH APPLICATIONS	732
<i>Mohammad Shukri Hapeez, Ahmad Ihsan Mohd Yassin, Habibah Hashim, Mustafar Kamal Hamzah</i>	
OPTIMAL FPGA IMPLEMENTATION OF GAMLP SYSTEMS	741
<i>I. C. Vizitiu, I. C. Rincu, F. Popescu</i>	
VISUAL CONTROL ARCHITECTURE OF SERVOING SYSTEMS BASED ON IMAGE MOMENTS	747
<i>Cosmin Copot, Adrian Burlacu, Corneliu Lazar</i>	

THE SYNCHRONOUS CONTROL OF NODES AND THE MESSAGE TIME DELAYS ESTIMATION FOR A CAN NETWORK	753
<i>D. Puiu, F. Moldoveanu, S. Ryzkin</i>	
MODELING A KNOWLEDGE BASE FOR GENERATING NEW TRAJECTORIES FOR A ROBOT ARM LOCATED IN A CELL OF A FLEXIBLE FABRICATION LINE.....	759
<i>G. A. Calangiu, I. Sarkany, M. Stoica, F. Sisak</i>	
SURVEILLANCE MULTIAGENT SYSTEM USING ROBOT VISION BASED ON FUZZY CONTROLLER.....	765
<i>D. Floroian, F. Moldoveanu, S. Ryzkin, C. Suci</i>	
WLAN ROAMING SIMULATOR.....	771
<i>Ioana Cobeanu, C. Catrinescu, Ioan Margineanu, Lucian Mihai Itu</i>	
A METHOD PROPOSED FOR TRAINING AN ARTIFICIAL NEURAL NETWORK USED FOR INDUSTRIAL ROBOT PROGRAMMING BY DEMONSTRATION.....	777
<i>M. Stoica, G. A. Calangiu, F. Sisak, I. Sarkany</i>	
A COMPARATIVE ANALYSIS OF TWO SELF-LEARNING BASED STRATEGIES FOR FUZZY CONTROLLER DESIGN.....	783
<i>C. Boldisor, V. Comnac, I. Topa, S. Coman</i>	
A FUZZY APPROACH REGARDING THE ANALYSIS OF WINE PRODUCTION DEPENDING ON DIFFERENT ENVIRONMENTAL PARAMETERS BASED ON STATISTICAL SIGNAL PROCESSING.....	789
<i>Alexandru-Mihnea Spiridonica, Iulian Stoleriu, Romeo Cristian Ciobanu</i>	
EXTENDED RRT ALGORITHM WITH DYNAMIC N-DIMENSIONAL CUBOID DOMAINS.....	797
<i>Christos Fragkopoulos, Axel Graeser</i>	
FRACTIONAL ORDER CONTROL FOR DC ELECTRICAL DRIVES IN NETWORKED CONTROL SYSTEMS	804
<i>Simona Coman, V. Comnac, Cr. Boldisor, D. C. Dumitrache</i>	
BOILER-TURBINE SIMULATOR WITH REAL-TIME CAPABILITY FOR DISPATCHER TRAINING USING LABVIEW	810
<i>Mihai Iacob, Gheorghe-Daniel Andreescu, Nicolai Muntean</i>	
A COMPOSABLE, ENERGY-MANAGED, REAL-TIME MPSOC PLATFORM	816
<i>Anca Molnos, Jude Angelo Ambrose, Kees Goossens</i>	
MODEL DRIVEN DEVELOPED MACHINE VISION SYSTEM FOR SERVICE ROBOTICS	823
<i>S. M. Grigorescu, O. Prenzel, A. Graser</i>	
ARTIFICIAL OLFACTION SYSTEM WITH HARDWARE ON-CHIP LEARNING NEURAL NETWORKS.....	830
<i>Alin Tisan, Marcian Cirstea, Stefan Oniga, Attila Buchman</i>	
ELECTROCARDIOGRAM BASELINE WANDER REMOVAL USING STATIONARY WAVELET APPROXIMATIONS.....	836
<i>Beatrice Arvinty, Dumitru Toader, Marius Costache, Alexandru Isar</i>	
FOCUSING CONTROL UNDER MICROSCOPIC VIEWS BASED ON REGIONAL MONOTONES OF IMAGE FOCAL VALUES.....	842
<i>Ku Chin Lin</i>	
DATA ACQUISITION AND VIRTUAL INSTRUMENTATION SYSTEM FOR THE STUDY OF PELTIER AND SEEBECK EFFECTS.....	849
<i>Florin Sandu, Venetia Sandu, Stefan Nan, Adrian Iulian Dumitru</i>	
SELF-TUNING CURING OVEN CONTROL.....	855
<i>R. M. Schoeman, J. F. J. Van Rensburg, D. V. Nicolae</i>	
A CALIBRATION LABORATORY FOR ROGOWSKI COIL USED IN ENERGY SYSTEMS AND POWER ELECTRONICS	859
<i>A. Marinescu</i>	
HARDWARE IMPLEMENTATION OF A REAL-TIME 3D VIDEO ACQUISITION SYSTEM	866
<i>Istvan Andorko, Peter Corcoran, Petronel Bigioi</i>	
REAL NETWORK TRAFFIC ANOMALY DETECTION BASED ON ANALYTICAL DISCRETE WAVELET TRANSFORM	872
<i>Marius Salagean</i>	
COMPARISON OF WAVELET FAMILIES WITH APPLICATION TO WIMAX TRAFFIC FORECASTING.....	878
<i>Cristina Stolojescu, Ion Railean, Sorin Moga, Alexandru Isar</i>	
PAPR REDUCTION IN MULTICARRIER MODULATIONS USING GENETIC ALGORITHMS	884
<i>Marco Lixia, Maurizio Murrone, Vlad Popescu</i>	
MODEL OF SUPERCAPACITOR-STARTER ASSEMBLY USED FOR INTERNAL COMBUSTION ENGINES STARTING	889
<i>Aurel Cornel Stanca, Paul Nicolae Borza, Mihai Romanca, Roxana Paun, Sorin Zamfir</i>	

SINGLE-STAGE TRAVELLING WAVE AMPLIFIER FOR POWER APPLICATIONS	895
<i>Metin Yazgi, Mustafa Sayginer, Bal S. Virdee, Ali Toker, Hakan Kuntman</i>	
COMPARING THE PERFORMANCE OF DUO-BINARY TURBO CODES ON RAYLEIGH CHANNEL	899
<i>Maria Kovaci, Horia Balta</i>	
CAD OF MIMO SYSTEMS BY REDUCED ORDER MODELING	903
<i>Lucia Dumitriu, Mihai Iordache, Lucian Mandache</i>	
GALS-SA: SYNCHRONOUS-ASYNCHRONOUS CONFIGURABLE PLATFORM	909
<i>Razvan Jipa, Traian Tulbure</i>	
A NEW WIDEBAND FULLY-DIFFERENTIAL LNA WITH MATCHED INPUT AND OUTPUT IMPEDANCES	917
<i>Balwant Godara, Yahya Lakys, Alain Fabre</i>	
REDUCING NOISE IN EMBEDDED SYSTEMS BY CLOCK SIGNAL SPECTRUM SPREADING	921
<i>Petre Ogrutan, Csaba-Zoltan Kertesz, Gheorghe Pana</i>	
INTELLIGENT IMAGE DATA PROCESSING FOR ACQUIRING TARGET IN A MULTISENSOR PLATFORM	927
<i>Octavian Grigore-Muler, Mihai Barbelian, Janel Arhip, Mihai Jurba</i>	
IMPROVED CONTOURS FOR TOF CAMERAS BASED ON VICINITY LOGIC OPERATIONS	935
<i>Gabriel Danciu, Mihai Ivanovici, Vasile Buzuloiu</i>	
ASPECTS ON THE STABILITY OF A GYROSCOPIC ANGLE MEASUREMENT SYSTEM	939
<i>Carmen Gergan, Petre Ogrutan, Laslo Nagy</i>	
TESTBENCH COMPONENTS VERIFICATION USING FAULT INJECTION TECHNIQUES	943
<i>N. A. Banciu, G. Toacse</i>	
ADAPTIVE HARDWARE-SOFTWARE CO-DESIGN PLATFORM FOR FAST PROTOTYPING OF EMBEDDED SYSTEMS	950
<i>Stefan Oniga, Alin Tisan, Claudiu Lung, Attila Buchman, Ioan Orha</i>	
OPTIMIZATION OF SIGMA-DELTA MODULATOR BASED ON ARTIFICIAL IMMUNE ALGORITHMS	956
<i>Gabriel V. Iana, Gheorghe Serban, Petre Anghelescu, Laurentiu Ionescu</i>	
MEASUREMENT SYSTEM FOR NON-DESTRUCTIVE TESTING USING ULTRASONIC TOMOGRAPHY SPECTRAL ATTENUATION	962
<i>Giovanna Concu, Barbara De Nicolo, Carlo Piga, Vlad Popescu</i>	
A DESIGN APPROACH TO CHARGE INJECTION MODELING	967
<i>Laszlo Szilagyi, Andrei Danchiv, Mircea Bodea</i>	
A GENERALIZED APPROACH TO COMPLEX FILTER DESIGN WITH OPEN LOOP ACTIVE CELLS	973
<i>Gabor Csipkes, Doris Csipkes, Hernando Fernandez-Canque, Sorin Hintea</i>	
VOICE QUALITY DEGRADATION RECOGNITION USING THE CALL LENGTHS	980
<i>Zoltan Gaspar, Izabella Gocza</i>	
MIDDLEWARE FOR WIRELESS SENSOR NETWORKS BASED ON SERVICE DELIVERY FRAMEWORK	986
<i>Virgil Cazacu, Laura Cobarzan, Iuliu Szekeley, Vasile Dadarlat, Florin Sandu</i>	
ETHERNET COMMUNICATION FOR DETECTION OF EMERGENCY LOCATIONS AND DYNAMIC EVACUATION IN UNDERGROUND INFRASTRUCTURES	992
<i>Christoph Muller, Andreas Noack</i>	
THE QUALITY OF MULTIPLE VOIP CALLS IN AN ENCRYPTED WIRELESS NETWORK	998
<i>Mihai Ivanovici, Stefan Savu</i>	
METHODS FOR INCREASING THE ACCESS TO INFORMATION DATABASES USING OPEN SOURCE TOOLS	1002
<i>Catalin Ioan Maican</i>	
EMBEDDED SYSTEMS PLATFORM-BASED DESIGN FROM TEACHING TO INDUSTRY OR VICE-VERSA	1008
<i>Nicusor Birsan, Horia Cornel Hedesiu</i>	
A VIRTUAL REALITY BASED HUMAN-NETWORK INTERACTION SYSTEM FOR 3D INTERNET APPLICATIONS	1016
<i>Vlad Cristian Stoianovici, Doru Talaba, Adrian-Valentin Nedelcu, Mihai Machedon Pisu, Florin Barbuceanu, Adrian Stavar</i>	
INSTRUCTIONAL DESIGN IN THE VOCATIONAL TRAINING ON “COMPUTER NETWORKING”	1024
<i>Venetia Sandu, Adrian-Valentin Nedelcu, Sorin Alexandru Cocorada, Sebastien Dinu</i>	
HIGH-PERFORMANCE MAGNETIC GEARS TOPOLOGIES	1031
<i>Ovidiu S. Chirila, Dan Stoai, Mihai Cernat, Kay Hamayer</i>	

VARIABLE STEP SIZE P&O MPPT ALGORITHM FOR PV SYSTEMS	1037
<i>Ahmad Al-Diab, Constantinos Sourkounis</i>	
AN FPGA CONTROLLER FOR A COMBINED SOLAR / WIND POWER SYSTEM	1043
<i>Marcian Cirstea, Alberto Parera-Ruiz</i>	
NEW LOW COST STRUCTURE FOR DUAL AXIS MOUNT SOLAR TRACKING SYSTEM USING ADAPTIVE SOLAR SENSOR	1049
<i>Alin Argeseanu, Ewen Ritchie, Krisztina Leban</i>	
CURRENT-VOLTAGE CHARACTERISTIC RAISING TECHNIQUES FOR SOLAR CELLS. COMPARISONS AND APPLICATIONS	1055
<i>Daniel T. Cotfas, Petru A. Cotfas, Doru Ursutiu, Comel Samoila</i>	
POWER INJECTION SYSTEM FOR PHOTOVOLTAIC PLANTS BASED ON A MULTICONVERTER TOPOLOGY WITH DC-LINK CAPACITOR VOLTAGE BALANCING	1061
<i>Victor Minambres-Marcos, Enrique Romero-Cadaval, Maria Isabel Milanes-Montero, Migue Angel Guerrero-Martinez, Fermin Berrero-Gonzalez, Pedro Gonzalez Castrillo</i>	
SINGLE-PHASE GRID-CONNECTED DISTRIBUTED GENERATION SYSTEM WITH MAXIMUM POWER TRACKING	1071
<i>R. Bojoi, D. Roiu, G. Griva, A. Tenconi</i>	
ELECTRICAL RESPONSE OF AN OPTIMIZED ORIENTED PHOTOVOLTAIC SYSTEM	1078
<i>Bogdan Burduhos, Dorin Diaconescu, Ion Visa, Anca Duta</i>	
PHOTOVOLTAIC EFFICIENCY OF A GRID CONNECTED 10 KWP SYSTEM IMPLEMENTED IN THE BRASOV AREA	1086
<i>Alexandru Enesca, Mihai Comsit, Ion Visa, Anca Duta</i>	
OVERVIEW OF RECENT GRID CODES FOR WIND POWER INTEGRATION	1092
<i>Mufit Altin, Omer Goksu, Remus Teodorescu, Pedro Rodriguez, Birgitte-Bak Jensen, Lars Helle</i>	
METHODS FOR COGGING TORQUE REDUCTION OF DIRECTLY DRIVEN PM WIND GENERATORS	1101
<i>Tiberiu Tudorache, Leonard Melcescu, Mihail Popescu</i>	
A NEW CONVERSION AND CONTROL SYSTEM FOR A SMALL OFF – GRID WIND TURBINE	1107
<i>Nicolae Muntean, Octavian Cornea, Diana Petrila</i>	
POWER LOSSES ANALYSIS OF TWO-LEVEL AND THREE-LEVEL NEUTRAL CLAMPED INVERTERS FOR A WIND PUMP STORAGE SYSTEM	1114
<i>L. Clotea, A. Forcos, C. Marinescu, M. Georgescu</i>	
STORAGE ANALYSIS FOR STAND-ALONE WIND ENERGY APPLICATIONS	1120
<i>Luminita Barote, Corneliu Marinescu</i>	
A LOOK AT THE ROLE AND MAIN TOPOLOGIES OF BATTERY ENERGY STORAGE SYSTEMS FOR INTEGRATION IN AUTONOMOUS MICROGRIDS	1126
<i>I. Serban, C. Marinescu</i>	
SMART ELECTRICAL ENERGY STORAGE SYSTEM FOR SMALL POWER WIND TURBINES	1132
<i>M. Georgescu, L. Barote, C. Marinescu, L. Clotea</i>	
STUDY OF A GRID-CONNECTED HYBRID WIND/MICROHYDRO POWER SYSTEM ASSOCIATED WITH A SUPERCAPACITOR ENERGY STORAGE DEVICE	1138
<i>Stefan Breban, Benoit Robyns, Mircea M. Radulescu</i>	
CONTROL OF PARALLEL OPERATING MICRO HYDRO POWER PLANTS	1144
<i>C. P. Ion, C. Marinescu</i>	
LOW-COST, HIGH FLEXIBILITY I-V CURVE TRACER FOR PHOTOVOLTAIC MODULES	1150
<i>Julen Joseba Maestro Ibirriaga, Xabier Miquelez De Mendiluce Pena, Adrian Opritescu, Dezso Sera, Remus Teodorescu</i>	
DYNAMIC MODEL OF A SMALL HYDROPOWER PLANT	1156
<i>C. Jaliu, I. Visa, D. Diaconescu, R. Saulescu, M. Neagoe, O. Climescu</i>	
OPTIMAL SELECTION OF WIND TURBINE FOR A SPECIFIC AREA	1164
<i>Ciprian Nemes, Florin Munteanu</i>	
MONITORING OF A GROUND SOURCE HEAT PUMP WITH HORIZONTAL COLLECTORS	1170
<i>Adrian Virgil Craciun, Florin Sandu, Gheorghe Pana</i>	
CHALLENGES FOR SMART DISTRIBUTION SYSTEMS: DATA REPRESENTATION AND OPTIMIZATION OBJECTIVES	1176
<i>Gianfranco Chicco</i>	
FROM MICROGRIDS TO SMART GRIDS: MODELING AND SIMULATING USING GRAPHS. PART I ACTIVE POWER FLOW	1185
<i>C. Marinescu, A. Deaconu, E. Ciurea, Daniela Marinescu</i>	
FROM MICROGRIDS TO SMART GRIDS: MODELING AND SIMULATING USING GRAPHS. PART II OPTIMIZATION OF REACTIVE POWER FLOW	1191
<i>C. Marinescu, A. Deaconu, E. Ciurea, Daniela Marinescu</i>	

A STUDY ON WIND ENERGY GENERATION FORECASTING USING CONNECTIONIST MODELS	1197
<i>Iulia Coroama, Mihai Gavrilas</i>	
INTELLIGENT DISTRIBUTED STATE ESTIMATION USING REI SYSTEM EQUIVALENTS AND PHASOR MEASUREMENTS	1203
<i>Ovidiu Ivanov, Mihai Gavrilas, Gh. Asachi</i>	
LOAD CURVE ANALYSIS FOR AN INDUSTRIAL CONSUMER	1209
<i>Catalin Mihai, Ionel Lepadat, Elena Helerea, Daniel Calin</i>	
EVALUATION OF THE PERFORMANCES OF EFFICIENT TRANSFORMERS IN DISTRIBUTION NETWORKS BY FUZZY TECHNIQUES	1215
<i>Gheorghe Grigoras, Gheorghe Cartina, Elena-Crenguta Bobric, Florina Rotaru</i>	
SELECTIVE DETECTION OF SIMPLE GROUNDING FAULTS IN MEDIUM VOLTAGE POWER NETWORKS WITH RESONANT EARTHED NEUTRAL SYSTEM	1219
<i>Dumitru Toader, Petru Ruset, Stefan Haragus, Constantin Blaj, Ioan Hategan, Nicolae Pinte, Iulia Cata</i>	
DETERMINATION OF TYPICAL LOAD PROFILES IN HYDRO-POWER PLANT BY CLUSTERING TECHNIQUES	1228
<i>Daniela Comanescu, Gheorghe Grigoras, Gheorghe Cartina, Florina Rotaru</i>	
OZONE SYNTHESIS UNDER SURFACE DISCHARGES GENERATED ON THE ALUMINA CONCENTRIC ACTUATOR	1232
<i>S. Jodzis, T. Smolinski, P. Sowka</i>	
DESIGN OF A PLASMA GENERATOR BASED ON E POWER AMPLIFIER AND IMPEDANCE MATCHING	1237
<i>Dorin Petreus, Alin Grama, Sergiu Cadar, Emil Plaian, Adina Rusu</i>	
PULSED DIELECTRIC BARRIER DISCHARGE GENERATED AT THE GAS-LIQUID INTERFACE FOR THE DEGRADATION OF THE ORGANIC DYE METHYL RED IN AQUEOUS SOLUTION	1243
<i>D. Piroi, M. Magureanu, N. B. Mandache, V. David, V. Parvulescu</i>	
REACTIONS INDUCED BY ELECTRICAL DISCHARGES IN POLLUTANT ABATEMENT AND BACTERIAL INACTIVATION	1249
<i>D. Moussa, M. Naitali, J. M. Henry, B. Hnatiuc, J. L. Brisset</i>	
DIRECT AND POST-DISCHARGES IN ENVIRONMENTAL APPLICATIONS OF COLD PLASMAS	1256
<i>G. Kamgang Youbi, M. Naitali, J. M. Herry, E. Hnatiuc, J. L. Brisset</i>	
REDUCTION OF ELECTROMAGNETIC PERTURBATIONS FOR COLD PLASMA ELECTROCHEMICAL REACTORS USING ELECTROMAGNETIC SCREENING	1263
<i>G. Todirasi, E. Hnatiuc, R. Burlica, B. Hnatiuc, B. Gavril</i>	
THE IGNITION AND CONTROL CONDITION FOR THE USEFUL DISCHARGE IN A GLIDARC REACTOR WITH PLANE GEOMETRY AND AUXILIARY ELECTRODES	1269
<i>E. Hnatiuc, J. L. Brisset, B. Hnatiuc</i>	
HYDROGEN AND HYDROGEN PEROXIDE FORMATION IN THE AC WATER-SPRAY GLIDING ARC REACTOR	1275
<i>R. Burlica, B. Hnatiuc, E. Hnatiuc</i>	
THE STUDY OF AN ELECTRIC SPARK FOR IGNITING A FUEL MIXTURE	1281
<i>B. Hnatiuc, S. Pellerin, E. Hnatiuc, R. Burlica</i>	
FUTURE ELECTRONIC POWER DISTRIBUTION SYSTEMS – A CONTEMPLATIVE VIEW –.....	1287
<i>Dushan Boroyevich, Igor Cvetkovic, Dong Dong, Rolando Burgos, Fei Wang, Fred Lee</i>	
HIGH-EFFICIENCY VARIABLE-SPEED ELECTRIC MOTOR DRIVE TECHNOLOGIES FOR ENERGY SAVINGS IN THE US RESIDENTIAL SECTOR	1299
<i>Dan M. Ionel</i>	
Author Index	