

## **Plenary Session 1**

Thursday, May 20, 2010, 8:30-11:00, Room 1  
Session Chairs: *Amir Mansour Miri, Ion Boldea*

### **Future Electronic Power Distribution Systems – A contemplative view –**

*Dushan Boroyevich, Igor Cvetković, Dong Dong, Rolando Burgos, Fei Wang, Fred Lee*  
Virginia Tech, Blacksburg, Virginia, USA

### **Electrification of Vehicle Power Trains - Chances and Challenges**

*Michael Merkle*, Senior Manager (CR/AEP2), Corporate Sector Research and Advance Engineering  
Drivetrain Systems and Auxiliaries, Robert Bosch GmbH, STUTTGART, GERMANY

### **Power Electronics for Renewable Sea Wave Energy**

*Marian P. Kazmierkowski* and *Marek Jasiński*, Institute of Control and Industrial Electronics,  
Warsaw University of Technology, Warsaw, Poland

### **VESTAS wind-generator systems**

*Jorge Martinez Garcia, Florin Lungeanu*,  
Power System Analysis Global Research Department, Vestas Wind Systems R&D, Aarhus, Denmark

## **Plenary Session 2**

Friday, May 21, 2010, 8:30-10:45, Room 1

Session Chairs: *Dushan Boroyevich, Marian P. Kazmierkowski*

### **Multi-physical Simulation of Drive Trains**

*Enno Lange, Michael van der Giet, Thomas Herold, Kay Hameyer*, RWTH Aachen University, Germany

### **Encoderless Control of Synchronous Machines with Permanent Magnets - Impact of Magnetic Design**

*Ralph Kennel*, Technical University of Munich, Germany

### **High Efficiency Electric Motors and Drives for the American Home - the A.O. Smith Perspective**

*Dan M. Ionel*, Engineering Fellow A.O. Smith Corp., Corporate Technology Centre, Milwaukee, USA

## **PSEM1 - Oral Session - Power Systems and Electromagnetics**

Thursday, May 20, 2010, 11:15-13:15, Room 2  
Session Chairs: *Vladimir Katic, Andrei Marinescu,*

RD-004057

### **Influence of Trace Additives on Dielectric Properties of Gas**

*Zden Kucerovsky, Adrian Ieta, University of Western Ontario, Canada*

RD-000841

### **DFIG Turbine Representation for Small Signal Voltage Control Studies**

*Jorge Martinez Garcia, Philip Carne Kjaer, Vestas Wind Systems A/S, Denmark  
Remus Teodorescu, Pedro Rodriguez, Aalborg University, Denmark*

RD-000906

### **Voltage Stability with Mechanically Switched Capacitors Using Vacuum Circuit Breakers in the High-Voltage Grid**

*Timo Wenzel, Thomas Leibfried, Karlsruhe Institute of Technology, Germany*

RD-002313

### **A New Algorithm for Steady State Load Shedding Strategy**

*Vito Calderaro, Vincenzo Galdi, Valerio Lattarulo, Pierluigi Siano, University of Salerno, Italy*

RD-002496

### **Optimal Decision on Contract Size for V2G Aggregator regarding Frequency Regulation**

*Sooheong Jang, Sekyung Han, University of Tokyo, Japan  
Soo Hee Han, Konkuk University, Korea (South)  
Kaoru Sezaki, University of Tokyo, Japan*

RD-001198

### **Magnetic Measurements from Low to High Frequency on Amorphous Ribbon of Co<sub>67</sub>Fe<sub>4</sub>B<sub>14.5</sub>Si<sub>14.5</sub> and Prediction of Excess Losses with the Statistical Loss Model Based on Magnetic Objects (OM) Theory**

*Veronica Păltânea, Gheorghe Păltânea, University "Politehnica" of Bucharest, Romania  
Elena Helerea, "Transilvania" University of Brasov, Romania  
Iosif Nemoianu, Emil Cazacu, University "Politehnica" of Bucharest; Romania*

RD-000922

### **Magnetic Properties of Two-Dimensional (2D) Classical Square Heisenberg Lattices. I - Zero-Field Partition Function**

*Jacques Curély, Université Bordeaux 1, France*

RD-005487

### **Study of the Magnetic Properties of Two-Dimensional (2D) Classical Square Heisenberg Antiferromagnets. II - Spin Correlations and Susceptibility**

*Jacques Curély, Université Bordeaux 1, France*

## **PSEM2 - Oral Session - Power Systems and Electromagnetics**

Thursday, May 20, 2010, 15:30-18:00, Room 2

Session Chairs: *Jacques Curely, Virgiliu Fireteanu*

RD-004499

### **Fourier Transform of the Pulse Function for Application in High Voltage Technique**

*Vesna Javor*, University of Nis, Serbia

RD-001112

### **Mobile Phone SAR Analysis through Experimental and Numerical Simulation**

*Mihaela Morega*, University "Politehnica" of Bucharest, Romania

*Andrei Marinescu*, Research, Development and Testing National Institute for Electrical Engineering (ICMET), Craiova, Romania

*Alexandru Mihail Morega*, University "Politehnica" of Bucharest, Romania

RD-002992

### **Comparison of Winding Topologies in a Pot Core Rotating Transformer**

*Johan Smeets, Laurentiu Encica, Elena Lomonova*, Eindhoven University of Technology, Netherlands

RD-004553

### **Analytical and Numerical Computation of the Electric Field of Hyperboloid-Plane Geometry with and without Space Charges**

*Sebastian Azer, Thomas Mertens, Dirk Peier*, Technical University of Dortmund, Germany

RD-004561

### **High-Voltage Ceramic Post Insulators - Least-Effort Determination of Bending Strength under Short-Circuit**

*Norbert Stein*, FGH, Mannheim, Germany

*Amir Mansour Miri*, University of Karlsruhe, Germany

RD-006602

### **Thermal and Voltage Testing and Characterization of Supercapacitors and Batteries**

*Ana Maria Puscas, Marius Catalin Carp, Csaba Zoltan Kertesz, Paul Nicolae Borza*, "Transilvania" University of Brasov, Romania

*Gerard Coquery*, National Research Institute of Transport and its Security, France

RD-002879

### **Electrical Design of Electroporation Reactors**

*Martin Sack, Georg Müller*, Karlsruher Institut für Technologie, Germany

RD-001163

### **A Novel, Ferrofluid-Cooled Transformer. Electromagnetic Field and Heat Transfer by Numerical Simulation**

*Alexandru Mihail Morega, Mihaela Morega*, University "Politehnica" of Bucharest, Romania

*Lucian Pişlaru-Dănescu, Victor Stoica, Florica Nouras*, National Institute for Electrical Engineering, Bucharest, Romania

*Florian D. Stoian*, University "Politehnica" of Timisoara, Romania

RD-006912

### **Dynamic Characteristics of a Permanent Magnet Electromagnetic Valve Actuator**

*Ivan Yatchev, Vultchan Gueorgiev, Krastio Hinov*, Technical University of Sofia, Bulgaria

*Dimitar Dimitrov*, Technical University of Varna, Bulgaria

## **PSEM3 - Poster Session - Power Systems and Electromagnetics**

Thursday, May 20, 2010, 14:30-15:30, Lobby

Session Chairs: *Ivan Yatchev, Dumitru Toader, Alexandru Morega, Alexandru Bitoleanu*

RD-000477

### **Multi-Information Extraction Algorithm for Power Quality Monitoring**

*Chia Kwang Tan, Vigna Kumaran Ramachandaramurthy, S. R. K. Kanaesalingam,*  
"Tenaga" National University, Kajang, Selangor Malaysia

RD-006483

### **Frequency Estimation in Distribution Grids from Voltage Monitoring Data**

*Ralf Neurohr, Dr. Ralf Neurohr Consulting Ltd, Bucharest, Romania*  
*Mihaela Albu, Alexandru Nechifor, University "Politehnica" of Bucharest, Romania*

RD-002046

### **Analytical Method for Hysteresis Modeling of Soft Magnetic Materials**

*Septimiu Motoasca, Andrei Nicolaide, Elena Helerea, Gheorghe Scutaru,*  
"Transilvania" University of Brasov, Romania

RD-001546

### **Analysis of Direct Current Flowing Inside a Linear Increasing Conductivity Half-Space**

*Ovidiu Centea, Technical University of Civil Engineering of Bucharest, Romania*  
*Iosif Vasile Nemoianu, Emil Cazacu, Veronica Paltanea, Gheorghe Paltanea,*  
University "Politehnica" of Bucharest

RD-005347

### **Semi-Analytical Solutions to the Schroedinger-Poisson Model of Electron States**

*Junior Barrett, Maria M. De Souza, Silvia Cirstea, Anglia Ruskin University, United Kingdom*

RD-000442

### **Radial and Axial Short-Circuit Electrodynamics Forces of Three Phase Power Transformers**

*Ioan-Dragos Deaconu, Constantin Ghita, Valentin Navrapescu, Aurel-Ionut Chirila,*  
University "Politehnica" of Bucharest, Romania

RD-000965

### **Detection of Inrush Current Using S-Transform and Competitive Neural Network**

*Geev Mokryani, University of Salerno, Italy*

RD-002526

### **Analytical-Numerical Approach for Levitation Force Calculation on a Cylindrical Bearing with Permanent Magnets Used in an Electrical Meter**

*Marian Greconici, University "Politehnica" of Timisoara, Romania*  
*Zlata Cvetkovic, Ana Mladenovic, Slavoljub Aleksic, University of Nis, Serbia*  
*Daniela Vesa, University "Politehnica" of Timisoara, Romania*

RD-002925

### **Spark Gap Erosion in Marx Generators for Electroporation**

*Florian Attmann, Martin Sack, Georg Müller, Karlsruher Institut für Technologie, Germany*

RD-003441

### **Dielectric Properties Characterization of Conductive Polymeric Materials at Temperature and Frequency Variation**

*Vlad-Andrei Scarlatache, Maria Ursan, Romeo Cristian Ciobanu,*  
"Gheorghe Asachi" Technical University of Iasi, Romania

RD-006734

**A Supercapacitor Stack - Design and Characteristics**

*Ioan Danut Oltean, Adrian Marian Matoi, Elena Helerea*, "Transilvania" University of Brasov, Romania

RD-005045

**Study of High Frequency Signals Behavior**

*Lia Elena Aciu, Petre Lucian Ogrutan, Mihai Scutaru, Adrian Mailat*

"Transilvania" University of Brasov, Romania

RD-006696

**Effects of PC Clusters on Network Harmonics Distortion**

*Vladimir Katic*, University of Novi Sad, Serbia

*Sasa Mujovic*, University of Montenegro, Podgorica, Montenegro

*Jadranka Radovic*, University of Montenegro, Podgorica, Montenegro

RD-002798

**An Analysis on the Optimal Fields Number of the Plate-Type Electrostatic Precipitators used in a Thermoelectric Power Plant**

*Gabriel Nicolae Popa*, University "Politehnica" of Timisoara, Faculty of Engineering Hunedoara, Romania

*Victor Vaida*, University of Oradea, Romania

*Sorin Ioan Deaconu*, University "Politehnica" of Timisoara, Faculty of Engineering Hunedoara, Romania

*Ioan Sora*, University "Politehnica" of Timisoara, Romania

RD-003565

**Disco Planner Flexible DG Allocation in MV Distribution Networks Using Multi-Objective Optimization Procedures**

*Ali Moeini, Hossein Yassami, Mohsen Owlady, Mohammad Hossein Sadeghi*,

Shahrood University of Technology, Shahrood, Iran

RD-006513

**Unpollutant incineration of risky medical waste using microwave energy**

*Daniela Iordache*, University "Politehnica" of Bucharest, Romania

*Dumitru Niculae*, FITPOL Company, Romania

## **EMID1 - Oral Session – Electrical Machines and Industrial Drives**

Thursday, May 20, 11:15-13:15, Room 1

Session chairs: *H. Bulent Ertan, Lucian Nicolae Tutelea*

RD-001759

### **Torque Optimization Algorithm for SRM Drives Using a Robust Predictive Strategy**

*Alin Argeseanu*, University “Politehnica” of Timisoara, Romania

*Ewen Ritchie, Krisztina Monika Leban*, Aalborg University, Denmark

RD-000213

### **Modeling of Saturation in Salient Pole Synchronous Machines**

*Aurel Campeanu*, University of Craiova, Romania

*Manfred Stiebler*, Technical University of Berlin, Germany

RD-000485

### **Electromagnetic Pumping of Molten Salts**

*Jacqueline Etay*, CNRS-Simap-EPM, France

*Virgiliu Fireteanu*, University “Politehnica” of Bucharest, Romania

*Yves Fautrelle*, CNRS-Simap-EPM, France

*Cristian Roman*, University “Politehnica” of Bucharest, Romania

RD-000515

### **Aspects Regarding Dynamic Regimes Modeling, Simulation and Monitoring for Reluctance Synchronous Motors**

*Sorin Enache, Aurel Campeanu, Ion Vlad, Monica-Adela Enache*, University of Craiova, Romania

RD-000787

### **The Magnetic Noise of Inverter-Fed Three-Phase Induction Motors with Squirrel Cage Rotors**

*Gheorghe Scutaru*, Ioan Peter, Razvan Mihai Ionescu, Andrei Negoita “Transilvania” University of Brasov, Romania

RD-000868

### **Switched Reluctance Motor Analytical Models, Comparative Analysis**

*Emil Padurariu, Liviu Somesan, Ioan-Adrian Viorel, Claudia Steluta Martis*,  
Technical University of Cluj-Napoca, Romania

*Octavian Cornea*, University “Politehnica” of Bucharest, Romania

RD-000876

### **Steady State Behavior of a Permanent Magnet Claw Pole Generator**

*Florin-Nicolae Jurca, Ioan-Adrian Viorel, Claudia Martis, Karoly Biro*,  
Technical University of Cluj-Napoca, Romania

RD-001031

### **The Simulation of a Multi-Phase Induction Motor Drive**

*Octavian Grigore-Müller, Mihai Barbelian*, University “Politehnica” of Bucharest, Romania

## EMID2 - Oral Session – Electrical Machines and Industrial Drives

Thursday, May 20, 15:30-18:00, Room 1  
Session chairs: *Dan M. Ionel, Ion Boldea*

RD-001171

### **Hybrid Algorithm for Multi-Objective Optimization of PMSM Using Massively Distributed Finite Element Analysis**

*Jens Krotzsch*, ebm-papst Muldingen GmbH & Co. KG, Germany  
*Bernhard Piepenbreier*, University of Nürnberg-Erlangen, Germany

RD-001538

### **Simulation of a High Voltage System in a Hybrid Electrical Vehicle**

*Rüdiger Appunn*, *Kay Hameyer*, RWTH Aachen University, Germany

RD-001619

### **Motion Sensorless Control of BLDC PM Motor with FEM Assisted Position and Speed Observer**

*Alin Stirban*, *Ion Boldea*, *Gheorghe-Daniel Andreescu*, University “Politehnica” of Timisoara, Romania  
*Dorin Iles*, ebm-papst St. Georgen GmbH & Co., Germany  
*Frede Blaabjerg*, Aalborg University, Denmark

RD-002585

### **Novel Motion Sensorless Control of Single Phase Brushless DC PM Motor Drive, with Experiments**

*Liviu Iepure*, *Ion Boldea*, *Gheorghe Daniel Andreescu*, University “Politehnica” of Timisoara, Romania  
*Dorin Iles*, ebm-papst St. Georgen GmbH & Co., Germany  
*Frede Blaabjerg*, Aalborg University, Denmark

RD-002968

### **I-f Starting and Active Flux Based Sensorless Vector Control of Reluctance Synchronous Motors, with Experiments**

*Sorin-Cristian Agarliță*, *Lucian Nicolae Tutelea*, *Ion Boldea*,  
University “Politehnica” of Timisoara, Romania  
*Marius Fatu*, Continental Automotive, Timisoara, Romania

RD-003018

### **A Novel, Single Stator Dual PM Rotor, Synchronous Machine: Topology, Circuit Model, Controlled Dynamics Simulation and 3D FEM Analysis of Torque Production**

*Ion Boldea*, *Lucian Nicolae Tutelea*, University “Politehnica” of Timisoara, Romania  
*Fabrizio Marignetti*, University of Cassino, Italy  
*Marcel Topor*, *Sorin Ioan Deaconu*,  
University “Politehnica” of Timisoara, Faculty of Engineering Hunedoara, Romania

RD-003166

### **Power-Optimized Symmetrizing Current Control with a 8.7 kNm-Transverse Flux Generator**

*Jochen Schuettler*, *Holger Groke*, *Marek Siatkowski*, *Johannes Adler*, *Bernd Orlik*,  
University of Bremen, Germany

RD-005401

### **Permanent-Magnet Synchronous Machine Model for Urban Transport Applications**

*Jie Fang*, *Carsten Heising*, *Volker Staudt*, *Andreas Steimel*, Ruhr-University Bochum, Germany

RD-003239

### **Rotor Bars Diagnosis in Single Phase Induction Motor Based on the Vibration and Current Spectrum Analysis**

*Mariana Iorgulescu*, *Robert Beloiu*, University of Pitesti, Romania  
*Mihai Octavian Popescu*, University “Politehnica” of Bucharest, Romania

RD-006718

**Representation of Iron Core and Dielectric Losses for Calculation of Common Mode Stator Ground Currents in Inverter-Fed AC Machines**

*Oliver Magdun, Andreas Binder, Yves Gemeinder, Darmstadt University of Technology, Germany*

## EMID3 - Oral Session – Electrical Machines and Industrial Drives

Friday, May 21, 14:30-17:00, Room 1

Session chairs: *Marian P. Kazmierkowski, Aurelian Craciunescu*

RD-003212

### **Sensorless Control of BLDC PM Motor Based on I/f Starting and Back-EMF Zero Crossing Detection**

*Ana Maria Ungurean, Vasile Coroban Schramel, Ion Boldea,*

University “Politehnica” of Timisoara, Romania

RD-005657

### **Stator-Flux Based Control of PMSM**

*Martin Oettmeier, Carsten Heising, Volker Staudt, Andreas Steimel,* Ruhr-University Bochum, Germany

RD-004626

### **3D Finite Element Thermal Analysis of a Small Power PM DC Motor**

*Ovidiu Craiu, Alina Machedon, Tiberiu Tudorache, Mihaela Morega, Mircea Modreanu,*

University “Politehnica” of Bucharest, Romania

RD-005398

### **The Induction Machine with Ring Stator Winding as a Possible Solution for Speed Regulation**

*Alecsandru Simion, Sorin Mihai, Leonard Livadaru, Adrian Munteanu,*

“Gheorghe Asachi” Technical University of Iasi, Romania

RD-005665

### **Heat Transfer Analysis in the Design Phase of a High Temperature Superconductor Motor**

*Alexandru M. Morega, Mihaela Morega,* University “Politehnica” of Bucharest, Romania

*Ioan Dobrin,* National Institute for Electrical Engineering, ICPE-CA, Bucharest, Romania

*Mihail Popescu,* Institute for Electrical Engineering, ICPE-ME, Bucharest, Romania

RD-006661

### **Speed and Position Estimation Technique for PMSM Based on Modified Machine Model**

*Vasilios Ilioudis, Nikolaos Margaritis,* Aristotle University of Thessaloniki, Greece

RD-006807

### **Higher Order Rotor Slot Harmonics for Rotor Speed & Position Estimation**

*H. Bulent Ertan,* Middle East Technical University, Ankara, Turkey

RD-001716

### **BLDC–SPM Motor Drive with DC–DC Converter in the DC Link: Hall Sensor versus Sensorless Speed Control**

*Vlad Gradinaru, Lucian Nicolae Tutelea, Ion Boldea,* University “Politehnica” of Timisoara, Romania

RD-000183

### **Simulation Study of Switched Reluctance Starter-Generator System Based on Nonlinear Model**

*Xiaoshu Zan, Hao Chen,* Liang Qiu, Pude Yu China University of Mining & Technology, China

*Viorel Trifa,* Technical University of Cluj-Napoca, Romania

## EMID4 - Poster Session – Electrical Machines and Industrial Drives

Thursday, May 20, 14:30-15:30, Lobby

Session chairs: *Mihail V. Cisteleanu, Dan Stoia, Aurel Campeanu, Mircea M. Radulescu*

RD-004162

### **Computation of the Characteristics Eddy Current Electromagnetic Brake for a Bicycle, by the Finite Element Method 3D**

*Constantin Stoica, Leonard Melcescu, Emilian Lefter, Luminita Mirela Constantinescu,*  
University of Pitesti, Romania

RD-0001228

### **Innovative Modular Fault Tolerant Switched Reluctance Machine – Design and Dynamic Simulations**

*Mircea Ruba, Ioana Bentia, Lorand Szabo,* Technical University of Cluj-Napoca, Romania

RD-002852

### **Determination of the Start Time for Three-Phase Cage Induction Motors that Drive Belt Transport Conveyers**

*Gabriel Nicolae Popa, Iosif Popa, Corina Maria Dinis, Angela Iagar*

University “Politehnica” Timisoara, Faculty of Engineering Hunedoara, Romania

RD-002933

### **A Class of Fast Dynamics V/f Sensorless AC General Drives with PM-RSM as a Case Study**

*Ion Boldea, Ana-Adela Moldovan, Vasile Coroban-Schramel, Gheorghe-Daniel Andreescu,*  
*Lucian Nicolae Tutelea,* University “Politehnica” of Timisoara, Romania

RD-002941

### **PM-RSM Sensorless Vector Control: Zero q-Axis Flux versus Approximate Maximum Torque per Current, with Experiments**

*Mihaela-Codruta Paicu, Lucian Nicolae Tutelea, Ion Boldea, Gheorghe-Daniel Andreescu,*  
*Razvan Ancuti,* University “Politehnica” of Timisoara, Romania

RD-003506

### **Design of an Extended Luenberger Observer for Sensorless Vector Control of Induction Machines under Regenerating Mode**

*Teodor Pana,* Technical University of Cluj-Napoca, Romania

*Olimpiu Stoicuta,* University of Petrosani, Romania

RD-003794

### **Analysis of the Pole Width Influence on a Four-Sided Linear Generator Performances**

*Claudiu Oprea, Claudia Martis, Karoly Biro,* Technical University of Cluj-Napoca, Romania

RD-004022

### **Induction Motor Optimization Electromagnetic Design: Hooke Jeeves Method versus Genetic Algorithms**

*Lucian Nicolae Tutelea, Ion Boldea,* University “Politehnica” of Timisoara, Romania

RD-004634

### **Vibration Monitoring for Fault’s Diagnosis of Electrical Equipment**

*Mariana Iorgulescu, Robert Beloiu,* University of Pitesti, Romania

*Mihai Octavian Popescu,* University “Politehnica” of Bucharest, Romania

RD-004677

### **Roebel Bar Losses Estimation for Optimization Purpose**

*Toma Dordea, Ileana Torac, Gheorghe Madescu, Martian Mot, Lucian Ocolisan,*

Romanian Academy, Timisoara Branch, Romania

*Victor Proca,* ICMET Craiova, Romania

RD-005355

**New Balancing Equipment for Mass Production of Small and Medium-Sized Electrical Machines**

*Ewen Ritchie, Krisztina Monika Leban*, Aalborg University, Denmark

*Alin Argeseanu*, University “Politehnica” of Timisoara, Romania

RD-006378

**A Novel Initial Rotor-Position Estimation Method for BLDC Motors Based on Four Voltage Pulses**

*Robert Istvan Lorincz, Virgil Tiponut*, University "Politehnica" of Timisoara, Romania

*Vasile Coroban-Schramel*, Continental Automotive, Timisoara, Romania

RD-006572

**Software Position Tuning of a SRM Drive System**

*Octavian Cornea, Dorin Popovici*, University “Politehnica” of Timisoara, Romania

RD-006785

**Modal Test of an Electrical Machine Rotor**

*Melania Filip, Calin Ioan Rosca, Elena Helerea*, “Transilvania” University of Brasov, Romania

## PEPC1 – Oral Session – Power Electronics and Power Converters

Thursday, May 20, 11:15-13:15, Room 3

Session Chairs: *Dushan Boroyevich, Dan Florica*

RD-005428

### **Realtime Simulation of Control Algorithms Including the Dedicated Control Hardware**

*Matthias Gorski, Roman Bartelt, Carsten Heising, Volker Staudt, Andreas Steimel,*

*Ruhr-University Bochum, Germany*

RD-004448

### **DC-Bus Voltage Optimum Control of Three-Phase Shunt Active Filter System**

*Alexandru Bitoleanu, Mihaela Popescu, Mircea Dobriceanu, Felicia Nastasoiu*

*University of Craiova, Romania*

RD-000507

### **Simple Comparison of Different PWM Strategies for a Three-Level H-Bridge Flying Capacitor Converter**

*Alex Ruderman, Elmo Motion Control Ltd, Israel*

*Boris Reznikov, General Satellite Corporation, Russia*

RD-006629

### **Monitoring System and Intelligent Control System Used in the Starting Process of a LDH1250HP Locomotive**

*Marius Catalin Carp, Ana Maria Puscas, Csaba Zoltan Kertesz, Mihai Romanca, Paul Nicolae Borza,*

*“Transilvania” University of Brasov, Romania*

RD-000795

### **Design and Analysis of a Coreless Flyback Converter with a Planar Printed-Circuit-Board Transformer**

*Abdoulkarim Bouabana, Constantinos Sourkounis, Ruhr University Bochum, Germany*

RD-003085

### **Simulation of Three – Phase Voltage Source Pulse Width Modulated (PWM) LCL Filtered Rectifier Based on Input – Output Linearization Nonlinear Control**

*Erdal Şehirli, Meral Altınay, Kastamonu University, Turkey*

RD-006211

### **Synchronous Current Double Rectifier with Saturable Inductors for Asymmetric Half-Bridge DC/DC Converter**

*Petre Scortaru, Lucian Iulian, “Transilvania” University of Brasov, Romania*

RD-002534

### **A Simple Two-Quadrant DC Motor Controller**

*Felix A. Himmelstoss, Yvonne Flicker, Markus Rabl,*

*“Technikum Wien” Vienna University of Applied Sciences, Austria*

## PEPC2 – Oral Session – Power Electronics and Power Converters

Friday, May 21, 11:00-13:00, Room 1

Session Chairs: *Felix A. Himmelstoss, Petre Scortaru*

RD-005436

### **Machine Emulator: Power-Electronics Based Test Equipment for Testing High-Power Drive Converters**

*Martin Oettmeier, Roman Bartelt, Carsten Heising, Volker Staudt, Andreas Steimel, Stephan Tietmeier, Burkhard Bock, Christoph Doerlemann*, Ruhr University Bochum, Germany

RD-003824

### **Interleaved 3 Phase DC/DC Converter for Automotive Applications**

*Octavian Cornea, Nicolae Muntean, Mihaela Gavris*

University “Politehnica” of Timisoara, Romania

RD-005118

### **Nonlinear Modeling of Power Factor Correction Converter**

*Marcelle Merhy, Cristina Morel, Chauveau Eric, Mohamed Machmoum,*

Group ESEO, Graduate School of Engineering, Angers, France

RD-001813

### **Particle Swarm Optimization for Optimal Powertrain Component Sizing and Design of Fuel Cell Hybrid Electric Vehicle**

*Omar Hegazy, Joeri Van Mierlo*, Free University of Brussels, Belgium

RD-002836

### **Dual Loop Digital Control Design and Implementation of A DSP Based High Power Boost Converter in Fuel Cell Electric Vehicle**

*Omar Ellabban, Omar Hegazy, Joeri Van Mierlo, Philippe Lataire*, Free University of Brussels, Belgium

RD-003077

### **PWM Power Converter Voltage Quality Bounds and Their Applicability to non-PWM Control Schemes**

*Alex Ruderman*, Elmo Motion Control Ltd, Israel

*Boris Reznikov*, General Satellite Corporation, Russia

RD-001562

### **Loss Balancing for Active-NPC and Active-SNPC Multilevel Converters in a STATCOM Application**

*Dan Floricau, Elena Floricau, Lucian Parvulescu, Guillaume Gateau*

University “Politehnica” of Bucharest, Romania

RD-006998

### **Improved Strategy for an Instantaneous Super-Resonant Converter Regulation**

*Stanimir Valtchev*, Universidade Nova de Lisboa, FCT, UNINOVA, Portugal

*Svilen Valtchev*, Technical University of Lisbon, CEMAT, Portugal

## **PEPC3 – Poster Session – Power Electronics and Power Converters**

Thursday, May 20, 14:30-15:30, Lobby

Session Chairs: *Stanimir Valtchev, Dorin Popovici, Alex Ruderman, Nicolae Muntean*

RD-004316

### **Electric and Electronic Equipment of a Research-Oriented Electrostatic Separator**

*Tiberiu Butunoi, Gabriel Gagiu, Mihai Bilici, Adrian Samuila, Vasile Neamtu, Roman Morar,*

Technical University of Cluj-Napoca, Romania

*Lucian Dascalescu,* University of Poitiers, France

*Alexandru Iuga,* Technical University of Cluj-Napoca, Romania

RD-000647

### **Three-level ASNPC Converter Implemented With an Analogical Command**

*Lucian Parvulescu, Dan Florica, Mircea Covrig, Ioan Parvulescu,*

University “Politehnica” of Bucharest, Romania

RD-003972

### **A New Current Control Using a Double Hysteresis Method for a New 3-Level Inverter**

*Kambiz Arab Tehrani, Francois-Michel Sargos, Igance Rasoanarivo, Mohammadreza Rafiei*

National Polytechnic Institute of Lorraine, INPL, Nancy, France

RD-006793

### **Experimental Stand for Research the Alternators Directions of Further Development**

*Emilian Ceuca, Serban Lungu, Adrian Tulbure, Gheorghe Brezeanu,*

“1 Decembrie 1918” University of Alba Iulia, Romania

## IACM1 - Oral Session – Industrial Automation and Control, Mechatronics

Thursday May 20, 15:30-18:00, Room 3

Session Chairs: *Ralph Kennel, Gheorghe Daniel Andreescu*

RD-003654

### **A Low Voltage Sensorless Switched Reluctance Motor Drive Using Flux Linkage Method**

*Thomaq Koblara*, Polytechnical University of Tirana, Albania

*Ciprian Sorandaru, Sorin Musuroi, Svoboda Marcus*,

University “Politehnica” of Timisoara, Romania

RD-000388

### **Capacitive Sensors for Position Acquisition of Linear Drives with Passive Vehicles**

*Marius Mihalachi, Peter Mutschler*, Darmstadt, University of Technology, Germany

RD-000396

### **Improving and Measuring the Efficiency of the Speed Sensorless Vector Controlled Induction Motor**

*Emad Hussein, Peter Mutschler*, Darmstadt, University of Technology, Germany

RD-003042

### **Position Sensorless Control of a Linear Interior Permanent Magnet Oscillatory Machine, With Experiments**

*Sorin-Cristian Agarliță, Ion Boldea*, University Politehnica of Timisoara, Romania

*Fabrizio Marignetti*, University of Cassino, Italy

*Lucian-Nicolae Tutelea*, University Politehnica of Timisoara, Romania

RD-000566

### **Design, Control and Monitoring of a Synchronous Linear Motor Servo Drive System based on Distributed Controllers**

*Sorin Silaghiu, Peter Mutschler*, Darmstadt University of Technology, Germany

RD-005673

### **Optimum Current Command Algorithm for Wide Speed Range and Four Quadrant Operation of PMSMS Drive without Regenerative Unit**

*Valeriu-Nicola Olarescu*, DiehlAKO, Wangen, Germany

*Sorin Musuroi, Ciprian Sorandaru*, University “Politehnica” of Timisoara, Romania

*Martin Weinmann, Stefan Zeh*, DiehlAKO, Wangen, Germany

RD-002976

### **Cascade based Control of a Drivetrain with Backlash**

*Constantin-Florin Caruntu, Andreea-Elena Balau, Corneliu Lazar*,

"Gh. Asachi" Technical University of Iasi, Romania

RD-003964

### **Active Dynamic Damping of Torsional Vibrations by $H_\infty$ -Control**

*Constantinos Sourkounis*, Ruhr-University Bochum, Germany

RD-000639

### **Noncoherent Demodulation of CPM Signals using Extended Kalman Filtering**

*Janos Gal, Andrei Campeanu, Ioan Nafornita*, University "Politehnica" of Timisoara, Romania

## IACM2 - Oral Session – Industrial Automation and Control, Mechatronics

Friday May 21, 14:30-17:00, Room 3

Session Chairs: *Constantinos Sourkounis, Sergey Ryvkin*

RD-000108

### **Development of Hardware Redundant Embryonic Structure for High Reliability Control Applications**

*Csaba Szasz, Virgil Chindris*, Technical University of Cluj-Napoca, Romania

RD-001589

### **On the Development of an Experimental Car-Like Mobile Robot**

*Robert Gall*, Hochschule Heilbronn, Germany

RD-003336

### **Mechanical-Electrical Optoisolator Transducers**

*Ioan-Marcel Ciurus, Mihai Dimian, Adrian Graur*,

"Stefan cel Mare" University of Suceava, Romania

RD-006653

### **Intelligent Active Vision System for Autonomous Robots**

*Florin Moldoveanu, Cristian Boldisor, Dan Floroian, Caius Suliman, Constantin Suci*, "Transilvania"

University of Brasov, Romania

RD-003328

### **Dynamic Load Change Stress Minimizing Control of Elastically Coupled Multi-Mass Systems**

*Matthias Joost, Christian Mehler, Bernd Orlik*, University of Bremen, Germany

RD-003026

### **Design, Implementation and Monitoring of a Screw Order Handling Process Using Business Process Management Tools**

*Alina Girbea, Francisc Sisak, Liviu Perniu*, "Transilvania" University of Brasov, Romania

RD-002984

### **Effective Optimization of Controllers Stabilizing Closed Circuit Grinding Systems of Cement**

*Dimitris Tsamatsoulis*, Halyps Building Materials S.A., Italcementi Group, Aspropyrgos, Greece

*Carmen Mihaela Lungoci*, "Transilvania" University of Brasov, Romania

RD-001937

### **Optimal FPGA implementation of GARBF systems**

*Iulian Vizitiu, Iulian Rincu, Adrian Radu, Ioan Nicolaescu, Florin Popescu*,

Military Technical Academy, Bucharest, Romania

RD-006017

### **Buffering Application for an Industrial Monitoring Software System**

*Costin-Marius Grigorescu, Sorin-Aurel Moraru*, "Transilvania" University of Brasov, Romania

*Florian Neukart*, Graz University of Applied Sciences, Austria

*Milian Badea*, "Transilvania" University of Brasov, Romania

RD-004049

### **Data Acquisition, Storage and Online Retrieval of Chromatography from Automated HPLC for Pharmaceutical Research Applications**

*Mohammad Shukri Hapeez, Ahmad Ihsan Mohd Yassin, Habibah Hashim, Mustafar Kamal Hamzah*,

"Mara" University of Technology, Malaysia

## IACM3 - Poster Session – Industrial Automation and Control, Mechatronics

Thursday, May 20, 2010, 14:30-15:30, Lobby

Session Chairs: *Dorina Isar, Sergey Ryvkin, Florin Moldoveanu, Csaba Szasz*

RD-003263

### **Optimal FPGA Implementation of GAMLN Systems**

*Iulian Vizitiu, Iulian Rincu, Florin Popescu, Military Technical Academy, Bucharest, Romania*

RD-002844

### **Visual Control Architecture of Serving Systems Based on Image Moments**

*Cosmin Copot, Adrian Burlacu, Corneliu Lazar,*

“Gheorghe Asachi” Technical University of Iasi, Romania

RD-005541

### **The Synchronous Control of Nodes and the Message Time Delays Estimation for a CAN Network**

*Dan Puiu, Florin Moldoveanu, “Transilvania” University of Brasov, Romania*

*Sergey Ryvkin,*

Trapeznikov Institute of Control Sciences of the Russian Academy of Sciences, Moscow, Russia

RD-004081

### **Modeling a Knowledge Base for Generating New Trajectories for a Robot Arm Located in a Cell of a Flexible Fabrication Line**

*Gabriela Andreea Calangiu, Istvan Sarkany, Mihai Stoica, Francisc Sisak,*

“Transilvania” University of Brasov, Romania

RD-005495

### **Surveillance Multiagent System using Robot Vision based on Fuzzy Controller**

*Dan Floroian, Florin Moldoveanu, “Transilvania” University of Brasov, Romania*

*Sergey Ryvkin,*

Trapeznikov Institute of Control Sciences of the Russian Academy of Sciences, Moscow, Russia

*Constantin Suci, “Transilvania” University of Brasov, Romania*

RD-002402

### **WLAN Roaming Simulator**

*Ioana Cobeanu, Ioan Margineanu, “Transilvania” University of Brasov, Romania*

*Catrinel Catrinescu, Embedded Wireless Ulm, Germany*

*Lucian Mihai Itu, “Transilvania” University of Brasov, Romania*

RD-002453

### **A Method Proposed for Training An Artificial Neural Network used for Industrial Robot Programming by Demonstration**

*Mihai Stoica, Gabriela Andreea Calangiu, Francisc Sisak, Istvan Sarkany*

“Transilvania” University of Brasov, Romania

RD-001481

### **A Comparative Analysis of two Self-Learning Based Strategies for Fuzzy Controller Design**

*Cristian Boldisor, Vasile Comnac, Iulian Topa; Simona Coman, “Transilvania” University of Brasov, Romania*

RD-005002

### **A Fuzzy Approach Regarding the Analysis of Wine Production Depending on Different Environmental Parameters Based on Statistical Signal Processing**

*Alexandru-Mihnea Spiridonica, “Gheorghe Asachi” Technical University of Iasi, Romania*

*Iulian Stoleriu, “Alexandru Ioan Cuza” University of Iasi, Romania*

*Romeo Cristian Ciobanu, “Gheorghe Asachi” Technical University of Iasi, Romania*

RD-000558

**Extended RRT Algorithm with Dynamic N-Dimensional Cuboid Domains**

*Christos Fragkopoulos, Axel Gräser, University of Bremen, Germany*

RD-006505

**Fractional Order Control for DC Electrical Drives in Networked Control Systems**

*Simona Coman, Vasile Comnac, Cristian Boldisor, “Transilvania” University of Brasov, Romania*

*Dan Dumitrache, Technical University of Cluj-Napoca, Romania*

RD-006319

**Boiler-Turbine Simulator with Real-Time Capability for Dispatcher Training Using LabView**

*Mihai Iacob, Gheorghe-Daniel Andreescu, Nicolae Muntean,*

*University “Politehnica” of Timisoara, Romania*

## **AESI1 - Oral Session – Applied Electronics and System Integration**

Friday May 21, 11:00-13:00, Room 2  
Session Chair: *Alain Fabre, Iuliu Szekely*

RD-007161

### **A Composable, Energy-Managed, Real-TimeMPSOC Platform**

*Kees Goossens*, Eindhoven University of Technology, Netherlands  
*Anca Molnos, Jude Angelo Ambrose, Andrew Nelson, Radu Stefan, Sorin Cotofana*,  
Delft University of Technology, Netherlands

RD-001147

### **Model Driven Developed Machine Vision System for Service Robotics**

*Sorin M. Grigorescu, Oliver Prenzel, Axel Gräser*, University of Bremen, Germany

RD-002186

### **Artificial Olfaction System with Hardware On-Chip Learning Neural Networks**

*Alin Tisan*, “North” University of Baia Mare, Romania  
*Marcian Cirstea*, “Anglia Ruskin” University, Cambridge, UK  
*Stefan Oniga, Attila Buchman*, “North” University of Baia Mare, Romania

RD-001058

### **Electrocardiogram Baseline Wander Removal Using Stationary Wavelet Approximations**

*Beatrice Arvinti, Dumitru Toader, Marius Costache, Alexandru Isar*,  
University “Politehnica” of Timisoara, Romania

RD-000175

### **Focusing Control under Microscopic Views based on Regional Monotones of Image Focal Values**

*Ku Chin Lin*, Kun Shan University, Taiwan

RD-006173

### **Data Acquisition and Virtual Instrumentation System for the Study of Peltier and Seebeck Effects**

*Florin Sandu, Venetia Sandu, Stefan Nan, Adrian Iulian Dumitru*,  
“Transilvania” University of Brasov, Romania

RD-002275

### **Self-tuning Curing Oven Control**

*Ruaan Schoeman, Hannes van Rensburg, Dan Nicolae*,  
Vaal University of Technology, South Africa

RD-000809

### **Calibration of Rogowski Coil used in Power Electronics and Energy Systems**

*Andrei Marinescu*, ICMET Research Institute, Craiova, Romania

## **AESI2 - Oral Session – Applied Electronics and System Integration**

Friday May 21, 14:30-17:00, Room 2

Session Chair: *Hannes van Rensburg, Alexandru Isar*

RD-003034

### **Hardware Implementation of a Real-Time 3D Video Acquisition System**

*Istvan Andorko, Petronel Bigioi, Peter Corcoran*, National University of Ireland, Galway, Ireland

RD-001929

### **Real Network Traffic Anomaly Detection Based on Analytical Discrete Wavelet Transform**

*Marius Salagean*, University “Politehnica” of Timisoara, Romania

RD-000124

### **Comparison of Wavelet Families with Application to WiMAX Traffic Forecasting**

*Cristina Stolojescu*, University “Politehnica” of Timisoara, Romania,

*Ion Railean, Sorin Moga*, Telecom Bretagne, Brest, France

*Alexandru Isar*, University “Politehnica” of Timisoara, Romania

RD-005312

### **Genetic Algorithms for PAPR Reduction in Multi-Carrier Modulations**

*Marco Lixia, Maurizio Murrioni*, University of Cagliari, Sardinia, Italy

*Vlad Popescu*, “Transilvania” University of Brasov, Romania

RD-005681

### **Model of Supercapacitor-Starter Assembly Used for Internal Combustion Engines Starting**

*Aurel Cornel Stanca*, “Remus Radulet” Technical College, Brasov, Romania

*Paul Nicolae Borza, Mihai Romanca, Roxana Paun, Sorin Zamfir*,

“Transilvania” University of Brasov, Romania

RD-002062

### **Single-Stage Travelling Wave Amplifier for Power Applications**

*Metin Yazgi, Mustafa Sayginer, Bal S. Virdee, Ali Toker, Hakan Kuntman*,

Istanbul Technical University, Turkey,

RD-005126

### **Comparing the Performance of Duo-Binary Turbo Codes on Rayleigh Channel**

*Maria Kovaci, Horia Balta*, University “Politehnica” of Timisoara, Romania

RD-005088

### **CAD of MIMO Systems by Reduced Order Modeling**

*Lucia Dumitriu, Mihai Iordache, Lucian Mandache*,

University “Politehnica” of Bucharest, Romania

RD-000736

### **GALS-SA: Synchronous-Asynchronous Configurable Platform**

*Razvan Jipa, Traian Tulbure*, “Transilvania” University of Brasov, Romania

RD-003069

### **A New Wideband Fully-Differential LNA with Matched Input and Output Impedances**

*Yahya Lakys, Balwant Godara, Alain Fabre*, Polytechnic Institute of Bordeaux, France

## **AESI3 - Poster Session - Applied Electronics and System Integration**

Thursday May 20, 14:30-15:30, Lobby

Session Chair: *Sorin Cotofana, Paul Nicolae Borza, Mihai Romanca, Razvan Jipa*

RD-000191

### **Reducing Noise in Embedded Systems by Clock Signal Spectrum Spreading**

*Petre Lucian Ogrutan, Csaba-Zoltán Kertész, Gheorghe Pană,*

“Transilvania” University of Brasov, Romania

RD-002127

### **Intelligent Image Data Processing for Acquiring Target in a Multisensor Platform**

*Octavian Grigore-Müller, Mihai Barbelian, Janel Arhip, Emil-Mihai Jurba,*

University “Politehnica” of Bucharest, Romania,

RD-001155

### **Improved Contours for ToF Cameras based on Vicinity Logic Operations**

*Gabriel Danciu, Mihai Ivanovici,* “Transilvania” University of Brasov, Romania

*Vasile Buzuloiu,* University "Politehnica" of Bucharest, Romania

RD-006076

### **Aspects on the Stability of a Gyroscopic Angle Measurement System**

*Carmen Gerigan, Petre Lucian Ogrutan, Laszlo Nagy,*

“Transilvania” University of Brasov, Romania,

RD-006122

### **Test Bench Components Verification Using Fault Injection Techniques**

*Nicolae Alexandru Banciu,* Siemens Program and System Engineering, Brasov, Romania

*Gheorghe Toacse,* “Transilvania” University of Brasov, Romania,

RD-006165

### **Adaptive Hardware-Software Co-Design Platform for Fast Prototyping of Embedded Systems**

*Stefan Oniga, Alin Tisan, Claudiu Lung, Ioan Orha, Attila Buchman,*

“North” University of Baia Mare, Romania,

RD-003778

### **Optimization of Sigma-Delta Modulator Based on Artificial Immune Algorithms**

*Vasile Gabriel Iana, Gheorghe Serban, Laurentiu Ionescu, Petre Anghelescu,*

University of Pitesti, Romania

RD-006424

### **Measurement System for Non-Destructive Testing using Ultrasonic Tomography Spectral Attenuation**

*Giovanna Concu,* University of Cagliari, Sardinia, Italy

*Vlad Popescu,* “Transilvania” University of Brasov, Romania

*Barbara DeNicolò, Carlo Piga,* University of Cagliari, Sardinia, Italy

RD-006777

### **A Design Approach to Charge Injection Modeling**

*Laszlo Szilagyi, Andrei Danchiv,* Infineon Technologies Romania, Bucharest, Romania

*Mircea Bodea,* University “Politehnica” of Bucharest, Romania.

RD-001082

### **A Generalized Approach to Complex Filter Design with Open Loop Active Cells**

*Gabor Csipkes, Doris Csipkes,* Technical University of Cluj-Napoca, Romania,

*Hernando Fernandez-Canque,* Caledonian University Glasgow, UK

*Sorin Hinteá,* Technical University of Cluj-Napoca, Romania,

RD-003131

**Voice Quality Degradation Recognition Using the Call Lengths**

Zoltan Gaspar, Izabella Gocza, “Transilvania” University of Brasov, Romania,

RD-004464

**Middleware for Wireless Sensor Networks based on Service Delivery Framework**

Virgil Cazacu, BitDefender, Romania

Laura Cobarzan, Siemens PSE, Romania

Iuliu Szekely, “Sapientia” University of Targu Mures, Romania

Vasile Dadarlat, Technical University of Cluj-Napoca, Romania

Florin Sandu, “Transilvania” University, Brasov, Romania

RD-004863

**Ethernet Communication for Detection of Emergency Locations and Dynamic Evacuation in Underground Infrastructures,**

Christoph Müller, MineTronics GmbH, Hamburg, Germany

Iuliu Szekely, “Sapientia” University of Targu Mures, Romania

Andreas Noack, MineTronics GmbH, Hamburg, Germany

RC-000132

**The Quality of Multiple VoIP Calls in an Encrypted Wireless Network**

Mihai Ivanovici, Stefan Savu, “Transilvania” University of Brasov, Romania

## **EEEEET - Oral Session - Electrical Engineering Education and Emerging Technologies**

Friday May 21, 11:00-13:00, Room 3  
Session Chairs: *Mihaela Morega, Horst Puta*

RD-003751

**Methods for Increasing the Access to Information Databases Using Open Source Tools**  
*Catalin Maican*, "Transilvania" University of Brasov, Romania

RD-003867

**Embedded Systems Platform-Based Design from Teaching to Industry or Vice-versa**  
*Nicutor Birsan, Cornel Hedeshiu* Military Technical Academy, Romania

RD-004375

**E-learning Perception in a European Network – A Case Study**  
*Elena Cocorada, Gheorghe Scutaru, Mariela Pavalache-Ilie*,  
"Transilvania" University of Brasov, Romania

RD-005096

**A Virtual Reality Based Human-Network Interaction System for 3D Internet Applications**  
*Vlad Cristian Stoianovici, Doru Talaba, Adrian Valentin Nedelcu, Mihai Machedon-Pisu,*  
*Florin Barbuceanu, Adrian Stavar*, "Transilvania" University of Brasov, Romania

RD-005444

**Instructional Design in the Vocational Training on "Computer Networking"**  
*Venetia Sandu, Adrian Valentin Nedelcu, Sorin Alexandru Cocorada, Sebastian Liviu Dinu*,  
"Transilvania" University of Brasov, Romania

RD-006726

**High-Performance Magnetic Gears Topologies**  
*Ovidiu Sebastian Chirila, Dan Stoia, Mihai Cernat*, "Transilvania" University of Brasov, Romania  
*Kay Hameyer*, RWTH Aachen University, Germany

## RECC1 - Oral Session - Renewable Energy Conversion and Control

Thursday May 20, 11:15-13:15, Room 4

Chairs: *Remus Teodorescu, Corneliu Marinescu*

RD-001694

### **Variable Step Size P&O MPPT Algorithm for PV Systems**

*Ahmad Al-Diab, Constantinos Sourkounis*, Ruhr-University, Bochum, Germany

RD-001635

### **An FPGA Controller for a Combined Solar / Wind Power System**

*Marcian Cirstea, Alberto Parera-Ruiz*, Anglia Ruskin University, Cambridge, UK

RD-001732

### **New Low Cost Structure for Dual Axis Mount Solar Tracking System Using Adaptive Solar Sensor**

*Alin Argeseanu*, University "Politehnica" of Timisoara, Romania

*Ewen Ritchie, Krisztina Monika Leban*, Aalborg University, Denmark

RD-003417

### **Current-Voltage Characteristic Raising Techniques for Solar Cells. Comparisons and Applications**

*Daniel Tudor Cofas, Petrica Adrian Cofas, Doru Ursutiu, Cornel Samoila*,

"Transilvania" University of Brasov, Romania

RD-003883

### **Power Injection System for Photovoltaic Plants based on a Multiconverter Topology with DC-Link Capacitor Voltage Balancing**

*Victor Miñambres Marcos, Enrique Romero-Cadaval, María Isabel Milanés Montero, Miguel Ángel Guerrero Martínez, Fermín Barrero González, Pedro González Castrillo*

University of Extremadura, Badajoz, Spain

RD-004766

### **Single-Phase Grid-Connected Distributed Generation System with Maximum Power Tracking**

*Justin Radu Bojoi, Daniel Roiu, Giovanni Griva, Alberto Tenconi*,

Politecnico di Torino, Italy

RD-006041

### **Electrical Response of an Optimized Oriented Photovoltaic System**

*Bogdan Gabriel Burduhos, Dorin Valentin Diaconescu, Ion Visa, Anca Duta*,

"Transilvania" University of Brasov, Romania

RD-003832

### **Photovoltaic Efficiency of a Grid Connected 10 kWp System Implemented in the Brasov Area**

*Alexandru Enesca, Mihai Comsit, Ion Visa, Anca Duta*,

"Transilvania" University of Brasov, Romania

## RECC2 - Oral Session - Renewable Energy Conversion and Control

Thursday May 20, 15: 30-18:00, Room 4

Chairs: *Marcian Cirstea, Corneliu Marinescu*

### **From Industry: VESTAS' review of windpower conversion and integration**

*Jorge Martinez Garcia, Florin Lungeanu,*

Power System Analysis Global Research Department, Vestas Wind Systems R&D, Aarhus, Denmark

RD-005878

### **Overview of Recent Grid Codes for Wind Power Integration**

*Mufit Altin, Omer Goksu, Remus Teodorescu,* Aalborg University, Denmark

*Pedro Rodriguez,* Technical University of Catalonia, Barcelona, Spain

*Birgitte Bak-Jensen, Lars Helle,* Aalborg University, Denmark

RD-000469

### **Methods for Cogging Torque Reduction of Directly Driven PM Wind Generators**

*Tiberiu Tudorache, Leonard Melcescu,* University "Politehnica" of Bucharest, Romania

*Mihail Popescu,* Research Institute for Electrical Machines, Bucharest, Romania

RD-003727

### **A New Conversion and Control System for a Small Off-Grid Wind Turbine**

*Nicolae Muntean, Octavian Cornea, Diana Petrila,* University "Politehnica" of Timisoara, Romania

RD-006262

### **Power Losses Analysis of Two-Level and Three-Level Neutral Clamped Inverters for a Wind Pump Storage System**

*Luminita Clotea, Andreea Forcos, Corneliu Marinescu, Marius Georgescu,*

"Transilvania" University of Brasov, Romania

RD-002348

### **Storage Analysis for Stand-Alone Wind Energy Applications**

*Luminita Barote, Corneliu Marinescu,* "Transilvania" University of Brasov, Romania

RD-005533

### **A Look at the Role and Main Topologies of Battery Energy Storage Systems for Integration in Autonomous Microgrids**

*Ioan Serban, Corneliu Marinescu,* "Transilvania" University of Brasov, Romania

RD-005738

### **Smart Electrical Energy Storage System for Small Power Wind Turbines**

*Marius Georgescu, Luminita Barote, Corneliu Marinescu, Luminita Clotea,*

"Transilvania" University of Brasov, Romania

RD-005975

### **Study of a Grid-Connected Hybrid Wind/Micro-Hydro Power System Associated with a Supercapacitor Energy Storage Device**

*Stefan Breban,* Technical University of Cluj-Napoca, Romania

*Benoit Robyns,* Haute Etudes d'Ingénieur, Lille, France

*Mircea M. Radulescu,* Technical University of Cluj-Napoca, Romania

RD-005509

### **Control of Parallel Operating Micro Hydro Power Plants**

*Catalin Petrea Ion, Corneliu Marinescu,* "Transilvania" University of Brasov, Romania

## **RECC2 - Poster Session - Renewable Energy Conversion and Control**

Thursday May 20, 14:30-15:30, Lobby

Chair: *Enrique-Romero-Cadaval, Tiberiu Tudorache*

RD-002623

### **Low-cost, High Flexibility I-V Curve Tracer for Photovoltaic Modules**

*Julen Joseba Maestro Ibirriaga, Xabier Miquelez de Mendiluce Pena, Adrian Opritescu, Dezso Sera, Remus Teodorescu, Aalborg University, Denmark*

RD-006068

### **Dynamic Model of a Small Hydropower Plant**

*Radu Gabriel Saulescu, Ion Visa, Dorin Diaconescu, Codruta Jaliu, Mircea Neagoe, Oliver Climescu*  
"Transilvania" University of Brasov, Romania

RD-000272

### **Optimal Selection of Wind Turbine for a Specific Area**

*Ciprian Nemes, Florin Munteanu, "Gheorghe Asachi" Technical University Iasi, Romania*

RD-005258

### **Monitoring of a Ground Source Heat Pump with Horizontal Collectors**

*Adrian Virgil Craciun, Florin Sandu, Gheorghe Pana, "Transilvania" University of Brasov, Romania*

## **SGCO1 - Oral Session – Smart Grids – Challenges and Opportunities**

Friday May 21, 2010, 14:30-17:00, Room 4  
Session Chairs: *Elena Helerea, Mihai Gavrilas*

RD-006475

**Challenges for Smart Distribution Systems: Data Representation and Optimization Objectives**  
*Gianfranco Chicco*, Politecnico di Torino, Italy

RD-005517

**From Microgrids to Smart Grids: Modeling and Simulating using Graphs. Part I: Active Power Flow**  
*Corneliu Marinescu, Adrian Deaconu, Eleonor Ciurea, Daniela Marinescu*  
“Transilvania” University Brasov, Romania

RD-005525

**From Microgrids to Smart Grids: Modeling and Simulating using Graphs. Part II: Optimization of Reactive Power Flow**  
*Corneliu Marinescu, Adrian Deaconu, Eleonor Ciurea, Daniela Marinescu*  
“Transilvania” University Brasov, Romania

RD-006467

**A Study on Wind Energy Generation Forecasting Using Connectionist Models**  
*Iulia Coroama, Mihai Gavrilas*, "Gheorghe Asachi" Technical University of Iasi, Romania

RD-002143

**Intelligent Distributed State Estimation Using REI System Equivalents and Phasor Measurements**  
*Ovidiu Ivanov, Mihai Gavrilas*, "Gheorghe Asachi" Technical University of Iasi, Romania

RD-005568

**Load Frequency Control Using Multi-Agent Consensus**  
*Cristinel Costea*, North University Baia Mare, Romania

RD-006742

**Load Curve Analysis for an Industrial Consumer**  
*Catalin Nicolae Mihai*, SC FDEE Electrica Distributie Transilvania Sud, Romania  
*Ionel Lepadat, Elena Helerea, Daniel Calin*, “Transilvania” University of Brasov, Romania

RD-000779

**Evaluation of the Performances of Efficient Transformers in Distribution Networks by Fuzzy Techniques**  
*Gheorghe Grigoras, Gheorghe Cartina*, "Gheorghe Asachi" Technical University of Iasi, Romania  
*Elena-Crenguta Bobric*, “Stefan cel Mare” University of Suceava, Romania  
*Florina Rotaru*, "Gheorghe Asachi" Technical University of Iasi, Romania

RD-006297

**Selective Detection of Simple Grounding for Medium Voltage Electrical Networks with Compensated Null**  
*Dumitru Toader*, University "Politehnica" of Timisoara, Romania  
*Petru Ruset*, Siemens SRL, București, Romania  
*Stefan Haragus, Constantin Blaj*, University "Politehnica" of Timisoara, Romania  
*Ioan Hategan, Ioan Diaconu, Iulia Cata*, SN Transelectrica SA, Romania

## **SGCO3 - Poster Session – Smart Grids – Challenges and Opportunities**

Thursday May 20, 14:30-15:30, Lobby

Session Chairs: *Elena Helerea, Mihai Gavrilas*

RD-005703

### **Determination of Typical Load Profiles in Hydro-Power Plant by Clustering Techniques**

*Daniela Comanescu*, Hidroelectrica, Subsidiary “Bistrita” - Piatra Neamt, Romania

*Gheorghe Grigoras, Gheorghe Cartina, Florina Rotaru,*

"Gheorghe Asachi" Technical University of Iasi, Romania

### **From Industry: Distribution Automation System in the Context of Recent Developments**

*Ioan Rosca, Ion Dobre, Bogdan Vaida*, SC FDEE Electrica Distributie Transilvania Sud, Romania

### **From Industry: Smart Grids - A Challenge for Distribution System Operators**

*Ioan Rosca*, SC FDEE Electrica Distributie Transilvania Sud, Romania

## CPDA –Oral Session - Cold-Plasma Discharges and Applications

Friday May 21, 2010, 11:00-13:00, Room 4  
Session Chairs: *Jean Louis Brisset, Eugen Hnatiuc*

RD-003204

**Ozone Synthesis Under Surface Discharge Generated on the Alumina Concentric Actuator,**  
*Slawomir Jodzis*, Warsaw University of Technology, Poland

RD-000531

**Design of a Plasma Generator based on E Power Amplifier and Impedance,**  
*Dorin Petreus, Alin Grama, Sergiu Cadar, Emil Plaian, Adina Rusu*,  
Technical University of Cluj-Napoca, Romania

RD-004952

**Pulsed Dielectric Barrier Discharge Generated at the Gas-Liquid Interface for the Degradation of the Organic Dye Methyl Red in Aqueous Solution,**  
*Daniela Piroi, Monica Măgureanu, Nicolae Bogdan Mandache, Victor David, Vasile Pârvulescu*,  
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354	Mihai Ivanovici	22(RD-001155), 23(RC-000132)
355	Mihai Machedon - Pisu	24(RD-005096)
356	Mihai Octavian Popescu	8(RD-003239), 11(RD-004634)
357	Mihai Romanca	13(RD-006629), 21(RD-005681), 22(Chair)
	Mihai Scutaru	6(RD-005045)
358	Mihai Stoica	18(RD-004081), 18(RD-002453)
359	Mihail Popescu	10(RD-005665), 26(RD-000469)
360	Mihail V. Cistelecan	11(Chair)
361	Milian Badea	17(RD-006017)
362	Mircea Covrig	15(RD-000647)
363	Mircea Bodea	22(RD-006777)
364	Mircea Dobriceanu	13(RD-004448)
365	Mircea M. Radulescu	11(Chair), 26(RD-005975)
366	Mircea Modreanu	10(RD-004626)
367	Mircea Neagoe	27(RD-006068)
368	Mircea Ruba	11(RD-0001228)
369	Mohamed Machmoum	14(RD-005118)
	Mohammad Hossein Sadeghi	6(RD-003565)
	Mohammadreza Rafiei	15 (RD-003972)
370	Mohammad Shukri Hapeez	17(RD-004049)
	Mohsen Owlady	6(RD-003565)
371	Monica Măgureanu	30(RD-004952)
372	Monica-Adela Enache	7(RD-000515)
373	Mufit Altin	26(RD-005878)
374	Murielle Naitali	30(RD-005185, RD-005193)
375	Mustafa Saygimer	21(RD-002062)
376	Mustafar Kamal Hamzah	17(RD-004049)

379	Nicolae Alexandru Banciu	22(RD-006122)
380	Nicolae Bogdan Mandache	30(RD-004952)
381	Nicolae Muntean	14(RD 003824), 15(Chair), 19(RD-006319) 26(RD-003727)
382	Nicusor Birsan	24(RD-003867)
383	Nikolaos Margaritis	10(RD-006661)
384	Norbert Stein	4(RD-004561)
385	Octavian Cornea	12(RD-006572), 14(RD-003824), 26(RD-003727)
386	Octavian Grigore-Müller	7(RD-001031), 22(RD-002127)
387	Olimpiu Stoicuta	11(RD-003506)
388	Oliver Climescu	27(RD-006068)
389	Oliver Magdun	9(RD-006718)
390	Oliver Prenzel	20(RD-001147)
391	Omar Ellabban	14(RD-002836)
392	Omar Hegazy	14(RD-001813), 14(RD-002836)
393	Omer Goksu	26(RD-005878)
394	Ovidiu Centea	5(RD-001546)
395	Ovidiu Craiu	10(RD-004626)
396	Ovidiu Ivanov	28(RD-002143)
397	Ovidiu Sebastian Chirila	24(RD-006726)
398	Paul Nicolae Borza	4(RD-006602), 13(RD-006629), 22(Chair), 21(RD-005681)
	Pedro Gonzales Castrillo	25(RD-003883)
399	Pedro Rodriguez	3(RD-000841), 26(RD-005878)
400	Peter Corcoran	21(RD-003034)
401	Peter Mutschler	16(RD-000388) , 16(RD-000396, 16(RD-000566)
402	Petre Anghelescu	22(RD-003778)
403	Petre Lucian Ogrutan	6(RD-005045), 22(RD-006076), 22(RD-000191)
404	Petre Scortaru	13(RD-006211), 14(Chair)
405	Petrica Adrian Cotfas	25(RD-003417)
406	Petronel Bigioi	21(RD-003034)
407	Petru Ruset	28(RD-006297)
408	Philip Carne Kjaer	3(RD-000841)
409	Philippe Lataire	14(RD-002836)
410	Pierluigi Siano	3(RD-002313)
411	Radu Burlică	30(RD-005177, RD-004103, RD-004111)
412	Radu Gabriel Saulescu	27(RD-006068)
413	Radu Stefan	20(RD-007161)
414	Ralf Neurohr	5(RD-006483)
415	Ralph Kennel	2(KA6), 16(Chair)
416	Razvan Ancuti	11(RD-002941)
417	Razvan Jipa	21(RD-000736), 22(Chair),
	Razvan Mihai Ionescu	7(RD-000787)
418	Remus Teodorescu	3(RD-000841), 25(Chair), 27(RD-002623), 26(RD-005878)

419	Robert Beloiu	8(RD-003239), 11(RD-004634)
420	Robert Gall	17(RD-001589)
421	Robert Istvan Lorincz	12(RD-006378)
422	Rolando Burgos	1(KA1)
423	Roman Bartelt	13(RD-005428), 14(RD-005436)
424	Roman Morar	15(RD-004316)
425	Romeo Cristian Ciobanu	5(RD-003441), 18(RD-005002)
426	Roxana Paun	21(RD-005681)
427	Ruaan Schoeman	20(RD-002275)
428	Rüdiger Appunn	8(RD-001538)
430	S. R. K. Kanaesalingam	5(RD-000477)
431	Sasa Mujovic	6(RD-006696)
432	Sebastian Azer	4(RD-004553)
433	Sebastian Liviu Dinu	24(RD-005444)
434	Sekyung Han	3(RD-002496)
435	Septimiu Motoasca	5(RD-002046)
436	Serban Lungu	15(RD-006793)
437	Sergey Ryvkin	17(Chair), 18(RD-005541), 18(RD-005495), 18(Chair)
438	Sergiu Cadar	30(RD-000531)
439	Silvia Cirstea	5(RD-005347)
440	Simona Coman	18(RD-001481), 19(RD-006505)
441	Slavoljub Aleksic	5(RD-002526)
442	Slawomir Jodzis	30(RD-003204)
443	Soo Hee Han	3(RD-002496)
444	Soohyeong Jang	3(RD-002496)
445	Sorin Alexandru Cocorada	24(RD-005444)
446	Sorin Cotofana	20(RD-007161), 22(Chair)
447	Sorin Enache	7(RD-000515)
448	Sorin Hintea	22(RD-001082)
449	Sorin Ioan Deaconu	6(RD-002798), 8(RD-003018)
450	Sorin M. Grigorescu	20(RD-001147)
451	Sorin Mihai	10(RD-005398)
452	Sorin Moga	21(RD-000124)
453	Sorin Musuroi	16(RD-003654), 16(RD-005673)
454	Sorin Silaghiu	16(RD-000566)
455	Sorin Zamfir	21(RD-005681)
456	Sorin-Aurel Moraru	17(RD-006017)
457	Sorin-Cristian Agarliță	8(RD-002968), 16(RD-003042)
458	Stanimir Valtchev	14(RD-006998), 15(Chair),
459	Stefan Breban	26(RD-005975)
460	Stefan Haragus	28(RD-006297)
461	Stefan Nan	20(RD-006173)
462	Stefan Oniga	20(RD-002186), 22(RD-006165)
463	Stefan Savu	23(RC-000132)
464	Stefan Zeh	16(RD-005673)
465	Stephan Tietmeyer	14(RD-005436)
466	Stephane Pellerin	30(RD-004111)

467	Svilen Valtchev	14(RD-006998)
468	Svoboda Marcus	16(RD-003654)
469	Teodor Pana	11(RD-003506)
470	Thomaq Koblara	16(RD-003654)
471	Thomas Herold	2(KA2)
472	Thomas Leibfried	3(RD-000906)
473	Thomas Mertens	4(RD-004553)
474	Tiberiu Butunoi	15(RD-004316)
475	Tiberiu Tudorache	10(RD-004626), 26(Chair), 26(RD-000469)
476	Timo Wenzel	3(RD-000906)
478	Toma Dordea	11(RD-004677)
479	Traian Tulbure	21(RD-000736)
480	Valentin Navrapescu	5(RD-000442)
481	Valerio Lattarulo	3(RD-002313)
482	Valeriu-Nicola Olarescu	16(RD-005673)
483	Vasile Buzuloiu	22(RD-001155)
484	Vasile Comnac	18(RD-001481), 19(RD-006505)
485	Vasile Coroban-Schramel	10(RD-003212), 11(RD-002933), 12(RD-006378)
486	Vasile Dadarlat	23(RD-004464)
487	Vasile Gabriel Iana	22(RD-003778)
488	Vasile Neamtu	15(RD-004316)
489	Vasile Pârvulescu	30(RD-004952)
490	Vasilios Ilioudis	10(RD-006661)
491	Venetia Sandu	20(RD-006173), 24(RD-005444)
492	Veronica Păltânea	3(RD-001198), 5(RD-001546)
493	Vesna Javor	4(RD-004499)
494	Victor David	30(RD-004952)
495	Víctor Miñambres Marcos	25(RD-003883)
496	Victor Proca	11(RD-004677)
497	Victor Stoica	4(RD-001163)
498	Victor Vaida	6(RD-002798)
499	Vigna Kumaran Ramachandaramurthy	5(RD-000477)
500	Vincenzo Galdi	3(RD-002313)
501	Viorel Trifa	10(RD-000183),
502	Virgil Cazacu	23(RD-004464)
503	Virgil Chindris	17(RD-000108)
504	Virgil Tiponut	12(RD-006378)
505	Virgiliu Fireteanu	4(Chair), 7(RD-000485)
506	Vito Calderaro	3(RD-002313)
507	Vlad Cristian Stoianovici	24(RD-005096)
508	Vlad Gradinaru	10(RD-001716)
509	Vlad Popescu	21(RD-005312), 22(RD-006424),
510	Vlad-Andrei Scarlatache	5(RD-003441)
511	Vladimir Katic	3(Chair), 6(RD-006696)

512	Volker Staudt	8(RD-005401), 10(RD-005657), 13(RD-005428), 14(RD-005436)
513	Vultchan Gueorgiev	4(RD-006912)
514	Xabier Miquelez de Mendiluce Pena	27(RD-002623)
515	Xiaoshu Zan	10(RD-000183)
516	Yahya Lakys	21(RD-003069)
517	Yves Fautrelle	7(RD-000485)
518	Yves Gemeinder	9(RD-006718)
519	Yvonne Flicker	13(RD-002534)
520	Zden Kucerovsky	3(RD-004057)
521	Zlata Cvetkovic	5(RD-002526)
522	Zoltan Gaspar	23(RD-003131)