

DETAILED PROGRAM

of the

EPE-PEMC 2012 ECCE Europe Conference and Exposition

Novi Sad, Serbia

3rd – 6th Sep. 2012



Master Centre – Grand Hall



CONFERENCE - 04 September 2012 (Tuesday)

Opening and EPE Awards Session

4 Sep. 2012, 08:20 – 09:30h,

Location: Grand Hall

EPE-PEMC 2012 ECCE Europe OPENING & EPE AWARD SESSION

Session Co-Chairs:

Vladimir Katic, General Chair of the EPE-PEMC 2012 ECCE Europe, Serbia

Dushan Boroyevich, Co-Chair of the EPE-PEMC 2012 ECCE Europe, USA

Prof. Istvan Nagy, PEMC Council Chair, Hungary

Jean-Luc Thomas, President of the EPE Association, Belgium

Opening ceremony will be warm welcome for all delegates and participants of the 15th Power Electronics and Motion Control Conference and Exhibition EPE-PEMC 2012 ECCE Europe. Short musical program and welcome speeches from representatives of organizers, sponsors, patrons and industry support companies will be presented.

OUTSTANDING YOUNG EPE MEMBER AWARD for the best young author contribution of the EPE-ECCE Europe 2011 conference will be handed to:

Jens DUE,

for his paper entitled “Lifetime investigation of high power IGBT modules” presented last September in Birmingham during EPE-ECCE Europe 2011,

and

Maialen BOYRA,

for her paper entitled “A review on synchronization methods for grid-connected three-phase voltage-source converters under unbalanced and distorted grid condition” presented last September in Birmingham during EPE-ECCE Europe 2011.

The Outstanding Young EPE Member Award will be handed over by:

Marcel Jufer, President of the Award Committee

Jean-Luc Thomas, President of the EPE Association

Pat Wheeler, Chairman of the EPE ECCE Europe 2011 Conference

Key-note Sessions

4 Sep. 2012, 09:30 – 10:10h,

Location: Grand Hall

KEY-NOTE SESSION 1

Session Co-Chairs:

Vladimir Katic, University of Novi Sad, Faculty of Technical Science, Novi Sad, Serbia

Dushan Boroyevich, VirginiaTech, Blacksburg, USA

POWER ELECTRONICS QUO VADIS?

Professor emeritus dr. Jacobus Daan Van Wyk
University of Johannesburg, South Africa



Abstract:

Technologies have specific life cycles, driven by internal innovation, subsequently reaching maturity. Power electronics appears to be a much more complex case as an enabling technology spanning an enormous range of powers, functions and applications. Power electronics is also divided into many constituent technologies. Up to the present, the development of power electronics has been driven chiefly by internal semiconductor technology and converter circuit technology, approaching maturity in its internally set metrics (ex. efficiency). The fundamental functions found in electronic energy processing, the constituent technologies comprising power electronics and the power electronics technology space are examined critically in the light of the internal driving philosophy of power electronics and its historical development. It is finally concluded that, although approaching the limits of its internal metrics indicate internal maturity, the external constituent technologies of packaging, physical impact and converter control technology still present remarkable opportunities for development. As an enabling technology, these developments, together with internal developments such as wide band-gap semiconductors, will be driven externally by applications in future.

4 Sep. 2012, 10:10 – 10:50h,

Location: Grand Hall

KEY-NOTE SESSION 2

Session Co-Chairs:

Vladimir Katic, University of Novi Sad, Faculty of Technical Science, Novi Sad, Serbia

Dushan Boroyevich, VirginiaTech, Blacksburg, USA

POWER ELECTRONICS FOR ENERGY AND HIGH POWER

Dr. Vlatko Vlatkovic,
GE Power Conversion, USA



Abstract:

Power electronics is rapidly displacing mechanical means of propulsion and motion control, and is moving upstream in the process of electricity use, distribution and generation. The talk will focus on trends in high power applications and use of power electronics in electricity generation and distribution. We will examine examples of advanced power electronics applications in oil and gas industry in renewable power generation and in electricity transmission and distribution.

Dialogue Sessions

4 Sep. 2012, 10:50 – 13:00h,

Master Hall (Exhibition)

DS1a (T1): SEMICONDUCTOR DEVICES, PACKAGING AND INTEGRATION

Session Co-Chairs: Stevan Grabic, University of Novi Sad, Faculty of Technical Science, Novi Sad, Serbia
Boris Dumnic, University of Novi Sad, Faculty of Technical Science, Novi Sad, Serbia

No.	Time	Paper Id/ Panel No	Paper Title
1	10:50 - 13:00 h	196 1.1	Transient Analysis and Simulation of A High Power IGBT Non-Destructive Tester ¹ Ahmed A., ² Coulbeck L., ³ Castellazzi A., ³ Johnson M. ¹ Soongsil University, Republic of Korea ² Dynex Semiconductor Ltd. & Power Semiconductor R&D Centre of Zhuzhou CSR Times Electric Ltd., United Kingdom ³ University of Nottingham, United Kingdom
2	10:50 - 13:00 h	197 1.2	Design and Test of a PCB Rogowski Coil for Very High di/dt Detection ¹ Ahmed A., ² Coulbeck L., ³ Castellazzi A., ³ Johnson M. ¹ Soongsil University, Republic of Korea ² Dynex Semiconductor Ltd. & Power Semiconductor R&D Centre of Zhuzhou CSR Times Electric Ltd., United Kingdom ³ University of Nottingham, United Kingdom
3	10:50 - 13:00 h	221 1.3	Prediction of Conducted EMI in Power Converters Using Numerical Methods ¹ Wei J., ¹ Gerling D., ² Schmid S. ¹ Institut for Electrical Drives, Universitaet der Bundeswehr Muenchen, Germany ² Siemens Corporate Technology, Munich, Germany
4	10:50 - 13:00 h	316 1.4	Design and Evaluation of Reduced Self-Capacitance Inductor for Fast-Switching SiC BJT dc/dc Converters ¹ Zdanowski M., ^{1,2} Rabkowski J., ² Kostov K., ¹ Barlik R., ² Nee H. ¹ Institute of Control and Industrial Electronics / Warsaw University of Technology, Poland ² Electrical Energy Conversion Lab / KTH Royal Institute of Technology, Stockholm, Sweden
5	10:50 - 13:00 h	373 1.5	Oscillation Analysis of an Active Gate Control Circuit for Series Connected IGBT Teerakawanich N., Evans P., Johnson M. University of Nottingham, United Kingdom
6	10:50 - 13:00 h	391 1.6	Towards a Fast Electro-Thermo-Mechanical IGBT/Diode Simulation Framework for Design of Reliable Power Electronic Converters Aristidou P., Palmer P. University of Cambridge, United Kingdom
7	10:50 - 13:00 h	408 1.7	SiC and Si Transistors Comparison in Boost Converter ¹ Zapico A., ² Gabiola I., ² Apiñaniz S., ² Santiago F. J., ² Pujana A., ¹ Rodriguez A., ¹ Briz F. ¹ University of Oviedo, Gijon, Spain ² Tecnalia Research & Innovation - Energy Unit, Bilbao, Spain
8	10:50 - 13:00 h	441 1.8	Performance Evaluation of SiC Power MOSFETs for High-Temperature Applications Chen Z., Yao Y., Danilovic M., Boroyevich D. Center for Power Electronics Systems, Virginia Tech, USA, United States
9	10:50 - 13:00 h	486 1.9	Evaluation of Normally-Off SiC JFET for a High Power Density Matrix Converter Safari S., Castellazzi A., Wheeler P. University of Nottingham, School of Electrical and Electronic Engineering, United Kingdom
10	10:50 - 13:00 h	519 2.1	Overall Low Inductance Module Concept for Maximum System Performance Domes D., Bayerer R., Herbrandt A. Infineon Technologies AG, Germany
11	11:00 - 13:00 h	732 2.2	Switching Speed-Control of an Optimized Capacitor-Clamped Normally-On Silicon Carbide JFET Cascode Haehre K., Meisser M., Denk F., Kling R., Heering W. Karlsruhe Institute of Technology (KIT), Light Technology Institute (LTI), Karlsruhe, Germany

4 Sep. 2012, 10:50 – 13:00h,

Master Hall (Exhibition)

DS1b (T2): POWER ELECTRONICS CONVERTER TOPOLOGIES AND DESIGN (1)

Session Co-Chairs: Stevan Grabic, University of Novi Sad, Faculty of Technical Science, Novi Sad, Serbia
Boris Dumnic, University of Novi Sad, Faculty of Technical Science, Novi Sad, Serbia

No.	Time	Paper Id/ Panel No	Paper Title
1	10:50 - 13:00 h	159 2.3	Lagrangian Analysis of a Frequency Converter ¹ Kats I., ² Slonim M., ³ Abramovitz A., ¹ Bronstein S., ¹ Horen Y. ¹ SCE - Shamoon College of Engineering, Israel ² Ben-Gurion University of the Negev -BGU, Israel ³ University of California, United States
2	10:50 - 13:00 h	163 2.4	A Boost-Type Half-Bridge High Frequency Inverter with Active Filter Function for Induction Heating ¹ Ogiwara H., ¹ Itoi M., ¹ Albogami S., ² Nakaoka M. ¹ Ashikaga Institute of Technology, Japan ² The Electric Energy Saving Research Center, Kyungnam University, Republic of Korea
3	10:50 - 13:00 h	170 2.5	Non-Shoot-Through Mode Behavior of DC/DC Converters with a Quasi Z Source Inverter Jalakas T., Roasto I., Vinnikov D. Tallinn University of Technology, Estonia
4	10:50 - 13:00 h	181 2.6	Analysis of Rectifier Topologies for Automotive HV to LV Phase Shift ZVT DC/DC Converter ¹ Zeljko S., ¹ Reiter T., ² Gerling D. ¹ Infineon Technologies AG, Germany ² Universitaet der Bundeswehr Muenchen, Germany
5	10:50 - 13:00 h	187 2.7	A High Frequency Current Source Converter with Adjustable Magnitude to Drive High Power Piezoelectric Transducers Ghasemi N., Zare F., Ghosh A., Langton C. Queensland University of Technology (QUT), Brisbane, Australia
6	10:50 - 13:00 h	193 2.8	A Dimmable Ćuk Half-Bridge Single-Stage Converter Applied to Electrodeless Fluorescent Lamps ¹ Freitas da Silva M., ¹ Fraytag J., ¹ Marchesan R., ¹ Rosa V. L., ¹ Dalla Costa M.A., ² Alonso Álvares J. M., ¹ Prado R. ¹ Federal University of Santa Maria, Brazil ² University of Oviedo, Spain
7	10:50 - 13:00 h	245 2.9	Features of a Drive System for Pump-Storage Plant Applications Based on the use of Double-Fed Induction Machine with a Multistage-Multilevel Frequency Converter ¹ Pronin M., ² Shonin O., ¹ Vorontsov A., ¹ Gogolev G. ¹ OJSC Power Machines, Saint-Petersburg, Russian Federation ² Mining Institute, Saint-Petersburg, Russian Federation
8	10:50 - 13:00 h	253 3.1	A Comparison of Basic Properties of the Integrated and Cascade Matrix-Reactance Frequency Converters ¹ Fedyczak Z., ¹ Szczesniak P., ¹ Tadra G., ² Klytta M. ¹ University of Zielona Gora, Institute of Electrical Engineering, Poland ² Mittelhessen University of Applied Sciences, Germany
9	10:50 - 13:00 h	325 3.2	High Efficiency Soft Switched 3-Level MOSFET Inverter for an Electric Vehicle PMSM Drive Kernstock H., Plassnegger B. AIT Austrian Institute of Technology - Mobility Department, Vienna, Austria
10	10:50 - 13:00 h	328 3.3	Study Model of Flying Capacitors Multilevel Inverter Kobler P., Pavelka J. Czech Technical University in Prague, Faculty of Electrical Engineering in Prague, Czech Republic
11	10:50 - 13:00 h	341 3.4	Modeling and Current Control of Fuel Cell-Battery Hybrid System with Boost Converter and Input-Output Filters Pavlović T., Bjažić T., Ban Ž. University of Zagreb, Faculty of Electrical Engineering and Computing, Croatia
12	10:50 - 13:00 h	349 3.5	Resonant DC/DC Converter Controlled with Constant Frequency Wojtkowski W. Bialystok University of Technology, Poland
13	10:50 - 13:00 h	365 3.6	Novel Soft Switching DC/DC Converter with Controlled Output Rectifier Dudrik J., Bodor M. Technical University of Košice, Slovakia
14	10:50 - 13:00 h	378 3.7	Cascade Connection of DC-DC Switching Converters by Means of Self-Oscillating DC-Transformers Haroun R., Cid Pastor A., El Aroudi A., Salamero L. M. Universitat Rovira i Virgili, Spain
15	10:50 - 13:00 h	409 3.8	Novel Power Supply for Induction Heating with Power Factor Control Using Phase Shift Kubota S., Yamamoto N., Shimaoka Y., Ito F. Toba National College of Maritime Technology, Japan

No.	Time	Paper Id/ Panel No	Paper Title
16	10:50 - 13:00 h	429 3.9	Topology of a High Voltage Pulse Generator Using Parasitic Parameters of Autotransformers for Non-Thermal Plasma Generation Balcerak M., Hołub M., Kalisiak S., Zeńczak M. West Pomeranian University of Technology, Szczecin, Poland
17	10:50 - 13:00 h	447 4.1	Fault Detection and Reconfiguration Strategy for ANPC Converters Fazio P., Marchesoni M., Parodi G. University of Genoa, Italy
18	10:50 - 13:00 h	453 4.2	Analytical Derivation of Power Semiconductor Losses in MOSFET Multilevel Inverters Gebhardt F., Vach H., Fuchs F. W. University of Kiel, Institute for Power Electronics and Electrical Drives, Germany
19	10:50 - 13:00 h	475 4.3	Investigation on the 30MVA IGBT-Based Voltage Source Converter ¹ Lan Z., ² Li C., ¹ Li Y., ² Zhu C., ² Wang C., ² Yang Q. ¹ Key Laboratory of Power Electronics and Electric Drive, Institute of Electrical Engineering, Chinese Academy of Sciences, China ² Automation Research and Design Institute of Metallurgical Industry, China
20	10:50 - 13:00 h	476 4.4	Study on Large Power Converter System for Rolling Mills ¹ Wang C., ¹ Li C., ¹ Zhu C., ² Lan Z., ² Yang Q., Duan W., Li F. ¹ Automation Research and Design Institute of Metallurgical Industry, Beijing, China ² Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China
21	10:50 - 13:00 h	480 4.5	CCM Operation Analysis of the Single-Phase Three-Level Quasi-Z-Source Inverter ^{1,3} Husev O., ² Roncero-Clemente C., ^{1,3} Stepenko S., ¹ Vinnikov D., ² Romero-Cadaval E. ¹ Tallinn University of Technology, Estonia ² University of Extremadura, Badajoz, Spain ³ Chernihiv State Technical University, Ukraine
22	10:50 - 13:00 h	489 4.6	Dual Input Hybrid Buck LC Converter for a Mixed Wind and PV Array Generation System ¹ Cornea O., ¹ Muntean N., ² Teodorescu R., ¹ Gavris M. ¹ "Politehnica" University of Timisoara, Romania ² Alborg University, Denmark
23	10:50 - 13:00 h	494 4.7	Design and Evaluation of Tapped Inductors for High-Voltage Auxiliary Power Supplies for Modular Multilevel Converters ¹ Modeer T., ² Zdanowski M., ¹ Nee H. ¹ KTH, Royal Institute of Technology, Sweden ² University of Technology, Warsaw, Poland

4 Sep. 2012, 10:50 – 13:00h,

Master Hall (Exhibition):

DS1c (T4): ELECTRICAL MACHINES AND ACTUATORS

Session Co-Chairs: Stevan Grabic, University of Novi Sad, Faculty of Technical Science, Novi Sad, Serbia
Boris Dumnic, University of Novi Sad, Faculty of Technical Science, Novi Sad, Serbia

No.	Time	Paper Id/ Panel No	Paper Title
1	10:50 - 13:00 h	240 4.8	Realization of Hybrid Magnetic Bearing Kupka T., Pavelka J. Faculty of Electrical Engineering, Czech Technical University in Prague, Czech Republic
2	10:50 - 13:00 h	282 4.9	Detailed Measurement and Simulation of FeNdB Permanent Magnet Used for Magnetic Spring Novak M., Cernohorsky J., Kosek M. Technical university of Liberec, Czech Republic
3	10:50 - 13:00 h	385 5.1	Evaluation of Different Mitigation Techniques for Electromagnetic Interference Caused by Common Mode Voltage in BLDC Outer-Rotor Motor ¹ Vidmar G., ¹ Štibelj B., ¹ Rihtaršič B., ² Zagirnyak M., ³ Miljavec D. ¹ Domel, d.o.o., Slovenia ² Kremenchuk Mykhaylo Ostrogradskiy National University (1), Ukraine ³ Faculty of electrical engineering, University of Ljubljana, Slovenia
4	10:50 - 13:00 h	435 5.2	Optimal Design of a Novel Single Phase PM BLDC Motor Using Genetic Algorithm ¹ Cvetkovski G., ² Lefley P., ¹ Petkovska L., ² Ahmed S. ¹ Ss. Cyril and Methodius University, Faculty of Electrical Engineering and Information Technologies, Macedonia ² University of Leicester, Department of Electrical Engineering, United Kingdom
5	10:50 - 13:00 h	443 5.3	Parameters Determination of Grid Connected Interior Permanent Magnet Synchronous Generator ¹ Assem R., ¹ Moussa M., ¹ Dessouky Y., ² Williams B. ¹ Arab Academy for Science and Technology, Electrical and Control Engineering Department, Alexandria, Egypt ² Strathclyde University, United Kingdom
6	10:50 - 13:00 h	477 5.4	Efficiency of Mechanical Energy Recovery from a Tram by Different Input Conditions Kubin J., Richter A. Technical University of Liberec, Faculty of Mechatronics, informatics and interdisciplinary studies, Czech Republic
7	10:50 - 13:00 h	513 5.5	On the Efficiency of Asynchronous Motors Used in Urban Transportation Systems Stanescu D., Nicolae P. Faculty of Electrical Engineering, University of Craiova, Romania
8	10:50 - 13:00 h	596 5.6	State Control with LQR Algorithms Applied in Vibration Damping of Cantilever Beam ¹ Jarzyna W., ² Augustyniak M., ³ Warminski J., ³ Bochenski M. ¹ Lublin University of Technology, Electrical Drive Systems and Electrical Machines Department, Poland ² Induser Ltd., Lublin, Poland ³ Lublin University of Technology, Department of Applied Mechanics, Poland
9	10:50 - 13:00 h	700 5.7	Low Speed PM Generator for Wind Turbines Applications ¹ Madescu G., ² Biriescu M., ¹ Greconici M., ² Mot M. ¹ Romanian Academy, Timisoara Branch, Romania ² Politehnica University of Timisoara, Romania

4 Sep. 2012, 10:50 – 13:00h,

Master Hall (Exhibition)

DS1d (T7): SENSORS, MEASUREMENTS, AND OBSERVATION TECHNIQUES

Session Co-Chairs: Stevan Grabic, University of Novi Sad, Faculty of Technical Science, Novi Sad, Serbia
Boris Dumnic, University of Novi Sad, Faculty of Technical Science, Novi Sad, Serbia

No.	Time	Paper Id/ Panel No	Paper Title
1	10:50 - 13:00 h	157 5.8	Wireless Sensor Networks for Optimization of District Heating ¹ Zabasta A., ² Selmanovs-Pless V., ¹ Kunicina N., ¹ Ribickis L. ¹ Riga Technical University, Latvia ² Micro Dators Ltd., Latvia
2	10:50 - 13:00 h	261 5.9	LED Luminary Evaluation Stand Ambient Light Sensor Provided Data Processing Tetervenoks O., Galkin I. Riga Technical University, Latvia
3	10:50 - 13:00 h	293 6.1	Comparison Between Single Phase and Three Phase of PWM Invertors in Iron Loss Measurement ¹ Matsumori H., ¹ Shimizu T., ² Takano K., ² Ishii H ¹ Tokyo Metropolitan University, Japan ² Iwatsu Test Instrument Corporation, Tokyo, Japan

No.	Time	Paper Id/ Panel No	Paper Title
4	10:50 - 13:00 h	323 6.2	PVDF Based Wind Direction and Speed Sensor for Weather Assessment Relevant to Renewable Energy Generation Marinov A., Bekov E., Valchev V. Technical University of Varna, Bulgaria
5	10:50 - 13:00 h	530 6.3	Force Sensor with Enhanced Contact Detection Capability Babkovic K., Nagy L., Krkljes D. University of Novi Sad, Faculty of Technical Sciences, Serbia
6	10:50 - 13:00 h	533 6.4	ARX Model Based Fault Detection of Rolling Mill's Automatic Gauge Control System ¹ Kovari A., ² Fodor D. ¹ College of Dunaujvaros, Institute of Informatics, Hungary ² University of Pannonia, Faculty of Engineering, Hungary
7	10:50 - 13:00 h	601 6.5	Measurement of the Influence of Household Power Electronics on the Power Quality ¹ Arsov Lj., ² Ijazi I., ¹ Mircevski S., ¹ Cundeva-Blajer M., ² Abazi A. ¹ Faculty of Electrical Engineering and Information Technologies, Macedonia ² South Eastern European University, Tetovo, Macedonia

4 Sep. 2012, 10:50 – 13:00h,

Master Hall (Exhibition)

DS1e (T9): POWER ELECTRONICS IN AEROSPACE, MARINE AND RAILWAY TRANSPORTATION

Session Co-Chairs: Stevan Grabic, University of Novi Sad, Faculty of Technical Science, Novi Sad, Serbia
Boris Dumnic, University of Novi Sad, Faculty of Technical Science, Novi Sad, Serbia

No.	Time	Paper Id/ Panel No	Paper Title
1	10:50 - 13:00 h	369 6.6	Modeling of Switching Transients for Frequency-Domain EMC Analysis of Power Converters ¹ Marlier C., ¹ Videt A., ¹ Idir N., ² Moussa H., ² Meuret R. ¹ Laboratoire d'Électrotechnique et d'Électronique de Puissance (L2EP) / University of Lille, France ² Hispano-Suiza, Moissy-Cramayel, France
2	10:50 - 13:00 h	449 6.7	Hardware-In-Loop Test for Automatic Voltage Regulator Based on Identification Model Meng L., Yang S., Wang L., Liu Y., Peng F. Nanjing University of Aeronautics and Astronautics, Nanjing, China
3	10:50 - 13:00 h	493 6.8	Elimination of Dead-Time Effect Causing Current Distortion of Single-Phase Power Converters ¹ Blahnik V., ² Peroutka Z., ¹ Zak J., ² Talla J. ¹ University of West Bohemia, Department of Electromechanics and Power Electronics, Pilsen, Czech Republic ² University of West Bohemia, Regional Innovation Centre for Electrical Engineering (RICE), Pilsen, Czech Republic
4	10:50 - 13:00 h	527 6.9	DTC Controlled PMSM Traction Drive – Input LC Filter Stabilization Using Model Predictive Control Glasberger T., Talla J., Janda M., Peroutka Z., Šmídl V. University of West Bohemia in Pilsen, Czech Republic
5	10:50 - 13:00 h	542 7.1	Behavior of Active Current Source Rectifier Under Critical Transient Conditions in Traction Michalik J., Molnar J., Peroutka Z. University of West Bohemia, Pilsen, Czech Republic
6	10:50 - 13:00 h	549 7.2	Energy Efficiency of Tram Model with Energy Storage System Streit L., Drabek P. University of West Bohemia, Czech Republic
7	10:50 - 13:00 h	600 7.3	Control of Directly Connected Energy Storage in Diesel Electric Vessel Drives Lana A., Tikkanen K., Lindh T., Partanen J. Lappeenranta University of Technology, Finland
8	10:50 - 13:00 h	610 7.4	Integrated Traction and Auxiliary Power Supply Converters for Diesel-Electric Rail Vehicles ¹ Macan M., ² Težak N. ¹ Koncar – Electronics and Informatics, Zagreb, Croatia ² Koncar – Electrical Engineering Institute, Zagreb, Croatia
9	10:50 - 13:00 h	720 7.5	Efficient Three-Level Boost Converter for Various Applications Meleshin V., Zhiklenkov D., Ganshin A. ZAO "Electro SI", Russian Federation
10	10:50 - 13:00 h	179 7.6	Explicit Model Predictive Control of Buck Converter ¹ Vlad C., ¹ Rodriguez-Ayerbe P., ¹ Godoy E., ² Lefranc P. ¹ Automatic Department, Supélec – E3S, Gif-sur-Yvette, France, ² Energy Department, Supélec – E3S, Gif-sur-Yvette, France

Lecture Sessions:

4 Sep. 2012, 14:00 – 15:40h,

Hall 2

LS1a-1 (ISS-07) MODULAR MULTI-LEVEL CONVERTERS – M2LC (1)

Session Co-Chairs: Drazen Dujic, ABB Switzerland Corporate Research, Baden-Dättwil, Switzerland
Manfred Winkelkemper, ABB Switzerland Ltd. Corporate Research, Baden-Dättwil, Switzerland

No.	Time	Paper Id	Paper Title
1	14:00 h	289	Dimensioning and Design of a Modular Multilevel Converter for Drive Applications Kolb J., Kammerer F., Braun M. Karlsruhe Institute of Technology (KIT), Elektrotechnisches Institut (ETI), Germany
2	14:20 h	529	Accurate Voltage Ripple Estimation and Decoupled Current Control for Modular Multilevel Converters Vasiladiotis M., Cherix N., Rufer A. Laboratory of Industrial Electronics, EPFL, Lausanne, Switzerland
3	14:40 h	544	Functional Modeling and Energetic Macroscopic Representation of Modular Multilevel Converters Cherix N., Vasiladiotis M., Rufer A. Laboratory of Industrial Electronics, EPFL, Lausanne, Switzerland
4	15:00 h	631	Optimized Pulse Pattern Modulation for Modular Multilevel Converter High-Speed Drive Huber J., Korn A. ABB Switzerland Ltd., Power Electronics & MV Drives, Switzerland

4 Sep. 2012, 14:00 – 15:40h,

Hall 2

LS1a-2 (ISS-06): POWER ELECTRONICS IMPACT ON POWER SYSTEMS BEHAVIOUR (1)

Session Co-Chairs: Drazen Dujic, ABB Switzerland Corporate Research, Baden-Dättwil, Switzerland
Manfred Winkelkemper, ABB Switzerland Ltd. Corporate Research, Baden-Dättwil, Switzerland

No.	Time	Paper Id	Paper Title
5	15:20 h	308	Development of PCS for Battery System Installed in Megawatt Photovoltaic System ¹ Tamaki M., ² Takagi K., ² Shimada K., ³ Kawakami N., ³ Iijima Y. ¹ The Okinawa Electric Power Co., Inc, Okinawa, Japan, ² Toshiba Corporation Social Infrastructure Systems Company, Tokyo, Japan ³ Toshiba Mitsubishi-Electric Industrial Systems Corporation, Tokyo, Japan,

4 Sep. 2012, 14:00 – 15:40h,

Hall 3

LS1b (T4): INDUCTION AND RELUCTANCE MACHINES

Session Co-Chairs: Tutelea Lucian, Politechnica University of Timisoara, Romania
Fetah Kolonic, University of Zagreb, Faculty of Electrical Engineering and Computing, Croatia

No.	Time	Paper Id	Paper Title
1	14:00 h	205	BLDC Multiphase Reluctance Machines for Wide Range Applications: a revival attempt Boldea I., Tutelea L., Ursu D. University Politehnica of Timisoara, Romania
2	14:20 h	723	A Novel Four Layer Switch Reluctance Generator Salimi A., Rezazadeh G., Nourollah S., Niassati N., Hajihosseini A. Department of Electrical & Computer Engineering, Shahid Beheshti University, Tehran, Iran
3	14:40 h	206	Efficiency Improvement of Induction Motor by 3-D Core Made of SMC Morimoto M. Tokai University, Japan
4	15:00 h	327	Control of Thrust and Attractive Force of Linear Induction Motor Driven by Power Source with Frequency Component Synchronous with the Motor Speed Tsujiyama K., Morizane T., Kotani Y., Kimura N., Omori H. Osaka Institute of Technology, Japan
5	15:20 h	374	Simple Detection of Broken Rotor Bars using Field-oriented Control Drobnic K., Nemeč M., Fišer R., Ambrožič V. University of Ljubljana, Faculty of Electrical Engineering, Slovenia

4 Sep. 2012, 14:00 – 15:40h,

Hall 4

LS1c (ISS-02): MULTIPHASE SYSTEMS IN POWER CONTROL APPLICATIONS (1)

Session Co-Chairs: Federico Barrero, Universidad de Sevilla, Spain
Mario J. Duran, University of Malaga, Spain

No.	Time	Paper Id	Paper Title
1	14:00 h	165	Predictive Current Control with Modulation in Asymmetrical Six-phase Motor Drives ¹ Prieto J., ¹ Barrero F., ² Lim C. S., ² Levi E. ¹ Universidad de Sevilla, Spain ² Liverpool John Moores University, United Kingdom
2	14:20 h	393	A Comparison of Three-Level Single-Sided and Dual-Inverter Supply for a Five-Phase Drive Bodo N., Dordevic O., Jones M., Levi E. Liverpool John Moores University, United Kingdom
3	14:40 h	404	Modeling of a Five-Phase Induction Motor Drive with a Faulty Phase ¹ Guzman H., ¹ Riveros J., ² Duran M., ¹ Barrero F. ¹ University of Seville, Spain ² University of Malaga, Spain
4	15:00 h	407	Experimental Evaluation of Model Predictive Current Control of a Five-phase Induction Motor using All Switching States ¹ Lim C., ¹ Levi E., ¹ Jones M., ² Rahim N. A., ² Hew W. P. ¹ Liverpool John Moores University, United Kingdom ² University of Malaya, Kuala Lumpur, Malaysia
5	15:20 h	390	A New Robust Torque Control of a Five Phase Permanent Magnet Synchronous Machine Sari B., Dieng A., Benkhoris M., Ait-Ahmed M. University of Nantes, IREENA-CRTT, France

4 Sep. 2012, 14:00 – 15:40h,

Hall 5

LS1d (ISS-10): POWER ELECTRONICS IN PHOTOVOLTAIC POWER SYSTEMS (1)

Session Co-Chairs: Doron Shmilovitz, Tel Aviv University, Israel
Jason Staath, Dartmouth College, Thayer School of Engineering at Dartmouth, United States

No.	Time	Paper Id	Paper Title
1	14:00 h	302	Comparison of a Soft Switched TCM T-Type Inverter to Hard Switched Inverters for a 3 Phase PV Grid Interface Leuenberger D., Biela J. ETH Zurich, Laboratory for High Power Electronic Systems, Switzerland
2	14:20 h	231	Photovoltaic Generator as an Input Source for Power Electronic Converters Puukko J., Nousiainen L., Mäki A., Messo T., Huusari J., Suntio T. Tampere University of Technology, Department of Electrical Energy Engineering, Finland
3	14:40 h	432	A Photovoltaic System with Analog Maximum Power Point Tracking and Grid-Synchronous Control ¹ Huang T., ¹ Lee Y., ² Du M., ¹ Hsieh C., ¹ Yang C., ¹ Feng F., ¹ Chen K. ¹ National Chiao Tung University, Institute of Electrical Control Engineering, Taiwan ² Industrial Technology Research Institute (ITRI), Hsinchu, Taiwan
4	15:00 h	280	The Current Control of PV Inverter for Low Voltage Ride Through ¹ Wu Y., ¹ Chang C., ¹ Chen Y., ¹ Cheng C., ¹ Liu C., ² Chang Y. ¹ National Taiwan University, Dept. of Electrical Engineering, Taipei, Taiwan ² Institute of Nuclear Energy Research, Taoyuan, Taiwan
5	15:20 h	537	Photovoltaic Power System with Integrated Electric Vehicle DC Charger and Enhanced Grid Support Traube J., Lu F., Maksimovic D. University of Colorado, United States

4 Sep. 2012, 14:00 – 15:40h,

Hall 6

LS1e (ISS-12): CIRCUIT AND CONTROL TECHNOLOGIES FOR HIGH EFFICIENCY POWER CONVERSION (1)

Session Co-Chairs: Fujio Kurokawa, Graduate School of Engineering and Graduate School of Science and Technology, Nagasaki University, Japan
Yasuyuki Nishida, Chiba Institute of Technology, Japan

No.	Time	Paper Id	Paper Title
1	14:00 h	273	A New STS Model DC-DC Converter Using Reactor Current Kurokawa F., Yamanishi A. Nagasaki University, Graduate School of Engineering, Japan
2	14:20 h	528	Simple Digital Pulse Width Modulator with 60 Picoseconds Resolution Using a Low-cost FPGA Costinett D., Rodriguez M., Maksimovic D. University of Colorado at Boulder, United States
3	14:40 h	673	Performance Characteristics of Digital Control Boundary Current Mode DC-DC Converter ¹ Kurokawa F., ² Ueno K., ² Murata K.. ¹ Graduate School of Engineering and Graduate School of Science and Technology, Nagasaki University, Japan ² Graduate School of Engineering, Nagasaki University, Japan
4	15:00 h	625	Classification and Comparative Evaluation of PV Panel Integrated DC-DC Converter Concepts Kasper M., Bortis D., Friedli T., Kolar J. W. Power Electronic Systems Laboratory (ETHZ), Switzerland
5	15:20 h	468	L-R Approximation of a Phase-Controlled LCpCs Resonant Converter to Study the Dynamic Response as a LED Lamp Driver Branas C., Azcondo F. J., Lopez V. M., Navarro A., Casanueva R., Diaz F. J. University of Cantabria, Spain

4 Sep. 2012, 16:00 – 17:20h,

Hall 2

LS2a (ISS-07): MODULAR MULTI-LEVEL CONVERTERS – M2LC (2)

Session Co-Chairs: Alfred Rufer, EPFL-STI-ISE-LEI, Lausanne, Switzerland
Manfred Winkelnkemper, ABB Switzerland Ltd. Corporate Research, Baden-Dättwil, Switzerland

No.	Time	Paper Id	Paper Title
1	16:00 h	229	Modular DC/DC Converter: Comparison of Modulation Methods ¹ Kenzelamnn S., ² Dujic D., ² Canales F., ³ de Novaes Y. R., ¹ Rufer A. ¹ EPFL-STI-ISE-LEI, Lausanne, Switzerland ² ABB Switzerland Corporate Research, Baden-Dättwil, Switzerland ³ Universidade do Estado de Santa Catarina, nPEE-DEE-CCT-UDESC, Joinville, Brazil
2	16:20 h	329	Derivation of an Equivalent Submodule per Arm for Modular Multilevel Converters Bärnklaus H., Gensior A., Bernet S. TU-Dresden / ETI / LE, Germany
3	16:40 h	339	Fully Decoupled Current Control and Energy Balancing of the Modular Multilevel Matrix Converter Kammerer F., Kolb J., Braun M. Karlsruhe Institute of Technology (KIT), Elektrotechnisches Institut (ETI), Germany
4	17:00 h	281	Three-phase Advanced Neutral-Point-Clamped IGBT module ¹ Heinzel T., ² Komatsu K., ² Kakefu M., ² Okita S., ² Kobayashi Y., ² Ikawa O. ¹ Fuji Electric Europe GmbH, Offenbach/Main, Germany ² Fuji Electric Co., Ltd., Matsumoto, Japan

4 Sep. 2012, 16:00 – 17:20h,

Hall 3

LS2b (ISS-17): DISTRIBUTED ENERGY SOURCES AND CONTROL OF POWER SYSTEMS (1)

Session Co-Chairs: Alex Stankovic, Tufts University, Medford, MA, United States
Miroslav Begovic, Georgia Institute of Technology, United States

No.	Time	Paper Id	Paper Title
1	16:00 h	567	A Pseudospectral Estimation Method and its Application in Modeling Power System Inter-Area Oscillations Zivanovic R. The University of Adelaide, Australia
2	16:20 h	588	Modeling of Photovoltaic and Wind Turbine Based Distributed Generation in State Estimation ¹ Rankovic A., ² Saric A. T. ¹ Technical faculty Cacak, Serbia ² University of Novi Sad, Faculty of Technical Sciences, Novi Sad, Serbia

No.	Time	Paper Id	Paper Title
3	16:40 h	621	Modeling, Analysis and Control Design Complexities in Future Electric Energy Systems Ilic M., Cvetkovic M., Bachovchin K., Liu Q. Carnegie Mellon University, Department of Electrical and Computer Engineering, United States
4	17:00 h	611	Secondary Voltage and Stability Control ¹ Song Y., ² Begovic M., ¹ BNP Paribas, United States ² Georgia Institute of Technology, United States

4 Sep. 2012, 16:00 – 17:20h,

Hall 4

LS2c (ISS-06): POWER ELECTRONICS IMPACT ON POWER SYSTEMS BEHAVIOUR (2)

Session Co-Chairs: Noriko Kawakami, Toshiba Mitsubishi-Electric Industrial Systems Corp., Japan
Pat Wheeler, University of Nottingham, School of Electrical and Electronic Engineering, United Kingdom

No.	Time	Paper Id	Paper Title
1	16:00 h	299	Modular Multilevel Converter-Energy Difference Controller in Rotating Reference Frame ^{1,2,3} Bergna G., ² Berne E., ² Egrot P., ¹ Lefranc P., ¹ Vannier J.-C., ¹ Arzandé A., ³ Molinas M. ¹ SUPÉLEC, Gif-sur-Yvette, France ² EDF R&D, Moret-sur-Loing, France ³ Norwegian University of Science and Technology, Trondheim, Norway
2	16:20 h	579	The Impact of Switch Mode Regulated Vibratory Resonance Conveyors with Electromagnetic Drive on the Power Supply Network ¹ Despotović Z., ² Šinik V., ¹ Ribić A. ¹ University of Belgrade, Mihajlo Pupin Institute, Serbia ² University of Novi Sad, "Mihajlo Pupin" Technical Faculty, Serbia
3	16:40 h	615	Properties of Reactive Current Injection by AC Power Electronic Systems for Loss Minimization ¹ Suul J., ² Molinas M. ¹ SINTEF Energy, Trondheim, Norway ² Norwegian University of Science and Technology, Trondheim, Norway
4	17:00 h	616	Comparison of Wind Energy Conversion Systems based on High frequency AC-Link: Three-phase Vs. Single-phase Barrera Cardenas R., Molinas M. Norwegian University of Science and Technology, Department of Electric Power Engineering, Norway

4 Sep. 2012, 16:00 – 17:20h,

Hall 5

LS2d (ISS-10): POWER ELECTRONICS IN PHOTOVOLTAIC POWER SYSTEMS (2)

Session Co-Chairs: Dragan Maksimovic, University of Colorado, United States
Jason Stauth, Dartmouth College, Thayer School of Engineering at Dartmouth, United States

No.	Time	Paper Id	Paper Title
1	16:00 h	547	Flexible, Low Profile PV Module Integrated Converter for Distributed MPPT PV System Acanski M., Popovic-Gerber J., Ferreira B. Delft University of Technology, Electrical Power Processing Group, Netherlands
2	16:20 h	239	A Distributed Photovoltaic Energy Optimization System Based on a Sub-Module Resonant Switched-Capacitor Implementation Stauth J., Kesarwani K., Schaef C. Dartmouth College, Thayer School of Engineering at Dartmouth, United States
3	16:40 h	551	A High Efficiency DC-DC Converter Topology Suitable for Distributed Large Commercial and Utility Scale PV Systems Agamy M., Harfman-Todorovic M., Chi S., Elasser A., Steigerwald R. GE Global Research Center, United States
4	17:00 h	389	Distributed Power-Management Architecture for a Low-Profile Concentrating-PV System ¹ Zaman M., ¹ Poshtkouhi S., ¹ Palaniappan V., ¹ Li K. W., ² Bergveld H., ³ Myrskog S., ¹ Trescases O. ¹ University of Toronto, Canada ² NXP Semiconductors, Netherlands ³ Morgan Solar Inc., Canada

4 Sep. 2012, 16:00 – 17:20h,

Hall 6

LS2e (ISS-08): NUMERICAL METHODS IN POWER ELECTRONICS AND MECHATRONICS

Session Co-Chairs: Predrag Pejovic, Faculty of Electrical Engineering, University of Belgrade, Serbia, Serbia
Pavol Bauer, Delft University of Technology, Dept. of Electrical Sustainable Energy, Netherlands

No.	Time	Paper Id	Paper Title
1	16:00 h	235	Simulation Modelling of Mechatronic System with Flexible Parts Hadas Z., Brezina T., Andrs O., Vetiska J. Brezina L. Brno University of Technology, Faculty of Mechanical Engineering, Czech Republic
2	16:20 h	319	Design and FEM Analyses of an Electrically Excited Automotive Synchronous Motor Hruska K., Kindl V., Pechanek R. University of West Bohemia in Pilsen, Czech Republic
3	16:40 h	364	Predictive Physical Model of Cosmic-Radiation-Induced Failures of Power Devices ¹ Weiss C., ¹ Wachutka G., ² Haertl A., ² Hille F., ² Pfirsich F. ¹ Munich University of Technology, Institute for Physics of Electrotechnology, Germany ² Infineon Technologies AG, Neubiberg, Germany
4	17:00 h	541	Analyzing of Two Types Water Cooling Electric Motors Using Computational Fluid Dynamics Pechánek R., Bouzek L. University of West Bohemia, Faculty of Electrical Engineering, Pilsen, Czech Republic

City Sightseeing Tour & visit to Petrovardin Fortress

4 Sep. 2012, 17:30 – 19:30h

- Coaches will wait in front of the Master Centre from 17:15h
- Coaches will leave as soon as all seats are filled

Welcome Reception

4 Sep. 2012, 19:30 – 23:00h

Location: Fishermen Island, Restaurant “Alaska Barka”

- Entertainment: Music will be provided by “Mica Jankovic” Ensemble
- Coaches depart to all hotels from 22:30 – 23:30h



CONFERENCE - 05 September 2012 (Wednesday)

Lecture sessions

5 Sep. 2012, 08:20 – 09:40h,

Hall 2

LS3a-1 (T4): SYNCHRONOUS AND PERMANENT MAGNET SYNCHRONOUS MACHINES

Session Co-Chairs: Krzysztof Zawirski, Poznan University of Technology, Poland
Leonids Ribickis, Riga Technical University, Latvia

No.	Time	Paper Id	Paper Title
1	08:20 h	190	Prediction of Inductance Characteristics of PMSMs in Saliency-based Sensorless Control Arellano-Padilla J., Sumner M., Gerada C., Asher G. University of Nottingham, United Kingdom
2	08:40 h	538	Sensitivity and Robustness Aspects of Sensorless Rotor Temperature Estimation Technique for Permanent Magnet Synchronous Motor Ganchev M. Austrian Institute of Technology, Austria
3	09:00 h	667	Flux Focusing Permanent Magnet Synchronous Machine Modeling by 2D Magnetic Equivalent Circuit ¹ Nedjar B., ² Hlioui S., ⁴ Vido L., ⁴ Amara Y., ¹ Gabsi M. ¹ SATIE, ENS Cachan, CNRS, France ² SATIE, CNAM, CNRS, France ³ SATIE, Université de Cergy-Pontoise, CNRS, France ⁴ GREAH, Université du Havre, France

5 Sep. 2012, 08:20 – 09:40h,

Hall 2

LS3a-2 (ISS-10): POWER ELECTRONICS IN PHOTOVOLTAIC POWER SYSTEMS (3)

Session Co-Chairs: Dragan Maksimovic, University of Colorado, United States
Nicola Femia, University of Salerno, Faculty of Engineering, Italy

No.	Time	Paper Id	Paper Title
4	09:20 h	395	Sliding Mode Control of Photovoltaic Module Integrated Buck-Boost Converter Levron Y., Shmilovitz D. Tel Aviv University, Israel

5 Sep. 2012, 08:20 – 09:40h,

Hall 3

LS3b (ISS-11): CYBER PHYSICAL SYSTEMS: APPLICATIONS TO POWER ELECTRONICS AND SMART GRID

Session Co-Chairs: Ivan Celanovic, Massachusetts Institute of Technology, Cambridge, United States
Nikola Celanovic, University of Novi Sad, Faculty of Technical Science, Novi Sad, Serbia

No.	Time	Paper Id	Paper Title
1	08:20 h	593	A Versatile Modular Hardware Platform for Distributed Large-Scale Real-Time Simulation Adler F., Stage H., De Doncker R. Power Generation and Storage Systems - E.ON Energy Research Center RWTH Aachen University, Germany
2	08:40 h	691	Hysteresis Control of Voltage Source Converters for Synchronous Machine Emulation Pulendran S., Tate J. University of Toronto, Department of Electrical and Computer Engineering, Canada
3	09:00 h	546	A Linear-Switched Observer for Large-Signal State Estimation in Power Electronics ¹ Poon J., ¹ Genić A., ² Ding X., ² Dominguez-Garcia A., ¹ Celanovic I. ¹ Massachusetts Institute of Technology, Cambridge, United States ² University of Illinois at Urbana-Champaign, Urbana, United States
4	09:20 h	609	LQG-Based Voltage Control Using Load Adaptive Controller Peltoniemi P., Nuutinen P., Pyrhönen J. Lappeenranta University of Technology, Department of Electrical Engineering, Finland

5 Sep. 2012, 08:20 – 09:40h,

Hall 4

LS3c (T6): ADVANCEMENTS IN POWER SUPPLIES

Session Co-Chairs: Carlo Cecati, University of L'Aquila, Italy
 Johann W. Kolar, Swiss Federal Institute of Technology, Zürich, Switzerland

No.	Time	Paper Id	Paper Title
1	08:20 h	237	Softswitching with SiC-Devices for Compact On-Board Railway Power Supplies ¹ Nguyen P., ² Gerth A. ¹ Technical University Berlin/Power Converter Solutions GmbH, Germany ² Power Converter Solutions GmbH, Germany
2	08:40 h	448	High-Resolution Error Compensation in Continuous Conduction Mode Power Factor Correction Stage Without Current Sensor ¹ Lopez Martin V. M., ¹ Azcondo Sanches F. J., ² de Castro A. ¹ University of Cantabria, Spain ² HCTlab. Universidad Autonoma de Madrid, Spain
3	09:00 h	403	Turn-on behavior of automotive multi-phase converters with coupled inductors Utz S., Pforr J. University of Applied Sciences Ingolstadt, Germany
4	09:20 h	559	High-Voltage Pulse Generators Based on Capacitor-Diode Voltage Multiplier ¹ Rezanejad M., ¹ Adabi J., ¹ Sheikhaleslami A., ² Nami A. ¹ Noshirvani university of tech. Babol., Iran, Iran ² RD Power Technology, ABB AB, Corporate Research Center, Sweden

5 Sep. 2012, 08:20 – 09:40h,

Hall 5

LS3d (SS4): INCREASE OF POWER DISTRIBUTION AND TRANSMISSION EFFECTIVENESS USING ELECTRONIC POWER FLOW CONTROL

Session Co-Chairs: Sergey Ryvkin, Trapeznikov Institute of Control Sciences of Russian Academy of Sciences, Russian Federation
 Yuriy Rozanov, National Research University "Moscow Power Engineering Institute", Russian Federation

No.	Time	Paper Id	Paper Title
1	08:20 h	257	D-Square Converter – Functionality, Application, Control ¹ Himmelstoss F., ² Ryvkin S. ¹ University of Applied Sciences Technikum Wien, Austria ² Trapeznikov Institute of Control Sciences of Russian Academy of Sciences, Moscow, Russian Federation
2	08:40 h	384	Operation Modes of Converters with SMES on DC-side Used for Improving of Electrical Systems Efficiency Lapanov M., Rozanov Y. National Research University "Moscow Power Engineering Institute", Russian Federation
3	09:00 h	591	Analysis of Electrical Energy Consumption in Elevator Drives ¹ Georgiev I., ² Mirchevski S. ¹ KONE Elevators, Melbourne, Australia ² FEIT, University Ss Cyril and Methodius, Skopje, Macedonia
4	09:20 h	668	Comparison of Offshore Power Transmission Technologies: a Multi-Objective Optimization Approach ¹ Rodrigues S., ¹ Bauer P., ² Pierik J. ¹ Delft University of Technology, Delft, The Netherlands ² Energy Research Centre of the Netherlands, Petten, The Netherlands

5 Sep. 2012, 08:20 – 09:40h,

Hall 6

LS3e (ISS-12): CIRCUIT AND CONTROL TECHNOLOGIES FOR HIGH EFFICIENCY POWER CONVERSION (2)

Session Co-Chairs: Yasuyuki Nishida, Chiba Institute of Technology, Japan
 Fujio Kurokawa, Graduate School of Engineering and Graduate School of Science and Technology, Nagasaki University, Japan

No.	Time	Paper Id	Paper Title
1	08:20 h	396	Power Loss Reduction of a AC-DC Converter Features 10-V and 10000-A for Sintering Power Supply Oriyawa K., Itoh J. Nagaoka University of Technology, Nagaoka, Niigata, Japan
2	08:40 h	523	Hybrid Three-Phase Rectifier with Switched Current Injection Device ¹ Jankovic M., ¹ Darijevic M., ¹ Pejovic P., ² Kolar J., ³ Nishida Y. ¹ Faculty of Electrical Engineering, University of Belgrade, Serbia, Serbia ² Swiss Federal Institute of Technology, Zürich, Switzerland ³ Chiba Institute of Technology, Japan, Japan

No.	Time	Paper Id	Paper Title
3	09:00 h	417	Three-Phase Harmonic Reducing Diode Rectifier ¹ Nishida Y., ¹ Ohyama H., ² Pejovic P., ³ Kolar J. ¹ Chiba Institute of Technology, Tsudanuma, Narashino, Chiba, Japan ² University of Belgrade, Belgrade, Serbia ³ Swiss Federal Institute of Technology, Zurich, Switzerland
4	09:20 h	251	Cost Impacts of High Efficiency Power Supply Technologies in Railway Power Supply - Traction and Station - Hayashiya H., Watanabe Y., Fukasawa Y., Miyagawa T., Egami A., Iwagami T., Kikuchi S., Yoshizumi H. East Japan Railway Company, Japan

5 Sep. 2012, 10:00 – 11:40h,

Hall 2

LS4a (T9): POWER ELECTRONICS IN AIRCRAFT AND TRACTION APPLICATIONS

Session Co-Chairs: Zdenek Peroutka, University of West Bohemia, Regional Innovation Centre for Electrical Engineering (RICE), Pilsen, Czech Republic
Petar Grbovic, HUAWEI Technologies Dueseldorf GmbH, Germany

No.	Time	Paper Id	Paper Title
1	10:00 h	173	Real-time Digital Simulation of High-power Electrical Traction System Guo X., You X., Song Y. Department of Electrical Engineering, Beijing Jiao Tong University, China
2	10:20 h	322	Control of Primary Voltage-Source Active Rectifiers of Traction Converter with Medium-Frequency Transformer: Advantages of Control Unit Combining DSP and FPGA ¹ Janik D., ¹ Peroutka Z., ¹ Molnár J., ² Komrska T., ² Žák J. ¹ Regional Innovation Center for Electrical Engineering (RICE), Pilsen, Czech Republic ² Faculty of Electrical Engineering, Pilsen, Czech Republic
3	10:40 h	377	Design and Implementation of Control Algorithm for an Active Power Filter in Aviation Liebig S., Engstler J., Engler A. Liebherr Elektronik GmbH, Lindau, Germany
4	11:00 h	550	Size and Weight Dependence of the Single Stage Input EMI Filter on Switching Frequency for Low Voltage Bus Aircraft Applications Danilovic M., Luo F., Xue L., Wang R., Mattavelli P., Boroyevich D. CPES, Virginia Tech, Blacksburg, United States
5	11:20 h	552	Power Management of a Regenerative Local HVDC Aircraft Network Using Supercapacitors ¹ Swierczek J., ² Mollet F., ² Saudemont C., ¹ Meuret R., ² Robyns B. ¹ Hispano-Suiza (SAFRAN Group), France ² Lille Laboratory of Electrical Engineering and Power Electronics, Ecole des Hautes Etudes d'Ingénieur (HEI), France

5 Sep. 2012, 10:00 – 11:40h,

Hall 3

LS4b-1 (ISS-01): SPEED SENSORLESS CONTROL OF ELECTRICAL MACHINES

Session Co-Chairs: Jaroslaw Guzinski, Gdansk University of Technology, Poland
Greg Asher, University of Nottingham, United Kingdom

No.	Time	Paper Id	Paper Title
1	10:00 h	203	Hybrid Position Sensorless Vector Control of a Reluctance Synchronous Machine Through the Entire Speed Range ¹ Villet W., ¹ Kamper M., ² Landsmann P., ² Kennel R. ¹ University of Stellenbosch, Electrical Engineering Department, Electric Machines Laboratory, South Africa ² Technische Universität Muenchen, Institute for Electrical Drive Systems and Power Electronics, Germany
2	10:20 h	499	Novel MRAS Approach for Online Identification of Key Parameters for Self-Sensing Control of PM Synchronous Machines Wiedmann K., Mertens A. Institute for Drive Systems and Power Electronics - Leibniz Universität Hannover, Germany
3	10:40 h	709	Performance Evaluation of Field Angle Correction Scheme for High Speed Sensorless IM Porobic V., Adzic E., Marcetic D. University of Novi Sad, Faculty of Technical Sciences, Novi Sad, Serbia

5 Sep. 2012, 10:00 – 11:40h,

Hall 3

LS4b-2 (ISS-17): DISTRIBUTED ENERGY SOURCES AND CONTROL OF POWER SYSTEMS (2)

Session Co-Chairs: Andrija Saric, University of Novi Sad, Faculty of Technical Science, Novi Sad, Serbia
 Paolo Mattavelli, Center For Power Electronics Systems, Virginia Tech, Blacksburg, United States

No.	Time	Paper Id	Paper Title
4	11:00 h	371	Environmental and Economical Optimization of Microgrid Long Term Operational Planning Including PV-based Active Generators ^{1,2} Kanchev H., ¹ Lazarov V., ² François B. ¹ Technical University of Sofia, Faculty of Electrical Engineering, Bulgaria ² Ecole Centrale de Lille, L2EP, Bulgaria
5	11:20 h	304	A Virtual Point of Common Coupling Voltage for Improved Droop Control in Microgrids ¹ Rowe C., ² Summers T., ² Betz R., ³ Moore T.G. ¹ University of Newcastle / CSIRO Energy Centre, Australia ² University of Newcastle, Australia ³ CSIRO Energy Centre, Australia

5 Sep. 2012, 10:00 – 11:40h,

Hall 4

LS4c (T7): MEASUREMENT, ESTIMATION, MONITORING AND FAULT DETECTION

Session Co-Chairs: Zdenek Peroutka, University of West Bohemia, Regional Innovation Centre for Electrical Engineering (RICE), Pilsen, Czech Republic
 Josif Tomic, University of Novi Sad, Faculty of Technical Science, Novi Sad, Serbia

No.	Time	Paper Id	Paper Title
1	10:00 h	167	Measuring System for Distorted Regime Generated by Three Phase Nonlinear Loads ¹ Panoiu C., ¹ Rob R., ² Panoiu M., ² Sora I., ¹ Politehnica University of Timisoara, Faculty of Engineering Hunedoara, Romania ² Politehnica University of Timisoara, Faculty of Electrical and Power Engineering, Romania
2	10:20 h	176	SVM Broken Bar Detection Based on Analysis of Phase Current Matic D., Kulic F. Faculty of Technical Sciences, Novi Sad, Serbia,
3	10:40 h	262	Real-time Analysis Using Discrete Wavelet Transform in Power Systems ¹ Nicolae I., ² Nicolae P., ² Nicolae M. ¹ University of Craiova, Faculty of Automation, Computer Science and Electronics, Romania ² University of Craiova, Faculty of Electrical Engineering, Romania
4	11:00 h	265	Remote Monitoring of Water Salinity by Using Side-polished fiber-optic U-Shaped Sensor ¹ Stupar D., ¹ Bajić J., ¹ Joža A., ¹ Dakić B., ¹ Slankamenac M., ¹ Živanov M., ² Cibula E. ¹ University of Novi Sad, Faculty of Technical Sciences, Serbia ² Faculty of Electrical Engineering and Computer Science, University of Maribor, Slovenia
5	11:20 h	539	Hybrid Estimator Using Advanced Model Selection Approach for Sensorless Control of PMSM Vosmik D., Smidl V., Peroutka Z. University of West Bohemia in Pilsen, Regional Innovation Centre for Electrical Engineering, Czech Republic

5 Sep. 2012, 10:00 – 11:40h,

Hall 5

LS4d (T8): POWER ELECTRONICS IN ELECTRIC VEHICLES

Session Co-Chairs: Miran Rodic, University of Maribor, Maribor, Slovenia
 Lech Grzesiak, Warsaw University of Technology, Institute of Control and Industrial Electronics, Poland

No.	Time	Paper Id	Paper Title
1	10:00 h	343	Overview on Battery Chargers for Plug-in Electric Vehicles Bertoluzzo M., Zabihi N., Buja G. University of Padova, Department of Electrical Engineering, Italy
2	10:20 h	362	Design and Control of a Bidirectional DC/DC Converter for an Electric Vehicle Albiol-Tendillo L., Vidal-Idiarte E., Maixé-Altés J., Bosque-Moncusí J. M., Valderrama-Blaví H. Universitat Rovira i Virgili, Spain

No.	Time	Paper Id	Paper Title
3	10:40 h	397	Power Semiconductors Solutions for Hybrid-Electric and Electric Vehicles Graovac D., Christmann A., Münzer M. Infineon AG, Neubiberg, Germany
4	11:00 h	178	Layout and Operation of a Non-Contact Charging System for Electric Vehicles ¹ Schmuelling B., ¹ Cimen S. G., ² Vosshagen T., ² Turki F. ¹ University of Wuppertal, Germany ² Vahle Inc., Kamen, Germany
5	11:20 h	598	High Frequency-link AC-AC Wireless Power Supply System in Parking Tower ¹ Hiraki E., ¹ Kawano S., ¹ Tanaka T., ² Okamoto M. ¹ Yamaguchi University, Ube, Japan ² Ube National College of Technology, Japan

5 Sep. 2012, 10:00 – 11:40h,

Hall 6

LS4e (SS2): INDUSTRIAL WIRELESS SENSOR NETWORKS

Session Co-Chairs: Princy Johnson, Liverpool John Moores University, United Kingdom
Sergio Toral, Dpto. Ingeniería Electrónica Avda. Camino de los Descubrimientos, Spain

No.	Time	Paper Id	Paper Title
1	10:00 h	372	Biased Random Algorithm for Load Balancing in Wireless Sensor Networks (BRALB) Touray B., Shim J., Johnson P. Liverpool John Moores University, United Kingdom
2	10:20 h	241	Optimization of Network Lifetime Through Energy-efficient Broadcast Scheme using Dynamic Random Walk ¹ Gutiérrez Reina D., ² Johnson P., ¹ Barrero F., ¹ Toral Marín S. ¹ Dpto. Ingeniería Electrónica Avda. Camino de los Descubrimientos, Spain ² Liverpool John Moores University, United Kingdom
3	10:40 h	260	Dynamic Communication Architecture for Intelligent Rail Network Governance ¹ Gutiérrez Reina D., ² Johnson P., ² Randles M., ¹ Barrero F., ¹ Toral Marín S. ¹ Dpto. Ingeniería Electrónica Avda. Camino de los Descubrimientos, Spain ² Liverpool John Moores University, United Kingdom
4	11:00 h	584	Wireless Sensor Network Based Monitoring System for High Power Transformers Nikolic A., Zigic A., Miladinovic N. Electrical Engineering Institute Nikola Tesla, Serbia
5	11:20 h	244	A Zigbee Target System Running TinyOS ¹ Clemotte Miret A., ¹ Vargas E., ² Toral S. ¹ Universidad Católica, Asunción, Paraguay, Paraguay ² University of Seville, Paraguay

5 Sep. 2012, 12:00 – 13:00h,

Hall 2

LS5a (ISS-16): POWER ELECTRONICS IN BIOMEDICAL APPLICATIONS: GENERAL APPLICATIONS

Session Co-Chairs: Boguslaw Grzesik, Silesian University of Technology, Poland
Predrag Pejovic, University of Belgrade, Belgrade, Serbia

No.	Time	Paper Id	Paper Title
1	12:00 h	687	Power Electronics in Biomedical Applications – an Overview Grzesik B., Stepien M. Silesian University of Technology, Poland
2	12:20 h	666	Utilization of Wideband Power Electronics Current Sources in Generator of Spatial Magnetic Field Gwozdz M., Porada R. Institute of Electrical Engineering and Electronics, Poznan University of Technology, Poland
3	12:40 h	682	A Universal Functional Electrical Stimulator Based on Merged Flyback-SC Circuit Huerta Olivares S. C., Tarulli M., Prodic A., Popovic M. R., Lehn P. W. University of Toronto, Canada

5 Sep. 2012, 12:00 – 13:00h,

Hall 3

LS5b (ISS-02): MULTIPHASE SYSTEMS IN POWER CONTROL APPLICATIONS (2)

Session Co-Chairs: Mario J. Duran, University of Malaga, Spain
 Federico Barrero, Dpto. Ingeniería Electrónica Avda. Camino de los Descubrimientos, Spain

No.	Time	Paper Id	Paper Title
1	12:00 h	644	Behavior of Multiphase Induction Machines with Unbalanced Stator Resistances Mengoni M., Zarri L., Tani A., Gritli Y., Serra G., Filippetti F. University of Bologna, Department of Electrical Engineering, Italy
2	12:20 h	171	Current Control of a Six-Phase Induction Generator for Wind Energy Plants ¹ Che H. S., ² Hew W., ³ Rahim N., ¹ Levi E., ¹ Jones M., ³ Duran M. J. ¹ Liverpool John Moores University, United Kingdom ² University of Malaya, Malaysia ³ University of Malaga, Spain
3	12:40 h	405	A Comprehensive Fault Analysis of a Five-Phase Induction Motor Drive with an Open Phase ¹ Guzman H., ² Duran M., ¹ Barrero F. ¹ University of Seville, Spain ² University of Malaga, Spain

5 Sep. 2012, 12:00 – 13:00h,

Hall 4

LS5c (SS1): NEW INVERTER CONTROLS (1)

Session Co-Chairs: Tomoki Yokoyama, Tokyo Denki University, Japan
 Hirohito Funato, Utsunomiya University, Japan

No.	Time	Paper Id	Paper Title
1	12:00 h	222	An Improved SVPWM Method for Multilevel Inverters ¹ Trabelsi M., ¹ Ben-Brahim L., ² Yokoyama T., ³ Kawamura A., ⁴ Kurosawa R., ⁴ Yoshino T. ¹ Qatar University, Qatar ² Tokyo Denki University, Japan ³ Yokohama National University, Yokohama, Japan ⁴ TMEIC, Tokyo, Japan
2	12:20 h	233	Efficiency Improvement of PM Motor by Minimum THD PAM Control Watanabe Y., Kim T., Mushi A., Kawamura A. Yokohama National University, Japan
3	12:40 h	670	Output Current Signs-Based PWM Strategy of Matrix Converters for Reducing Input Current Harmonics Takeshita T., Fukagawa H. Nagoya Institute of Technology, Japan

5 Sep. 2012, 12:00 – 13:00h,

Hall 5

LS5d (T2): NOVEL POWER ELECTRONICS CONVERTER TOPOLOGIES

Session Co-Chairs: Miro Milanovic, University of Maribor FER, Slovenia
 Francisco Canales, ABB Switzerland Corporate Research, Baden-Dättwil, Switzerland

No.	Time	Paper Id	Paper Title
1	12:00 h	274	Single-Phase Single-Stage Bidirectional Isolated ZVS AC-DC Converter with PFC Jauch F., Biela J. Laboratory for High Power Electronic Systems, ETH Zurich, Switzerland
2	12:20 h	467	Voltage-Type Γ-Source Inverters with Continuous Input Current and Enhanced Voltage Boost Capability ¹ Mo W., ¹ Loh P., ² Blaabjerg F. ¹ Electrical and Electronic Engineering Nanyang Technological University, Singapore ² Aalborg University, Institute of Energy Technology, Aalborg, Denmark
3	12:40 h	514	Highly Efficient and Compact DC-DC Converter for Ultra-Fast Charging of Electric Vehicles Christen D., Tschannen S., Biela J. HPE D-ITET ETH Zürich, Switzerland

5 Sep. 2012, 12:00 – 13:00h,

Hall 6

LS5e (ISS-05): SUPPLYING WIDEBAND RF POWER AMPLIFIERS (1)

Session Co-Chairs: Eduard Alarcon, Universidad Politecnica de Cataluña, Department of Electronic Engineering, Spain
Miroslav Vasic, Universidad Politécnica de Madrid, Centro de Electrónica Industrial, Spain

No.	Time	Paper Id	Paper Title
1	12:00 h	242	Enhancing the Bandwidth of the Multiple Input Buck Converter by Means of Filter Design ¹ Miaja P., ¹ Rodriguez A., ¹ Sebastian J., ² Rodriguez M. ¹ University of Oviedo, Electronic Power Supply Systems Group, Spain ² University of Colorado, Colorado Power Electronics Center, United States
2	12:20 h	243	Specifications of High-Frequency DC/DC Converters for Battery-Operated Class-F RF Applications Bathily M., Allard B., Hasbani F., Verdier J. Université de Lyon, Ampère, INSA Lyon, CNRS UMR 5005, France
3	12:40 h	387	Resonant Pulse-Shaping Power Supply for Radar Transmitters ¹ Rodriguez M., ¹ Roberg M., ¹ Pack R., ² Fernandez P., ³ Alarcon E., ¹ Popovic Z., ¹ Maksimovic D. ¹ University of Colorado at Boulder, ECEE Department Boulder, United States ² Universidad de Oviedo, Power supply systems group, Spain ³ Universidad Politecnica de Cataluña, Department of Electronic Engineering, Spain

Key-note Sessions

5 Sep. 2012, 14:00 – 14:40h,

Location: Grand Hall

KEY-NOTE SESSION 3

Session Co-Chairs:

Istvan Nagy, Budapest University of Technology and Economics, Budapest, Hungary
Fujio Kurokawa, Nagasaki University, Nagasaki, Japan

CONTACTLESS ENERGY TRANSFER (CET) SYSTEMS - A REVIEW

Professor dr. Marian Kazmierkowski
Warsaw University of Technology, Poland

A. J. Moradewicz
Electrotechnical Institute, Warsaw-Miedzylesie, Poland



Abstract:

Recently, the contactless energy transfer (CET) systems are developed and investigated widely. This innovative technology creates new possibilities to supply mobile devices with electrical energy because elimination of cables, connectors and/or slip-rings increase reliability and maintenance-free operation. The aim of this work is review of power electronics based CET systems. Various techniques of the CET systems are divided according to a medium used for energy transfer and presented in the following groups: 1) sound based CETs, 2) light based CETs, 3) capacitive based CETs, 4) and the largest group of inductive coupled CET systems.

The basic principles and the latest developments of these techniques with special focus on inductively coupled CET solutions have been systematically described in this work. The advantages and limitations have been briefly examined, and the application field where each technique is particularly suited has been indicated. Also, examples of vehicle to grid (V2G) technology based on inductive coupled CET systems are presented. Some oscillograms that illustrate properties of the discussed techniques will be shown.

5 Sep. 2012, 14:40 – 15:20h,

Location: Grand Hall

KEY-NOTE SESSION 4

Session Co-Chairs:

Istvan Nagy, Budapest University of Technology and Economics, Budapest, Hungary
Fujio Kurokawa, Nagasaki University, Nagasaki, Japan

**DVANCE MODULE PACKAGING FOR
INCREASED OPERATION TEMPERATURES
AND POWER DENSITIES**

**Peter Beckedahl,
*Semikron, Germany***



Abstract:

Power Electronics is a key enabling technology for the effective and efficient generation, distribution, and use of electrical energy. In the range of kW to MW, power semiconductor modules play a key role in power electronic systems. Whereas in the past decade the R&D work on materials and processes to manufacture such modules was more motivated by continuous improvement, more drastic changes are emerging nowadays. This is driven by the urgent need for much higher power densities, for higher reliability and further cost reduction. Also the requirements imposed by wide band gap semiconductors need now seriously to be addressed. Therefore this paper will present an overview of material and process developments which enable such improvements. In particular, the paper will highlight the latest innovations in die attach technologies as well as the potential of direct liquid cooling and system integration.

5 Sep. 2012, 15:20 – 16:00h,

**Location: Grand Hall
KEY-NOTE SESSION 5**

Session Co-Chairs:

Istvan Nagy, Budapest University of Technology and Economics, Budapest, Hungary
Fujio Kurokawa, Nagasaki University, Nagasaki, Japan

**THE PRESENT STATUS AND FUTURE
PROSPECT OF HIGH SPEED AND HIGH
POWER ELECTIC TRACTION SYSTEM**

**Masato Iwataki,
*Railway System Co., Hitachi Ltd, Japan***



Abstract:

Electric traction system started with direct current power supply and motors at Berlin Industrial Exhibition in 1879. Alternate current power supply and motors was in revenue service at mountain railway of Switzerland in 1898. After that, according to economical growth, high speed and high power electric traction system was realized as important transportation and communication means. Power electronics devices, such as diode, thyristor, IGBT, are the key component of electric traction system development. The lecture will present the present status and future prospect of electric traction systems.

Dialogue Sessions

5 Sep. 2012, 16:00 – 18:00h,

Master Hall (Exhibition)

DS2a (T5): VARIABLE SPEED DRIVES AND INDUSTRIAL DRIVE APPLICATIONS

Session Co-Chairs: Darko Marcetic, University of Novi Sad, Faculty of Technical Science, Novi Sad, Serbia
 Vlado Porobic, University of Novi Sad, Faculty of Technical Science, Novi Sad, Serbia

No.	Time	Paper Id/ Panel No	Paper Title
1	16:00 - 18:00 h	166 1.1	The Explicit Solution of Model-Based Predictive Control by Considering the Nonlinearities in Drive Applications ¹ Al_Sheakh Ameen N., ¹ Galal B.S., ² Kennel R. M., ³ Kanchan R. S. ¹ University of Wuppertal, Institute of electrical machines and drives, Germany ² Technische Universitaet Muenchen, Institute of electrical drives and power electronics, Munich, Germany ³ ABB Corporate Research Sweden, Sweden
2	16:00 - 18:00 h	215 1.2	Indirect Tension Control Method for an Intermittent Web Transport System Nevaranta N., Niemelä M., Pyrhönen J., Pyrhönen O., Lindh T. Lappeenranta University of Technology, Finland
3	16:00 - 18:00 h	218 1.3	A Novel Piecewise Anti-Windup Design for Speed Loop PI Controller of PMSM Servo System Ming Y., Li N., Dian-guo X. Harbin Institute of Technology, Dept of Electrical Engineering, China
4	16:00 - 18:00 h	224 1.4	Sensorless Direct Torque Control of Induction Motor Drive with LC Filter Guzinski J. Gdansk University of Technology, Poland
5	16:00 - 18:00 h	234 1.5	Predictive Current Control of a Doubly Fed Inductor Generator (DFIG) for Fast Power Reference Tracking Araya M., Silva C., Cortes P. Departamento de Electrónica, Universidad Técnica Federico Santa María, Valparaíso, Chile
6	16:00 - 18:00 h	347 1.6	State Feedback Control of the PMSM Servo-Drive with Sinusoidal Voltage Source Inverter ¹ Tarczewski T., ² Grzesiak L. ¹ Nicolaus Copernicus University, Institute of Physics, Toruń, Poland ² Warsaw University of Technology, Institute of Control and Industrial Electronics, Poland
7	16:00 - 18:00 h	351 1.7	2-DOF PI(D) Takagi-Sugeno and Sliding Mode Controllers for BLDC Drives ¹ Stinean A., ¹ Preitl S., ¹ Precup R., ² Petriu E.M., ¹ Dragos C., ¹ Radac M. ¹ Politehnica University of Timisoara, Department of Automation and Applied Informatics, Romania ² University of Ottawa, School of Electrical Engineering and Computer Science, Canada
8	16:00 - 18:00 h	416 1.8	Multiphase Multi-Inverter Drive with Discontinuous Synchronized Modulation ¹ Oleschuk V., ² Gregor R., ³ Barrero F. ¹ Academy of Sciences of Moldova, Kishinau, Moldova ² National University of Asuncion, Paraguay ³ University of Seville, Spain
9	16:00 - 18:00 h	421 1.9	Fuzzy Speed Control of Belt Conveyor System to Improve Energy Efficiency Ristić L., Bebić M., Jevtić D., Mihailović I., Štakić S., Rašić N., Jeftenić B. Faculty of Electrical Engineering University in Belgrade, Serbia
10	16:00 - 18:00 h	452 2.1	Increasing Sensitivity of Stator Winding Short Circuit Fault Indicator in Inverter Fed Induction Machines ¹ Stojičić G., ¹ Stanković J., ² Joksimović G., ³ Vašak M., ² Perić N., ¹ Wolbank T. ¹ Vienna University of Technology, Department of Energy Systems and Electrical Drives, Austria ² University of Montenegro, Faculty of Electrical Engineering, Montenegro ³ University of Zagreb, Faculty of Electrical Engineering and Computing, Croatia
11	16:00 - 18:00 h	496 2.2	Medium Voltage Inverter for Energy Savings with Kiln Fan in Cement Industry ¹ Andonov Z., ¹ Gjorgjeski D., ¹ Efremov Z., ² Cvetkovski G., ³ Jeftenic B., ⁴ Arsov G. ¹ Ekomozaik, Macedonia ² Cementarnica Usje, Macedonia ³ Faculty of Electrical Engineering, University in Belgrade, Serbia ⁴ Faculty of Electrical Engineering and Information Technologies, Macedonia
12	16:00 - 18:00 h	526 2.3	Optimal Vector Control for Wound Rotor Salient Pole Synchronous Motor Up to Base Speed ¹ Uzel D., ¹ Zeman K., ¹ Peroutka Z., ² Danek M. ¹ University of West Bohemia in Pilsen, Regional Innovation Centre for Electrical Engineering (RICE), Pilsen, Czech Republic ² CKD Elektrotechnika, a.s., Prague, Czech Republic

No.	Time	Paper Id/ Panel No	Paper Title
13	16:00 - 18:00 h	566 2.4	Stator Voltage Vector Direct Torque Control of Induction Machine ¹ Matic P., ² Rakic A., ³ Vukosavic S. ¹ Faculty of Electrical Engineering, University in Banja Luka, Republic of Srpska, Bosnia and Herzegovina ² Faculty of Electrical Engineering, University in Belgrade, Serbia
14	16:00 - 18:00 h	577 2.5	Analysis of the Drive for Horizontal Motion of a Crane Using a Laboratory Model Jeftenić I., Mihailović I., Jeftenić B. University of Belgrade, School of Electrical Engineering, Serbia
15	16:00 - 18:00 h	586 2.6	Un-Terminated Common-Mode EMI Model of DC-Fed Motor Drives Bishnoi H., Mattavelli P., Boroyevich D. Center For Power Electronics Systems, Virginia Tech, Blacksburg, United States
16	16:00 - 18:00 h	599 2.7	The Torque Ripple Reduction at the Drive with the Switched Reluctance Motor Fort J., Skala B., Kus V. University of West Bohemia, Czech Republic
17	16:00 - 18:00 h	679 2.8	Development and Implementation of an Algorithm for Calculating Angular Velocity of Main Arm of Human Centrifuge Vidakovic J., Ferenc G., Lutovac M., Kvirgic V. Lola Institute, Serbia

5 Sep. 2012, 16:00 – 18:00h,

Master Hall (Exhibition)

DS2b (T2): POWER ELECTRONICS CONVERTER TOPOLOGIES AND DESIGN (2)

Session Co-Chairs: Darko Marcetic, University of Novi Sad, Faculty of Technical Science, Novi Sad, Serbia
Vlado Porobic, University of Novi Sad, Faculty of Technical Science, Novi Sad, Serbia

No.	Time	Paper Id/ Panel No	Paper Title
1	16:00 - 18:00 h	505 2.9	Experimental Analysis on Precise Calorimetric Power Loss Measurement Using Two Chambers Itoh J., Nigorikawa A. Nagaoka University of Technology, Japan
2	16:00 - 18:00 h	510 3.1	A Novel 3 Level Bidirectional Buck Converter with a Wide Operating Range for a Hardware-In-The-Loop Test System Carstensen C., Biela J. Laboratory for High Power Electronic Systems, ETH Zürich, Switzerland
3	16:00 - 18:00 h	525 3.2	Comparative Evaluation of Buck and Hybrid Buck DC-DC Converters for Automotive Applications Muntean N., Cornea O., Pelan O., Lascu C. University "Politehnica" of Timisoara, Romania
4	16:00 - 18:00 h	535 3.3	Complete Design of Down-Scale Prototype of Mining Machine Converter Based on Four-Level Voltage-Source Converter with Flying Capacitors Kosan T., Molnar J., Streit L., Polacek L., Peroutka Z. Regional Innovation Centre for Electrical Engineering, Pilsen, Czech Republic
5	16:00 - 18:00 h	536 3.4	A Comprehensive Analysis of Inductors for Interleaved Buck Converter Sefa I., Balci S., Altin N., Ozdemir S. Gazi University, Turkey
6	16:00 - 18:00 h	557 3.5	High-Voltage High-Frequency Inverter Using 3.3kV SiC MOSFETs Lai R., Wang L., Sabate J., Elasser A., Stevanovic L. General Electric Global Research, United States
7	16:00 - 18:00 h	563 3.6	Analysis of Class D Series Resonant Inverter with a Switch-Controlled Capacitor and a Body Diode Kato C., Takegata M., Koizumi H. Tokyo University of Science, Japan
8	16:00 - 18:00 h	564 3.7	Design and Development of a PEBB for a Medium Voltage 8MVA IGCT Based Converter San-Sebastian J., Azurmendi J. M., Perez-de-Arenaza I., Rujas A., Etxeberria-Otadui I. IKERLAN-IK4 Technological Research Centre, Spain
9	16:00 - 18:00 h	568 3.8	A Multi-purpose Control and Power Electronic Architecture for Active Magnetic Actuators ¹ Bonfitto A., ² Botto G., ³ Chiaberge M., ¹ Suarez Cabrera L.D., ⁴ Tonoli A. ¹ Politecnico di Torino - Mechatronics Lab, Italy ² Istituto Superiore Mario Boella, Torino, Italy ³ Politecnico di Torino - Dept. of Electronics and Telecommunications ⁴ Politecnico di Torino - Dept. of Mechanical and Aerospace Engineering
10	16:00 - 18:00 h	626 3.9	Optimization of Current Sharing Between Two Inverter Bridges by Iterative Simulations ¹ Sasic B., ² Zivanov M., ³ Lazic M. ¹ Spellman High Voltage, United States ² University of Novi Sad, Faculty of Technical Sciences, Serbia ³ IRITEL Beograd, Serbia

No.	Time	Paper Id/ Panel No	Paper Title
11	16:00 - 18:00 h	663 4.1	Novel Modulation Method of a Three-Level Isolated Full-Bridge LLC Resonant DC-DC Converter for Wide-Output Voltage Application Canales F., Li T.H., Aggeler D. ABB, Baden-Daettwil, Switzerland
12	16:00 - 18:00 h	669 4.2	A Flexible Solid-State Pulsed Power Topology Davari P., Zare F., Ghosh A. Queensland University of Technology, Australia
13	16:00 - 18:00 h	677 4.3	Design of a Highly Efficient Bidirectional Isolated LLC Resonant Converter Hillers A., Christen D., Biela J. ETH Zurich, Laboratory for High Power Electronic Systems, Zurich, Switzerland
14	16:00 - 18:00 h	683 4.4	Review of Design Solutions for High Performance Pulsed Power Converters ¹ Cabaleiro Magallanes F., ¹ Aguglia D., ² Carlos De Almeida M., ² Viarouge P. ¹ CERN TE-EPC-FPC, Switzerland ² Laval University (LEEPCI Lab.), Canada
15	16:00 - 18:00 h	736 4.5	Active Damping Filter for High Bandwidth - Low Ripple Pulsed Converters ^{1,2} Cabaleiro Magallanes F., ^{1,2} Aguglia D., ² Alemida Martins C. D., ² Viarouge P. ¹ CERN - European Organization for Nuclear Research, Geneva, Switzerland ² LEEPCI Lab. - Laval University, Quebec, Canada,
16	16:00 - 18:00 h	483 4.6	Comparative Study of LED Ballasts for Different Light Regulation Techniques. ¹ Milashevski I., ² Tetervenok O., ² Suzdalenko A. ¹ Tallinn University of Technology, Estonia ² Riga Technical University, Riga, Latvia

5 Sep. 2012, 16:00 – 18:00h,

Master Hall (Exhibition)

DS2c (T3): CONTROL OF POWER ELECTRONICS CONVERTERS (1)

Session Co-Chairs: Darko Marcetic, University of Novi Sad, Faculty of Technical Science, Novi Sad, Serbia
Vlado Porobic, University of Novi Sad, Faculty of Technical Science, Novi Sad, Serbia

No.	Time	Paper Id/ Panel No	Paper Title
1	16:00 - 18:00 h	174 4.7	Hybrid Modulator for Power Converters in Parallel Topology Mon J., Gonzalez D., Balcells J., Gago J., Bogonez P. Universitat Politècnica de Catalunya, Spain
2	16:00 - 18:00 h	186 4.8	Compensation of Nonlinear Effects in Three-level Neutral-Point-Clamped Inverters Based on Field Oriented Control ¹ Meşe H., ² Ersak A. ¹ Aselsan Inc., Turkey ² Middle East Technical University Electrical and Electronics Engineering Department, Turkey
3	16:00 - 18:00 h	188 4.9	Analysis and Compensation of Nonlinear Effects in an Inverter with Power MOSFETs ¹ Büyükköse Ü., ² Ersak A. ¹ Aselsan Inc., Turkey ² Middle East Technical University Electrical and Electronics Engineering Department, Turkey
4	16:00 - 18:00 h	191 5.1	Control of an Induction Machine fed by an Indirect Matrix Converter with Unity Displacement Power Factor Operating with an Unbalanced AC-Supply ¹ Rivera M., ¹ Rodriguez J., ¹ Lopez M., ² Espinoza J. ¹ Universidad Tecnica Federico Santa Maria, Chile ² Universidad de Concepcion, Chile
5	16:00 - 18:00 h	192 5.2	A Simple Predictive Voltage Control Method with Unity Displacement Power Factor for Four-Leg Indirect Matrix Converters ¹ Rivera M., ¹ Rodriguez J., ¹ Garcia C., ² Peña R., ² Espinoza J. ¹ Universidad Tecnica Federico Santa Maria, Chile ² Universidad de Concepcion, Chile
6	16:00 - 18:00 h	204 5.3	Enhanced Model Predictive Voltage Control of Four-Leg Inverters with Switching Frequency Reduction for Standalone Power Systems ¹ Yaramasu V., ¹ Wu B., ² Rivera M., ² Rodriguez J., ¹ Ryerson University, Canada ² Universidad Tecnica Federico Santa Maria, Chile
7	16:00 - 18:00 h	210 5.4	Improvement of Burst-Mode Controlled Piezoelectric Transformers ¹ Liu Y., ^{1,2} Vasic D., ^{1,3} Costa F., ⁴ Schwander D. ¹ Lab. SATIE, ENS Cachan, France ² Université de Cergy-Pontoise, Neuville/oise, France ³ IUFM, Université Paris Est Créteil, St. Denis, France ⁴ CNES France, France
8	16:00 - 18:00 h	225 5.5	Comparison and Suppression of Conducted EMI in SiC JFET and Si IGBT Based Motor Drives Gong X., Ferreira J., Popović-Gerber J. Delft University of Technology, Netherlands
9	16:00 - 18:00 h	226 5.6	Power Loss Comparison of Different Matrix Converter Commutation Strategies Schulte T., Schröder G. University of Siegen, Germany

No.	Time	Paper Id / Panel No	Paper Title
10	16:00 - 18:00 h	306 5.7	Direct Voltage Control of DC-DC Boost Converters Using Model Predictive Control Based on Enumeration ¹ Karamanakos P., ² Geyer T., ¹ Manias S. ¹ National Technical University of Athens, Greece ² ABB Corporate Research, Baden-Dättwil, Switzerland
11	16:00 - 18:00 h	309 5.8	Direct Model Predictive Current Control of DC-DC Boost Converters ¹ Karamanakos P., ² Geyer T., ¹ Manias S. ¹ National Technical University of Athens, Greece ² ABB Corporate Research, Baden-Dättwil, Switzerland
12	16:00 - 18:00 h	320 5.9	Implementation of Voltage-to-Frequency Converter in Digital Based Control for Step-Down DC-DC Converter Milanovic M., Konjedic T., Truntic M. University of Maribor FERi, Slovenia
13	16:00 - 18:00 h	350 6.1	Two-Phase Space Vector Modulation of FOC Controlled ASM Fed by 2-Phase VSI Inverter ¹ Kascak S., ² Zaskalicky P., ¹ Dobrucky B., ¹ Prazenica M. ¹ University of Zilina, Slovakia ² Technical University of Kosice, Slovakia
14	16:00 - 18:00 h	400 6.2	Three-Level Hysteresis Current Regulation for a Three Phase Neutral Point Clamped Inverter Davoodnezhad R., Holmes G., McGrath B. RMIT University, Melbourne, Australia
15	16:00 - 18:00 h	440 6.3	Predictive One-Cycle Current Control of a Boost Converter Ruiz-Magaz G., Giral-Castillón R., Calvente-Calvo J., Vidal-Idiarte E., Romero-Nevado A. DEEEA/Universitat Rovira i Virgili, Spain
16	16:00 - 18:00 h	458 6.4	Standard FPGA-Based or Full cSoC Controllers for Three-Phase PWM Boost Rectifier, Two Viable Solutions ¹ Ben Said M., ¹ Hemdani A., ¹ Naour M., ² Monmasson E., ¹ Slama-Belkhdja I. ¹ Ecole Nationale des ingénieurs de Tunis (ENIT), Tunisia ² Université de Cergy Pontoise, France
17	16:00 - 18:00 h	646 6.5	A 30kW Transformer-Less PV NPC Inverter ¹ Crescimbin F., ¹ Lidozzi A., ¹ Rovelli E., ² Salvadore A., ¹ Solero L. ¹ University Roma Tre - DIMI, Italy ² Carlo Gavazzi Logistics, Italy
18	16:00 - 18:00 h	711 6.6	Thermal Regulation as Control Reference in Electric Drives ¹ Lo Calzo G., ¹ Lidozzi A., ¹ Solero L., ¹ Crescimbin F., ² Cardi V. ¹ University Roma Tre, DIMI, Italy ² Semikron, Italy
19	16:00 - 18:00 h	612 6.7	An Approach of Unified Voltage Correcting Algorithm for SVPWM Overmodulation Ilioudis V., Margaris N. Aristotle University of Thessaloniki, Electrical and Computer Engineering Department, Greece

5 Sep. 2012, 16:00 – 18:00h,

Master Hall (Exhibition)

DS2d (T11): POWER ELECTRONICS IN RENEWABLE ENERGY GENERATION

Session Co-Chairs: Darko Marcetic, University of Novi Sad, Faculty of Technical Science, Novi Sad, Serbia
Vlado Porobic, University of Novi Sad, Faculty of Technical Science, Novi Sad, Serbia

No.	Time	Paper Id / Panel No	Paper Title
1	16:00 - 18:00 h	201 6.8	Using the Grid-Side Converters of Renewable Energies for Ancillary Services Veszpremi K., Schmidt I. Budapest University of Technology and Economics, Hungary
2	16:00 - 18:00 h	258 6.9	Wind Turbine with Doubly Fed Induction Generator Operating at Limited Power Point ¹ Lazarov V., ¹ Stoyanov L., ¹ Zarkov Z., ² Notton G. ¹ Technical University of Sofia, Bulgaria ² University of Corsica "Pascal Paoli", France
3	16:00 - 18:00 h	291 7.1	The Development of a Real Time Wind Turbine Emulation for Microgrid Research Davies R., Sumner M., Christopher E. University of Nottingham, United Kingdom
4	16:00 - 18:00 h	332 7.2	Automated Methodology for Adjustment of Component Values in Passive Converter Circuit for Wind Turbine Generators ¹ van Den Bossche A., ² Marinov A., ² Yankov P., ² Bekov E.B. ¹ University of Gent, Belgium ² Technical University of Varna, Bulgaria
5	16:00 - 18:00 h	423 7.3	Dynamic Modelling of a 2 MW DFIG Wind Turbine for Converter Issues: Part 1 Fuchs F., Mertens A. Institute for Drive Systems and Power Electronics, Germany

No.	Time	Paper Id / Panel No	Paper Title
6	16:00 - 18:00 h	482 7.4	New Current Control Method for Grid-Connected Inverter of Domestic Power Plant ¹ Balázs G., ² Horváth M., ¹ Schmidt I. ¹ Budapest University of Technology and Economics, Department of Electric Power Engineering, Hungary ² DiFiLTON-ARC Ltd, Budapest, Hungary
7	16:00 - 18:00 h	637 7.5	Control Tuning Analysis of Small Wind Power Systems Cacciato M., Consoli A., Scarcella G., Scelba G. University of Catania, Italy
8	16:00 - 18:00 h	724 7.6	A New Maximum Power Point Tracking Technique for Wind Power Conversion Systems ¹ Niassati N., ² Mohseni M., ¹ Amiri H., ¹ Seyedtabaei K., ¹ Hajhosseini A. ¹ Department of Electrical & Computer Engineering, Shahid Beheshti University, Tehran, Iran ² School of Electrical and Computer Engineering, University College of Engineering, University of Tehran, Tehran, Iran
9	16:00 - 18:00 h	725 7.7	Vector Based Hysteresis Control for Self-Excited Induction Generators Sepsi T. D., Jardan R. K. Budapest University of Technology and Economics, Department of Automation and Applied Informatics, Hungary
10	16:00 - 18:00 h	750 7.8	Power Quality Improvement of Small Hydro Station Wisniewski J., Gorski D., Tepinski J., Koczara W. Warsaw University of Technology - Institute of Control and Industrial Electronics, Warsaw, Poland
11	16:00 - 18:00 h	266 7.9	Examination on Application of a Smart Grid Technology to Stations Watanabe Y., Kaito T., Okuda R., Minamoto M., Kurosawa N., Hayashiya H., Yoshizumi H. East Japan Railway Company, Japan

Gala Dinner

5 Sep. 2012, 19:30 – 24:00h,

Location: Hotel Park, Grand Ballroom

Variety of cuisine will be presented for different tastes and diets

EPE-PEMC Council Awards Ceremony:

The EPE-PEMC Council Awards Committee has decided that 2012 EPE-PEMC Council Award has been approved for:

- 1. Prof. Tore M. Undeland, Norway**
- 2. Prof. Grahame D. Holmes, Australia**

The Awards will be handed over by the President of EPE and the Chairman of the EPE-PEMC Council.

EPE 2013 ECCE Europe

Short announcement and presentation will be provided by Prof. Betty Lemaire-Semail, General Chair

PEMC 2014

Short announcement and presentation will be provided by Profr. Ilhami Colak, General Chair

Dance and music entertainment will be available.

- Folk Dance will be performed by "Sonja Marinkovic" Academic Cultural-Artistic Folk Ensemble.
- Entertainment: Music will be provided by "Apsolutno Romantico" musical band.

CONFERENCE - 6th September 2012 (Thursday)

Lecture sessions

6 Sep. 2012, 08:20 – 09:40h,

Hall 3

LS6a (T3): Control of power electronics converters

Session Co-Chairs: Karel Jezernik, University of Maribor, Slovenia
Eric Monmasson, Université de Cergy Pontoise, France

No.	Time	Paper Id	Paper Title
1	08:20 h	198	FPGA Based Control Strategy for the Reduction of Torque Ripple for PMSM Jezernik K., Rodic M., Horvat R. University of Maribor, Slovenia
2	08:40 h	418	Carrier-Based Modulation Strategy and It's Implementation for Indirect Matrix Converter Under Unbalanced Grid Voltage Conditions ¹ Liu X., ² Blaabjerg F., ¹ Loh P., ¹ Wang P. ¹ School of EEE, Nanyang Technological University, Singapore ² Institute of Energy, Aalborg University, Denmark
3	09:00 h	608	Effect of Sampling Space Vector Modulation in Speed Control Loops of Ultrahigh Speed Drives Stumpf P., Jordan R., Nagy I. Budapest University of Technology and Economics, Hungary
4	09:20 h	733	Digital Control of a Half-Bridge LLC Resonant Converter Buccella C., Cecati C., Latafat H., Razi K. University of L'Aquila, Italy

6 Sep. 2012, 08:20 – 09:40h,

Hall 4

LS6b (T5): PERMANENT MAGNET SYNCHRONOUS MOTOR DRIVES AND GENERATION SYSTEMS

Session Co-Chairs: Aleksandar Nikolic, Electrical Engineering Institute Nikola Tesla, Serbia
Vanja Ambrozic, University of Ljubljana, Faculty of Electrical Engineering, Slovenia

No.	Time	Paper Id	Paper Title
1	08:20 h	217	Deadbeat Predictive Current Control for PMSM Li N., Ming Y., Dian-guo X. Institute of Power Electronics and Electrical Drives, Harbin Institute of Technology, China
2	08:40 h	386	FPGA Permanent Magnet Synchronous Motor Floating-Point Models with Variable-DQ and Spatial Harmonic Finite-Element Analysis Solvers ¹ Dufour C., ¹ Cense S., ² Yamada T., ² Imamura R., ¹ Bélanger J. ¹ OPAL-RT Technologies, Montreal, Canada ² JSOL Corporation/ Engineering Technology Department, Tokyo, Japan
3	09:00 h	433	Adaptive Neural Speed Controller for PMSM Servodrive with Variable Parameters Pajchrowski T., Zawirski K. Poznan University of Technology, Poland
4	09:20 h	643	Different Control Schemes for Current Source Converters in Wind Applications ¹ Nikolic A., ² Jeftenic B. ¹ Electrical Engineering Institute Nikola Tesla, Serbia ² Faculty of Electrical Engineering, University of Belgrade, Serbia

6 Sep. 2012, 08:20 – 09:40h,

Hall 5

LS6c (T5): HAPTIC SYSTEMS AND ADVANCED DRIVE CONTROL ISSUES

Session Co-Chairs: Goce Arsov, Faculty of Electrical Engineering and Information Technologies, Macedonia
Sandor Halasz, Budapest University of Technology and Economics, Hungary

No.	Time	Paper Id	Paper Title
1	08:20 h	275	Hierarchical Bilateral Control for Haptic Systems with Different Degree-of-Freedom Ohnishi Y., Shimoichi T., Katsura S. Keio University, Department of System Design Engineering, Yokohama, Japan
2	08:40 h	422	Position Control of a 3 DOF Platform for Haptic Shape Rendering Zeng T., Lemaire-Semail B., Giraud F., Messaoudi M., Bouscayrol A. Université Lille1, L2EP, France
3	09:00 h	604	Drives and Control System for Paper-Board Cross Cutter ¹ Bebić M., ¹ Rašić N., ² Štatkčić S., ¹ Ristić L., ¹ Jevtić D., ¹ Mihailović I., ¹ Jeftenić B. ¹ University of Belgrade, EE Dept., Serbia ² Faculty of Technical Sciences, Kosovska Mitrovica, Serbia

6 Sep. 2012, 08:20 – 09:40h,

Hall 6

LS6d (T1): ADVANCES IN POWER SEMICONDUCTOR DEVICES, PACKAGING AND INTEGRATION

Session Co-Chairs: Dusan Graovac, Infineon AG, Neubiberg, Germany
 Petar Matic, University of Banja Luka, Faculty of Electrical Engineering, Banja Luka, BIH

No.	Time	Paper Id	Paper Title
1	08:20 h	182	Potential of New SLLIMM™-nano Intelligent Molded Module for Low Power Home Appliance Motor Drives Rubino B., Parisi C., Buonomo S. STMicroelectronics, Catania, Italy
2	08:40 h	388	Silicon Carbide Power Transistors, Characterization for Smart Grid Applications ¹ Tiwari S., ² Undeland T. M., ³ Basu S., ⁴ Robbins W. ¹ Wärtsilä, Trondheim, Norway ² Norwegian University of Science and Technology (NTNU), Trondheim, Norway ³ Bose Research PVT. Ltd, Bangalore, India ⁴ University of Minnesota, Minnesota, United States
3	09:00 h	437	Effect of the Miller-Capacitance During Switching Transients of IGBT and MOSFET Boehmer J., Schumann J., Eckel H. University of Rostock / Germany, Germany
4	09:20 h	512	High-Speed Gate Driver Design for Testing and Characterizing WBG Power Transistors Badawi N., Knieling P., Dieckerhoff S. Technical University of Berlin TUB, Germany

6 Sep. 2012, 10:00 – 11:40h,

Hall 3

LS7a (SS3): INTEGRATION OF RENEWABLE ENERGY SOURCES INTO ELECTRIC POWER SYSTEMS

Session Co-Chairs: Alex Stankovic, Tufts University, Medford, MA, United States
 Pablo Arboleya, University of Oviedo, Spain

No.	Time	Paper Id	Paper Title
1	10:00 h	436	Design and Optimization of LCL Filters for Grid-Connected Converters Meyer R., Mertens A. Leibniz Universität Hannover, Institute for Drive Systems and Power Electronics, Germany
2	10:20 h	595	Study of a Flyback-Based Stage as Grid Interface Topology for Micro-Generation Applications ¹ Garcia J., ² Dalla-Costa M., ³ Kirsten A., ¹ Gacio D., ¹ Quintana P. ¹ University of Oviedo, DIEECS, ce3i2, Spain ² Federal University of Santa Maria, GEDRE, Brazil
3	10:40 h	376	Annual Energy and Power Quality from an All-Electric Wave Energy Converter Array ¹ Sjolte J., ² Sørby B., ² Tjensvoll G., ³ Molinas M. ¹ Norwegian University of Science and Technology, Trondheim & Fred Olsen, Oslo, Norway ² Fred Olsen, Oslo, Norway ³ Norwegian University of Science and Technology, Trondheim, Norway
4	11:00 h	657	Research Laboratory for Grid Integration of Distributed Renewable Energy Resources - Integration Analysis of DERs - Fuchs F., Hoffmann N., Reese J., Wessels C., Lohde R., Grunau S., Gebhardt F. University of Kiel, Christian-Albrechts, Germany
5	11:20 h	633	A Hybrid Central-Distributed Control Applied to Microgrids with Droop Characteristic Based Generators Arboleya P., Gonzalez-Moran C., Coto M. University of Oviedo, Spain

6 Sep. 2012, 10:00 – 11:40h,

Hall 4

LS7b-1 (T5): INDUCTION MOTOR DRIVES

Session Co-Chairs: Greg Asher, University of Nottingham, United Kingdom
Dejan Raca, AMSC, Austria

No.	Time	Paper Id	Paper Title
1	10:00 h	455	Speed-Independent FCS-Model Predictive Torque Control for Induction Machine Based on Sliding Mode Observer ¹ Wang F., ¹ Kennel R., ¹ Stolze P., ² Davari S. A., ² Khaburi A.D. ¹ Technical University of Munich, Germany ² Iran University of Science and Technology, Iran
2	10:20 h	583	Field-Oriented Control of an Induction Machine with Winding Asymmetries ¹ Lešić V., ¹ Vašak M., ¹ Gulin M., ¹ Perić N., ² Joksimović G., ³ Wolbank T. ¹ University of Zagreb, Faculty of Electrical Engineering and Computing, Croatia ² University of Montenegro, Faculty of Electrical Engineering, Podgorica, Montenegro ³ University of Vienna, Faculty of Electrical Engineering and Information Technology, Austria
3	10:40 h	674	Adaptive Flux Observer for Induction Machines with On-Line Estimation of Stator and Rotor Resistances ¹ Savoia A., ² Maria Verrelli C., ¹ Mengoni M., ¹ Zarri L., ¹ Tani A., ¹ Casadei D. ¹ University of Bologna, Italy ² University of Rome "Tor Vergata", Italy

6 Sep. 2012, 10:00 – 11:40h,

Hall 4

LS7b-2 (T13): ACTIVE FILTERS AND POWER FACTOR CORRECTION

Session Co-Chairs: Pavol Bauer, Delft University of Technology, Dept. of Electrical Sustainable Energy, Netherlands
Jiri Pavelka, Czech Technical University in Prague, Faculty of Electrical Engineering in Prague, Czech Republic

No.	Time	Paper Id	Paper Title
4	11:00 h	216	Nonlinear Inductors for Active Power Factor Correction Circuits Stadler A., Gulden C., Stolzke T. STS Spezial-Transformatoren Stockach GmbH & Co. KG (R&D Center), Germany
5	11:20 h	721	A Novel Power Factor Correction Utilizing Input/Output Voltage Waveforms Sampling Niassati N., Amiri H., Jahanmahin M., Moradi R., Hajihosseini A. Department of Electrical & Computer Engineering, Shahid Beheshti University, Tehran, Iran

6 Sep. 2012, 10:00 – 11:40h,

Hall 5

LS7c (T11): RENEWABLE ENERGY GENERATION

Session Co-Chairs: Dragan Jovcic, University of Aberdeen, School of Engineering, United Kingdom
Ilhami Colak, Gazi University, Faculty of Technology, Turkey

No.	Time	Paper Id	Paper Title
1	10:00 h	184	Series Compensated Open-winding PM Generator Wind Generation System Pan D., Lipo T. University of Wisconsin-Madison, United States
2	10:20 h	340	Wind Turbine Generation System with Simple Rectifier Using MERS in Current Link Topology Wind Farm Kawaguchi T., Sakazaki T., Isobe T., Shimada R. Tokyo Institute of Technology, Japan
3	10:40 h	406	Fault Tolerance of a 10 MW, 100 kV Transformerless Offshore Wind Turbine Concept with a Modular Converter System Gjerde S., Undeland T. Norwegian University of Science and Technology (NTNU), Norway
4	11:00 h	413	A Grid Connected Inverter with Switched Capacitor Inverter Using Series/Parallel Conversion Tsunoda A., Hinago Y., Koizumi H. Tokyo University of Science, Japan
5	11:20 h	686	A Testbed for Experimental Validation of a Low-Voltage DC Nanogrid for Buildings Cvetkovic I., Dong D., Zhang W., Jiang L., Boroyevich D., Lee F., Mattavelli P. CPES - Virginia Tech, United States

6 Sep. 2012, 10:00 – 11:40h,

Hall 6

**LS7d (T12): POWER ELECTRONICS IN STATIC POWER
GENERATION AND ENERGY STORAGE**

Session Co-Chairs: Pat Wheeler, University of Nottingham, School of Electrical and Electronic Engineering, United Kingdom
Petar Grbovic, HUAWEI Technologies Dueseldorf GmbH, Germany

No.	Time	Paper Id	Paper Title
1	10:00 h	195	Interface Converters for Ultra-capacitor Applications in Power Conversion Systems ¹ Grbovic P., ² Delarue P., ³ Le Moigne P. ¹ HUAWEI Technologies, Germany ² Université des Sciences et Technologies de Lille, France ³ Ecole Centrale de Lille, France
2	10:20 h	367	Single-Phase Grid-Connecting Converter Based on a MERS Soft-Switching Concept for Renewable Energy and Energy Storage ¹ Isobe T., ² Kato K., ² Kojima N., ¹ Shimada R. ¹ Tokyo Institute of Technology, Japan ² MERSTech Inc., Japan
3	10:40 h	382	Modular DAB Converter System Driving DEAP Transducers Eitzen L., Graf C., Maas J. Ostwestfalen-Lippe University of Applied Sciences, Germany
4	11:00 h	451	Three-Port Power Electronic System for Energy Storage and Recovery Using a Parallel Connection of a Power Factor Corrector Boost and a Dual Active Bridge Rodriguez A., Vazquez A., G. Lamar D., Hernando M. M. Universidad de Oviedo, Spain
5	11:20 h	680	Impact of Interleaving on Input Passive Components of Paralleled DC-DC Converters for High Power PV Applications Zhang X., Mattavelli P., Boroyevich D. CPES Virginia Tech, United States

6 Sep. 2012, 12:00 – 13:00h,

Hall 3

**LS8a (ISS-16): POWER ELECTRONICS IN BIOMEDICAL APPLICATIONS:
ARTIFICIAL HEART**

Session Co-Chairs: Predrag Pejovic, University of Belgrade, Belgrade, Serbia
Boguslaw Grzesik, Silesian University of Technology, Poland

No.	Time	Paper Id	Paper Title
1	12:00 h	543	Topology of TET System with Soft Switched Converters Grzesik B., Stepien M. Silesian University of Technology, Poland
2	12:20 h	444	Analysis of Coils Equivalent Parameters for Biomedical TET Applications Grzesik B., Stepien M. Silesian University of Technology, Poland
3	12:40 h	685	BLDC-Control of Forces in Passive Magnetic Bearings in Blood Pump Stepien M., Grzesik B. Silesian University of Technology, Poland

6 Sep. 2012, 12:00 – 13:00h,

Hall 4

LS8b (SS1): NEW INVERTER CONTROLS (2)

Session Co-Chairs: Atsuo Kawamura, Yokohama National University, Japan
Lazhar Ben-Brahim, Qatar University, Qatar

No.	Time	Paper Id	Paper Title
1	12:00 h	288	Fault Ride Through Capability of 100kHz Single Phase Utility Interactive Inverter with FPGA Based Hardware Controller Hanashima Y., Yokoyama T. Tokyo Denki University, Japan
2	12:20 h	307	A Novel Wireless EV Charger Using SiC Single-Ended Quasi-Resonant Inverter for Home Use ¹ Omori H., ¹ Iga Y., ¹ Morizane T., ¹ Kimura N., ¹ Nakagawa K., ² Nakaoka M. ¹ Osaka Institute of Technology, Japan ² Kyungnam University, Republic of Korea
3	12:40 h	321	Single Phase Utility Interface Inverter Based on Digital Hysteresis Current Controller – Operational Characteristics Both Grid-Connected Mode and Islanding Mode – Ichikawa R., Funato H. Utsunomiya University, Japan

6 Sep. 2012, 12:00 – 13:00h,

Hall 5

LS8c (ISS-04): PHOTOVOLTAIC SYSTEMS FOR BUILDING INTEGRATION AND SUSTAINABLE MOBILITY

Session Co-Chairs: Giovanni Spagnuolo, University of Salerno, Department of Electronic Engineering and Computer Science, Italy
Giovanni Petrone University of Salerno, Department of Electronic Engineering and Computer Science, Italy

No.	Time	Paper Id	Paper Title
1	12:00 h	313	DCM Operation of Interleaved DC/DC Converters for PV Applications ¹ Ramos Paja C., ² Petrone G., ² Spagnuolo G. ¹ Universidad Nacional de Colombia Sede Medellin, Colombia ² University of Salerno, Dep. of Electronic Eng. and Computer Science, Italy
2	12:20 h	315	A Compact DC/DC Converter for DMPPT in Applications to Sustainable Mobility ¹ Ramos Paja C., ² Manganiello P., ² Petrone G., ² Spagnuolo G. ¹ Universidad Nacional de Colombia Sede Medellin, Colombia ² University of Salerno, Department of Electronic Eng. and Computer Science, Italy
3	12:40 h	414	A Phase-shifted Carrier-Based PWM Technique for Cascaded H-bridge Inverters Application in Standalone PV System Boonmee C., Kumsuwan Y. Chiang Mai University, Faculty of Engineering, Thailand

6 Sep. 2012, 12:00 – 13:00h,

Hall 6

LS8d (ISS-05): SUPPLYING WIDEBAND RF POWER AMPLIFIERS (2)

Session Co-Chairs: Dragan Maksimovic, University of Colorado at Boulder, CoPEC center, ECE Dep, United States
Javier Sebastian, University of Oviedo, Electronic Power Supply Systems Group, Spain

No.	Time	Paper Id	Paper Title
1	12:00 h	495	Survey of Architectures and Optimizations for Wide Bandwidth Envelope Amplifier Vasic M., Garcia O., Oliver J. A., Alou P., Cobos J. A. Universidad Politécnica de Madrid, Centro de Electrónica Industrial, Spain
2	12:20 h	556	A Design-Oriented Optimization Framework for Envelope Trackers: Application to a Sliding-mode Control Buck Converter for EDGE ¹ Marco L., ¹ Poveda A., ¹ Guinjoan F., ² Maksimovic D., ¹ Alarcon E. ¹ UPC BarcelonaTech, EPIC group, Spain ² University of Colorado at Boulder, CoPEC center, ECE Dep, United States
3	12:40 h	592	Power Supply Modulation for RF Applications Bräckle A., Rathgeber L., Siegert F., Heck S., Berroth M. University of Stuttgart, Institute of Electrical and Optical Communications Engineering, Germany

Closing and Awards Sessions

6 Sep. 2012, 14:00 – 14:40h,

Location: Grand Hall

Session Co-Chairs:

Vladimir Katic, General Chair of the EPE-PEMC 2012 ECCE Europe, Serbia

Dushan Boroyevich, Co-Chair of the EPE-PEMC 2012 ECCE Europe, USA

Prof. Istvan Nagy, PEMC Council Chair, Hungary

Jean-Luc Thomas, President of the EPE Association, Belgium

EPE-PEMC Best Paper Award Ceremony

Best paper awards will be given to the 6 best ranked papers according to reviewers and session co-chairs grades – 3 awards for senior and 3 for student authors.

Awards will be handed over by Prof. Marian Kazmierkowski, EPE-PEMC Awards Committee Chairman

EPE 2013 ECCE Europe Lille, France, as the next venue of EPE conference will be presented:

- A short presentation and invitation to the conference will be given by Prof. Betty Lemaire-Semail, General Chair.
- The ECCE Europe flag will be handed over by Prof. Vladimir Katic, General Chair of EPE-PEMC 2012 ECCE Europe Conference to Prof. Betty Lemaire-Semail, General Chair of EPE 2013 ECCE Europe Conference.

PEMC 2014, Antalya, Turkey, as the next venue of PEMC conference will be presented:

- A short presentation and invitation to the conference will be given by Prof. Ilhami Colak, General Chair of PEMC 2014 Conference.
- The PEMC STICK will be handed over by Prof. Vladimir Katic, General Chair of EPE-PEMC 2012 ECCE Europe Conference to Prof. Ilhami Colak, General Chair of PEMC 2014 Conference.

Key-note Sessions

6 Sep. 2012, 14:40 – 15:20h,

Location: Grand Hall

KEY-NOTE SESSION 6

Session Co-Chairs:

Emil Levi, Liverpool John Moors University, Liverpool, U.K.

Aleksandar Prodic, University of Toronto, Canada

FREQUENCY DOMAIN ANALYSIS OF SWITCHING POWER CONVERTERS

dr. Grahame Holmes

RMIT University, Australia



Abstract:

The concept of frequency domain analysis using Fourier decomposition is central to an understanding of the modulation processes for a switched power converter. The origins of these concepts derive from Bennett in the 1930's and Black in the early 1950's, with their application to switched power converters emerging during the 1970's. Double Fourier series analysis is now generally accepted as the most powerful strategy available to understand the modulation processes of both two level and multilevel switched conversion systems. More recently, it has also been shown how a frequency domain representation of phase leg switching functions can be used in a substantially wider context than just converter modulation analysis.

This presentation will illustrate how the fundamental principles of Double Fourier frequency decomposition can be used to exactly analyse the operation of switched conversion systems under a wide variety of operating conditions and applications. A number of examples will be presented to demonstrate the power and capability of the approach, including Pulse Width Modulation using sub-integer carrier-fundamental pulse ratios, optimised harmonic cancellation for a variety of multilevel converter topologies, intermediate DC Link voltage balancing for multilevel converters, and an elegant way to analyse the transient response of a bi-directional DC-DC converter. The presentation will show how frequency domain analysis is a most effective way of understanding the complexity of operation of a switched power converter system.

6 Sep. 2012, 15:20 – 16:00h,

**Location: Grand Hall
KEY-NOTE SESSION 7**

Session Co-Chairs:

Emil Levi, Liverpool John Moors University, Liverpool, U.K.
Aleksandar Prodic, University of Toronto, Canada

**POWER SEMICONDUCTOR DEVICES AN ENABLING
TECHNOLOGY FOR RELIABLE AND EFFICIENT POWER
CONVERTERS - TECHNOLOGY AND CHALLENGES**

dr. Leo Lorenz,
Director of ECPE, Germany
Senior director (retired), Infineon Technologies, Germany



Abstract:

Power semiconductor devices are a driving technology for energy efficiency, E-Mobility and Renewables. The major electrical improvement of the new generation of power devices is coming from the overall silicon utilization. Based on this idea the technology Roadmap follows a chip horizontal optimization (higher cell densities) and a vertical optimization to minimize the drift layer and reduce the bulk substrate material significantly. This power device mainstream technology development is applied to all device types such as the IGBT, Fast Recovery Diode, Super Junction Transistor and low voltage MOSFET.

The reliability and ruggedness of these new power semiconductors is driven by an advanced chip interfacing and packaging technology. However it has to be considered that the application engineer is faced with new challenges of how to manage all the parasitic, thermal management and circuit set up.

Dialogue Sessions

6 Sep. 2012, 16:00 – 18:00h,

Master Hall (Exhibition)

DS3a (T8): POWER ELECTRONICS IN ROAD VEHICLES

Session Co-Chairs: Veran Vasic, University of Novi Sad, Faculty of Technical Science, Serbia
Djura Oros, University of Novi Sad, Faculty of Technical Science, Serbia

No.	Time	Paper Id/ Panel No	Paper Title
1	16:00 - 18:00 h	185 1.1	The Single Stator Dual Rotor PMSM for HEV: Two Windings and 4 Leg Inverter Control Tutelea L. N., Boldea I., Deaconu S. I. Politechnica University of Timisoara, Romania
2	16:00 - 18:00 h	506 1.2	Analysis of Electronic Differential for Electric Kart Vitols K., Galkin I. Riga Technical University, Latvia

6 Sep. 2012, 16:00 – 18:00h,

Master Hall (Exhibition)

**DS3b (T10): POWER ELECTRONICS IN TRANSMISSION
AND DISTRIBUTION**

Session Co-Chairs: Veran Vasic, University of Novi Sad, Faculty of Technical Science, Serbia
Djura Oros, University of Novi Sad, Faculty of Technical Science, Serbia

No.	Time	Paper Id / Panel No	Paper Title
1	16:00 - 18:00 h	207 1.3	Grid Integration of Offshore Superconducting Wind Turbine Generators Quéval L., Ohsaki H., Sekino M. The University of Tokyo, Japan
2	16:00 - 18:00 h	236 1.4	Assessment of a Stability Analysis Tool for Constant Power Loads in DC-grids Sanchez S., Molinas M. Norwegian University of Science and Technology, Trondheim, Norway

No.	Time	Paper Id / Panel No	Paper Title
3	16:00 - 18:00 h	285 1.5	Voltage Balancing Characteristics for a Cascaded H-bridge Multi-level StatCom Employing Space Vector Modulation ¹ Townsend C., ² Cox S.M., ² Watson A.J., ¹ Summers T., ¹ Betz R., ² Clare J.C. ¹ University of Newcastle, Australia ² University of Nottingham, United Kingdom
4	16:00 - 18:00 h	311 1.6	Experimental Verification of Power Fluctuation Compensation in Microgrid by Use of Heat Pump Air Conditioning System ¹ Kawachi S., ¹ Hagiwara H., ¹ Baba J., ² Shimoda E., ² Furukawa K., ³ Nitta T. ¹ The University of Tokyo, Japan ² Shimizu Corporation, Japan ³ Meisei University, Japan
5	16:00 - 18:00 h	318 1.7	Comparison of L-VSC and LCL-VSC Converter for HVDC Transmission Zhang L., Jovcic D. University of Aberdeen, United Kingdom
6	16:00 - 18:00 h	331 1.8	High Power IGBT-Based DC/DC Converter with DC Fault Tolerance Jovcic D., Zhang J. University of Aberdeen, United Kingdom
7	16:00 - 18:00 h	336 1.9	Voltage Control of Induction Generator Powered Distributed System Using a New Reactive Power Compensator SVC-MERS Cheng M., Shiojima D., Isobe T., Shimada R. Tokyo Institute of Technology, Tokyo, Japan
8	16:00 - 18:00 h	399 2.1	Analysis of the Static Reactive Power Compensator Operating in Mode of Load Balancing Kiseliov M., Tserkovskiy Y. National Research University "Moscow Power Engineering Institute", Russian Federation
9	16:00 - 18:00 h	470 2.2	Residential Photovoltaic Power Conditioning System with Module Integrated DC-DC Converters Kryukov K., Valiev M. National Research University "Moscow Power Engineering Institute", Russian Federation
10	16:00 - 18:00 h	555 2.3	Current Distortion Improvement for Power Compensation with Bi-Directional Inverter in DC-Distribution System Wu T., Kuo C., Sun K., Chang Y. National Chung Cheng University, Taiwan
11	16:00 - 18:00 h	571 2.4	Investigation of the Effects of Nonlinear Model of Super-Capacitors in Local DC Microgrids Supplied by Renewables Rakos B., Stumpf P., Nagy I. Budapest University of Technology and Economics, Hungary
12	16:00 - 18:00 h	576 2.5	Power Factor Correction and Harmonic Mitigation Based on Phase Shifting Approach Reljic D., Vasic V., Oros D. University of Novi Sad, Faculty of Technical Sciences, Serbia
13	16:00 - 18:00 h	590 2.6	AC Arc Fault Detection Based on Mahalanobis Distance Xiaochen C., Li W., Qiangang S., Zhen M., Nanjing University of Aeronautics and Astronautics, China
14	16:00 - 18:00 h	256 2.7	A Variable Multi-Rate Plug-In Repetitive Controller for Single-Phase Inverters Operating in the Islanding Mode ¹ Gonzalez-Espin F., ² Mattavelli P., ³ Figueres E., ³ Garcera G., ¹ Foley R. ¹ United Technologies Research Center (UTRC-I), Cork, Ireland ² Center for Power Electronics Systems, United States ³ Universitat Politecnica de Valencia, Spain
15	16:00 - 18:00 h	284 2.8	Transformer-Less Series Voltage Injection for Reactive Power Compensation of Line-Commutated HVDC Jafar M., Molinas M. Norwegian University of Science & Technology, Norway
16	16:00 - 18:00 h	314 2.9	High-Power-Density Versatile DC-DC Converter for Environmentally Friendly Data Centre Hayashi Y. NTT Facilities, Japan
17	16:00 - 18:00 h	456 3.1	Power Flow Control of Interlinked Hybrid Microgrids ¹ Nutkani I. U., ¹ Loh P. C., ² Blaabjerg F. ¹ School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore, Singapore ² Department of Energy Technology, Aalborg University, Denmark
18	16:00 - 18:00 h	466 3.2	Modular Multilevel Converter: Theoretical Analysis and Capacitor Voltage Ripple Effects on the Modulating Signals ¹ Marchesoni M., ² Bordignon P., ¹ Parodi G., ¹ Vaccaro L. ¹ University of Genova, Italy ² Rongxin Power Electronic Co., Ltd, China
19	16:00 - 18:00 h	699 3.3	Design and Optimal Sizing of Hybrid PV/Wind/Diesel System with Battery Storage by Using DIRECT Search Algorithm Lu Z., Barakat G., Yassine A. University of Le Havre, France
20	16:00 - 18:00 h	620 7.7	Comparisons between a Series and a Shunt FACTS for Tapping and Power Flow Control in Half-Wavelength Transmission Lines Aredes M., Dias R. F. S.140 Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil

6 Sep. 2012, 16:00 – 18:00h

Master Hall (Exhibition)

DS3c (T3): CONTROL OF POWER ELECTRONICS CONVERTERS (2)

Session Co-Chairs: Veran Vasic, University of Novi Sad, Faculty of Technical Science, Serbia
Djura Oros, University of Novi Sad, Faculty of Technical Science, Serbia

No.	Time	Paper Id/ Panel No	Paper Title
1	16:00 - 18:00 h	490 3.4	One-Sensor Current Sharing in Multiphase Interleaved DC/DC Converters with Coupled Inductors Schroeder J., Petersen M., Fuchs F. University of Kiel, Institute of Power Electronics and Electrical Drives, Germany
2	16:00 - 18:00 h	460 3.5	Direct-Flux Vector Control of Induction Motor For Light Traction ¹ Nicolae M., ² Bojoi I., ¹ Nicolae P. ¹ Electrical Eng., Energetics and Aeronautics Dept., University of Craiova, Romania ² Dipartimento di Energia, Politecnico di Torino, Italy
3	16:00 - 18:00 h	570 3.6	DC Components and Subharmonics of Carrier-Based PWM Halasz S. Budapest University of Technology and Economics, Hungary
4	16:00 - 18:00 h	614 3.7	Predictive Control of A Direct AC/AC Matrix Converter power supply Under Non-Linear Load Conditions Yusoff S., De Lillo L., Zanchetta P., Wheeler P. University of Nottingham, United Kingdom
5	16:00 - 18:00 h	622 3.8	A Switched Model Predictive Control Formulation for Flying Capacitor Converters ¹ Aguilera R. P., ² Lezana P., ¹ Quevedo D. E. ¹ The University of Newcastle, Australia ² Universidad Tecnica Federico Santa Maria, Chile
6	16:00 - 18:00 h	632 3.9	Space Vector Analysis of Dead-Time Voltage Distortion in Multiphase Inverters Grandi G., Loncarski J. University of Bologna, Dept. of Electrical Engineering, Italy
7	16:00 - 18:00 h	717 4.1	Current Controlled-Based Modulation Strategies for Common-Mode Voltage Mitigation in PWM Inverters-Fed AC Motor Drive Systems ¹ Hoseini S. K., ¹ Adabi J., ¹ Sheikholeslami A., ² Nami A. ¹ Noshirvani University of Technology, Iran ² ABB Corporate Research, Sweden
8	16:00 - 18:00 h	734 4.2	Predictive Load Voltage and Capacitor Balancing Control for a Four-Leg NPC Inverter ¹ Rivera M., ¹ Rodriguez J., ² Yaramasu V., ² Wu B. ¹ Universidad Tecnica Federico Santa Maria, Chile ² Ryerson University, Toronto, Canada
9	16:00 - 18:00 h	737 4.3	Algorithm for Efficiency Optimization of the Boost Converter in Wind Turbine Ivanovic Z., Blanusa B., Knezic M. University of Banja Luka, Faculty of Electrical Engineering, Bosnia and Herzegovina
10	16:00 - 18:00 h	742 4.4	The Use of Feedback Quantizer PWM for Shaping Inverter Noise Spectrum Mirzaeva G., Goodwin G. The University of Newcastle, Australia
11	16:00 - 18:00 h	250 4.5	Research Concerning Appropriate PFC Methods for Classic CFL Lighting Devices ¹ Teodosescu P., ¹ Bojan M., ² Fodor D., ¹ Marschalko R. ¹ Technical University of Cluj, Romania ² University of Pannonia, Veszprém, Hungary
12	16:00 - 18:00 h	358 4.6	A Voltage-Sensorless PFC Voltage Double Yamamoto J., Miyashita O., Yoshida T. Tokyo Denki University, Japan

6 Sep. 2012, 16:00 – 18:00h,

Master Hall (Exhibition)

DS3d (T12): POWER ELECTRONICS IN NON-ROTATING POWER GENERATION AND ENERGY STORAGE

Session Co-Chairs: Veran Vasic, University of Novi Sad, Faculty of Technical Science, Serbia
Djura Oros, University of Novi Sad, Faculty of Technical Science, Serbia

No.	Time	Paper Id/ Panel No	Paper Title
1	16:00 - 18:00 h	202 4.7	Interfacing Constraints of Distributed Maximum Power Point Tracking Converters in Photovoltaic Applications Husari J., Suntio T. Tampere University of Technology/Department of Electrical Energy Engineering, Finland

No.	Time	Paper Id/ Panel No	Paper Title
2	16:00 - 18:00 h	268 4.8	A New Switched-Inductor Quasi-Z-Source Inverter Topology ^{1,4} Ismeil M.A., ^{2,3} Kouzou A., ¹ Kennel R., ³ Abu-Rub H., ⁴ Orabi M. ¹ Technical University of Munich, Department of Electrical Drive Systems and Power Electronics, Germany ² Djelfa University, Electrical Department, Djelfa, Algeria ³ University at Qatar Doha, Texas A & M, Qatar ⁴ South Valley University, Faculty of Engineering, Aswan, Egypt
3	16:00 - 18:00 h	292 4.9	DC-DC Conditioning System for FC Application Milanovic M., Rodic M., Truntic M. University of Maribor FERI, Slovenia
4	16:00 - 18:00 h	295 5.1	Application of a New 600 V GaN Transistor in Power Electronics for PV Systems Hensel A., Wilhelm C., Kranzer D. Fraunhofer Institute for Solar Energy Systems ISE, Freiburg, Germany
5	16:00 - 18:00 h	310 5.2	Single-Stage Low Cost Grid Connected Inverter in Photovoltaic Energy Applications ¹ Petreus D., ¹ Daraban S., ¹ Ciocan I., ¹ Patarau T., ² Morel C. ¹ Technical University of Cluj Napoca, Romania ² Grande École d'Ingénieurs Généralistes en Électronique, Informatique, Télécoms et Réseaux, France
6	16:00 - 18:00 h	515 5.3	Comparison of a Three and Four Phase Interleaved Bidirectional DC/DC-Converter for the Operation in an Energy Storage System in Wind Turbines Grunau S., Fox M., Fuchs F. Christian-Albrechts-University of Kiel, Germany
7	16:00 - 18:00 h	569 5.4	The Usage of Supercapacitors for Energy Storage Systems in the DC-Link of Machine Tools ¹ Neugebauer R., ² Winternheimer S., ³ Kolesnikov A., ¹ Richter M. ¹ Fraunhofer Institute for Machine Tools and Forming Technology, Germany ² University of Applied Sciences of Saarland, Germany ³ Chemnitz University of Technology/Institute for Machine Tools and Production Processes, Germany
8	16:00 - 18:00 h	688 5.5	Integrated DC/DC Converters for High Step-Up Voltage Gain Applications ¹ Dreher J.R., ² Marangoni F., ² Ortiz J.L.R., ³ da Silva Martins M., ⁴ Camara H. T. ¹ Federal Institute of Santa Catarina, IFSC, Chapeco, Brazil ² Federal University of Technology - Parana, UTFPR, Pato Branco, Brazil ³ Federal University of Santa Maria, UFSM, Santa Maria, Brazil ⁴ Control Engineering Department, Danfoss Drives, Grasten, Denmark

6 Sep. 2012, 16:00 – 18:00h,

Master Hall (Exhibition)

DS3e (T14): EDUCATION

Session Co-Chairs: Veran Vasic, University of Novi Sad, Faculty of Technical Science, Serbia
Djura Oros, University of Novi Sad, Faculty of Technical Science, Serbia

No.	Time	Paper Id/ Panel No	Paper Title
1	16:00 - 18:00 h	156 5.6	A Virtual Laboratory for Teaching Frequency Estimation Techniques ¹ Tomić J., ¹ Slankamenac M., ² Kušljević M., ¹ Živanov M. ¹ University of Novi Sad, Faculty of Technical Sciences, Serbia ² Termoelektro Enel AD, Serbia
2	16:00 - 18:00 h	158 5.7	Tackling with Problems of Programming in LRTME Nemec M. University of Ljubljana, Faculty of Electrical Engineering, Slovenia
3	16:00 - 18:00 h	177 5.8	Extracurricular Learning Program for Professional Skills Development in Engineering Schools Gonzalez D., Grifol E., Mudarra M., Serrano P. Universitat Politècnica de Catalunya, Spain
4	16:00 - 18:00 h	214 5.9	Description of Learning Methods Using Six-Dimensional Space Framework ¹ Brindfeldt E., ² Müür M., ² Pettai E. ¹ Tallinn Industrial Education Centre, Estonia ² Tallinn University of Technology, Estonia
5	16:00 - 18:00 h	252 6.1	Implementation of an Interactive Laboratorz Platform for Stepper Motor Experiments ¹ Irmak E., ¹ Çolak İ., ² Kabalıcı E., ¹ Köse A. ¹ Gazi University, Faculty of Technology, Turkey ² Nevşehir University, Vocational College of Haci Bektas Veli, Turkey
6	16:00 - 18:00 h	446 6.2	Course on Electric Vehicles for Students and Industry ¹ Rojko A., ² Bauer P. ¹ University of Maribor, Faculty of electrical engineering and computer science, Slovenia ² Delft University of Technology, Dept. of Electrical Sustainable Energy, Netherlands

No.	Time	Paper Id/ Panel No	Paper Title
7	16:00 - 18:00 h	457 6.3	Simulation of a Photovoltaic Conversion System Using Energetic Macroscopic Representation Lhomme W., Delarue P., Giraud F., Lemaire-Semail B., Bouscayrol A. Lille1 University, France
8	16:00 - 18:00 h	459 6.4	Simulation of a Wind Energy Conversion System Using Energetic Macroscopic Representation Bouscayrol A., Delarue P., Guillaud X., Lhomme W., Lemaire-Semail B. Université Lille1, France
9	16:00 - 18:00 h	497 6.5	Mechatronic Design and Control of Rotary Flexible Joint Ileš Š., Ivančić A., Matuško J., Kolonić F. University of Zagreb, Faculty of Electrical Engineering and Computing, Croatia
10	16:00 - 18:00 h	518 6.6	Implementation of FPGA Based LED Dimmer Control as Practical Workshop for Students of Power Electronics Avotins A., Suzdalenko A., Galkins I. Riga Technical University, Latvia
11	16:00 - 18:00 h	524 6.7	Platform for DSP Analysis in Power Engineering Education Kokolanski Z., Dimcev V., Taskovski D. Faculty of Electrical Engineering and Information Technologies, Macedonia
12	16:00 - 18:00 h	565 6.8	Microcontroller Based Electrical Machines Training Set ¹ Bayındır R., ² Kabalıcı E., ¹ Kaplan O., ¹ Öz Y. ¹ Gazi University, Turkey ² Nevşehir University, Turkey

6 Sep. 2012, 16:00 – 18:00h,

Master Hall (Exhibition)

DS3f (T15): RELATED TOPICS

Session Co-Chairs: Veran Vasic, University of Novi Sad, Faculty of Technical Science, Serbia
Djura Oros, University of Novi Sad, Faculty of Technical Science, Serbia

No.	Time	Paper Id/ Panel No	Paper Title
1	16:00 - 18:00 h	223 6.9	Experimental Verification of Single-Phase PLL with Novel Two-Phase Generator for Grid-Connected Converters Lubura S., Soja M., Lale S., Ikić M. The Faculty of Electrical Engineering East Sarajevo, Bosnia and Herzegovina
2	16:00 - 18:00 h	247 7.1	Analytical Modeling of Parasitic Capacitances for a Planar Common Mode Inductor in EMI filters ¹ Tan W., ¹ Margueron X., ² Idir N. ¹ Ecole Centrale de Lille, L2EP, France ² Université Lille 1, L2EP, France
3	16:00 - 18:00 h	259 7.2	Impact of Initial Conditions on Hysteretic Behavior of the Boost Converter Pelin D., Ručević M., Vulin D. Faculty of Electrical Engineering Osijek, Croatia
4	16:00 - 18:00 h	348 7.3	Charge Carrier Extraction IGBT Model for Circuit Simulators Schumann J., Eckel H. University of Rostock, Germany
5	16:00 - 18:00 h	360 7.4	Automated Generation of a FPGA-Based Oversampling Model of Power Electronic Circuits Kiffe A., Geng S., Schulte T. Hochschule Ostwestfalen-Lippe, University of Applied Sciences, Germany
6	16:00 - 18:00 h	553 7.5	Performance of Energy Harvesting Circuits for Piezoelectric Generator Under Weak Vibration Nishiyama H., Koizumi H. Tokyo University of Science, Japan
7	16:00 - 18:00 h	582 7.6	Comprehensive Modeling and practical Verification of Grid Connected VSI with LCL Filter Hoff B., Sulkowski W. Narvik University College, Norway