MONDAY, JUNE 16th

PLENARY SESSION

08:55 10708 A Novel Control Concept for Reliable Operation of a Three-Phase Three-Switch Buck-Type Unity Power Factor Rectifier with Integrated Boost Output Stage under Heavily Unbalanced Mains Condition
   Baumann, M, Kolar, JW

09:20 11185 A High Power Density DC/DC Converter for High Power Distributed Power Systems
   Canales, F, Barbosa, P, Aguilar, C, Lee, F

09:45 10852 High-Performance Induction Motor Speed Control Using Exact Feedback Linearization with State and State Derivative Feedback
   Boukas, TKB, Habetler, TGH

MODELING AND SIMULATION

10:40 10216 Semiconductors & power layout: new challenges for the optimization of high power converter
   Pasterczyk, R, Martin, C, Schanen, JL

11:05 10907 A NEW TESTING TOOL FOR POWER ELECTRONIC DIGITAL CONTROL
   Lentijo, S., Monti, A., Santi, E., Welch, C., Dougal, R.

11:30 11096 Large Time-Scale Electro-Thermal Simulation for Loss and Thermal Management of Power Device
   Lee, J., Cho, Bo

ENERGY STORAGE

10:40 10073 Strategy for Active Power Sharing in a Fuel-Cell-Powered Charging Station for Advanced Technology Batteries
   Jiang, Z, Dougal, R

11:05 10882 COMBINING BATTERIES AND ULTRACAPACITORS FOR VEHICLE LOAD LEVELING
   Schupbach, R M, Balda, J C

11:30 11027 Multi-modular Current-Source Based Hybrid Converter for SMES
   Li, J, Cheng, KWE, Xu, D, Sutanto, D
**POWER QUALITY ISSUES 1**

10:40 10704 Hybrid control in an island-mode multi-inverter system  
Liang, J, Green, T.G, Weiss, G., Zhong, Q.C

11:05 10881 Flexible development and test system for 11kW wind turbine  
Teodorescu, R, Iov, F, Blaabjerg, F

11:30 11157 Effects of Parasitic Parameters on EMI Filter Performance  
Wang, S, Lee, F.C, Chen, D.Y, Odendaal, W.G

**NEUTRAL-POINT CLAMPED INVERTERS**

10:40 10413 Synchronized Overmodulation Techniques for the Neutral-Clamped Inverters  
Oleschuk, V., Bose, B.K

11:05 10442 NATURAL BALANCING OF NEUTRAL-POINT-CLAMPED CONVERTERS UNDER POD PULSEWIDTH MODULATION  
Salagae, IM, Mouton, H

11:30 10610 Effects of Imbalances and Nonlinear Loads on the Neutral-Point Balance of a Three-Level Converter  
Pou, J., Boroyevich, D., Pindado, R.

**DC/DC AUTOMOTIVE APPLICATIONS**

10:40 10222 High-Power Density Bi-directional DC/DC Converter Topology for Future Automobiles  
Walter, J.W, De Doncker, R.W

11:05 10605 DC/DC Multi – Input Converter Topologies for Hybrid Vehicles with Fuel Cells  
Consoli, A., De Caro, S., Testa, A., Walsh, M., Scarcella, G.

11:30 10791 A Novel Compact DC/DC Converter for 42 V Systems  
Peng, F.Z, Zhang, F., Powell, K.S

**SYNCHRONOUS RECTIFIERS & VRMS**

13:30 10116 A low-complexity, high-performance digital control architecture for Voltage Regulator Modules  
Saggini, S., Ghioni, M., Geraci, A.

13:55 10571 An Interleaved Three-Level Forward Converter --Suitable For the Application of Voltage Regulator Module (VRM)  
Liang, X, Wei, J, Ruan, X
14:20  10789  Multiphase Voltage Regulator Module with Self-Driven Synchronous Rectification
   Visairo, H., Rodríguez, E., Cobos, J.A, Alou, P.

14:45  11114  A two stage Voltage Regulator Module with fast transient response capability
   Alou, P., Cobos, J.A, Prieto, R., Garcia, O., Uceda, J.

INVERTER MODULATION TECHNIQUES
13:30  10055  Optimal Pulse Width Modulation for Three-Level Inverters
   Brueckner, T, Holmes, D G

13:55  10139  Control Techniques of Multilevel Voltage Source Inverters
   Massoud, A.M, Finney, S.J, Williams, B.W

14:20  10213  Synchronisation of Distributed PWM Cascaded Multilevel Inverters with Minimal
   Harmonic Distortion and Common Mode Voltage
   Loh, PC, Holmes, DG, Lipo, TA

14:45  10280  EXPERIMENTAL RESULTS OF A THREE-LEVEL VOLTAGE SOURCE INVERTER
   WITH DOUBLE Hysteresis-BAND CURRENT CONTROL AND HYBRID PWM-
   SVM VOLTAGE CONTROL
   Lafoz, M., Iglesias, I.J, Portillo, S.

NEW SEMICONDUCTOR TECHNOLOGIES
13:30  10257  Development and Demonstration of Silicon Carbide (SiC) Motor Drive Inverter Modules
   CHANG, H-R, HANNA, E, RADUN, A.

13:55  10617  Silicon Carbide Power MOSFET Model and Parameter Extraction Sequence
   McNutt, T, Hefner, A, Mantooth, A, Berning, D, Ryu, SH

14:20  10849  GaN-Based JFETs and Diodes as Power Switching Devices
   Rhee, SH, Park, C, Hong, S, Day, T, Chapman, PL, Krein, PT, Kim, K

14:45  10932  Large Area GaN HEMT Power Devices for Power Electronic Applications: Switching
   and Temperature Characteristics
   Zhang, N.Q, Mehrotra, V, Chandrasekaran, S, Moran, B, Shen, L, Mishra, U, Etzkorn, E,
   Clarke, D,

PMSM DRIVES
13:30  10485  PMSM Servo System With Speed And Torque Observer
   Xu Dianguo, X, Wang Hong, W, Shi Jingzhuo, Sh

13:55  10519  DIRECT STATOR FLUX LINKAGE CONTROL TECHNIQUE FOR A PERMANENT
MAGNET SYNCHRONOUS MACHINE
LLOR, A., RETIF, JM., LIN-SHI, X., ARNALTE, S.

14:20  10657  Precision Speed Control of PMSM using Disturbance Observer and System Parameter Compensator
        Jongsun, JK

14:45  11009  Cancellation of Torque Ripple due to Nonidealities of Permanent Magnet Synchronous Machine Drives
        Wu, AP, Chapman, PL

PASSIVE COMPONENTS
13:30  10444  Reduced FEA-Based State-Space Modeling of Stationary Magnetic Devices
        Owens, JD, Chapman, PL

13:55  10806  Filters with Inductance Cancellation using PCB Transformers
        Neugebauer, T.C, Perreault, D.J

14:20  10822  Modeling and Analysis of integrated magnetic components
        Njien.de, H., Froehkleke, N., Cronje, W.

14:45  10913  Stranded Wire With Uninsulated Strands as a Low-Cost Alternative to Litz Wire
        Tang, Xu, Sullivan, C.R

PASSIVE COMPONENTS (cont.)
15:40  11066  Integration of EMI Filter for Distributed Power System (DPS) Front-end Converter
        Chen, R, Wang, S, van Wyk, JD, Odendaal, WG

16:05  11123  COMPARISON OF DIFFERENT TECHNOLOGIES TO DEVELOP INDUCTORS FOR LOW-POWER, LOW-VOLTAGE DC/DC CONVERTER MODULES
        Prieto, MJ, Pernía, AM, Lopera, JM, Díaz, J, Martín, JA

16:30  10409  A New Method to Design Piezoelectric Transformer used in MOSFET & IGBT Gate Drive Circuits
        VASIC, D, COSTA, F, SARRAUTE, E

DIGITAL TECHNIQUES IN MOTOR DRIVES
15:40  10591  Analysis and Implementation of a New PFC Digital Control Method
        Zhang, W, Feng, G, Liu, Y-F, Wu, B

16:05  10728  Compact DSP Application For A 100kW DC Power Supply
Güldner, H., Wolf, H., Losansky, J.

16:30  10235  Application of Genetic Algorithms in EKF for speed Estimation of an Induction Motor
cai, L., Zhang, Y.H, zhang, Z.C

POWER LINE CONDITIONERS

15:40  10446  Experimental Verification of an Active Power Line Conditioner with a Fuzzy Logic
        Switch Controller
        Kirawanich, P, O'Connell, R

16:05  10674  TRANSFORMERLESS 1-PHASE ACTIVE POWER LINE CONDITIONERS
        Strzelecki, RS, Meckien, GM, Jarnut, MJ, Benysek, GB

16:30  11131  An Unified Scheme and Respective Algorithms for the Control of DC-Linked Double
        Converters in an Universal Power Quality Controller
        Liu, J, He, Y, Ye, Y

INVERTER MODULATION TECHNIQUES (cont.)

15:40  10453  A DSP Peripheral for Three-Level Inverter Space Vector PWM Modulation?
        Li, S, Xu, L

16:05  10722  Constant frequency current modulation algorithm based on linkage flux
        Carmeli, M.S, Castelli-Dezza, F., Superti-Furga, G.

16:30  10770  A NEW CARRIER-BASED DISCONTINUOUS PWM MODULATION
        METHODOLOGY FOR FOUR-LEG VOLTAGE SOURCE INVERTERS
        Ojo, O, Kshirsagar, P

SYNCHRONOUS RECTIFIERS & VRMS (cont.)

15:40  10148  Switching Loss Contributions of Synchronous Rectifiers in VRM applications
        Tolle, T, Duerbaum, T, Elferich, R

16:05  10340  New Switching Control for Synchronous Rectifications in Low-Voltage Paralleled
        Converter System without Voltage and Current Fluctuations

16:30  11140  A General Concept to Eliminate Body Diode Loss in Synchronous Rectifiers
        Xu, M, F.C, Lee
TUESDAY, JUNE 17th

DC/DC CONVERTERS 1

08:30 10080 Freewheeling Current in Push-Pull Forward Converter
Zhang, F, Qin, H, Wang, H, Yan, Y

08:55 10101 Analysis of a Hybrid Phase Modulated Converter with a Current Doubler Rectifier in Discontinuous Conduction Mode
Surend, R, Mohan, Ned, Ayyanar, R, Button, R

09:20 10422 A Comparison of AC/DC Piezoelectric Transformer Converters with Current Doubler and Voltage Doubler Rectifiers
Ivensky, G., Bronstein, S., Ben-Yaakov, S.

09:45 11037 HOW THE NEW SPARC TOPOLOGIE CAN REDUCE THE SIZE OF PASSIVE FILTER
LEQUEU, T., KALVELAGE, G., AUBIN, P.

FUEL CELL APPLICATIONS

08:30 10454 Development And Control Of A 400W Alkaline Fuel Cell Power Conditioner
Rocco, T, Duke, R, Round, S

08:55 10599 Fuel Cell Powered UPS Systems: Design Considerations
Choi, W, Howze, Jo, Enjeti, P

09:20 10956 Structure Optimization of the Fuel Cell Power Electric Drive System
Yuwen, Y, Zhu, Z, Jiang, J

09:45 11142 A Current-Fed High Frequency Link Direct DC/AC Converter with Active Harmonic Filter for Fuel Cell Applications
Song, Y, Chung, S, Enjeti, P

SRM DRIVES

08:30 10007 Modeling Simulation and Performance Analysis of Switched Reluctance Motor Operating with Optimum Value of Fixed Turn-On and Turn-Off Switching Angles
Akhter, H E, Chandra, A, Al-Haddad, K, Sharma, V K

08:55 10351 Position Sensorless Control of Synchronous Reluctance Motors with Extended Kalman Filter
09:20  10786  AN AUTO-CALIBRATING MODEL FOR SWITCHED RELUCTANCE MOTOR DRIVES: APPLICATION TO DESIGN AND CONTROL
Edrington, C S, Fahimi, B

09:45  11016  Precise Analytical Modelling Magnetic Characteristics of Switched Reluctance Motor Drives Using Two-dimensional Least Squares
Xue, XD, Cheng, KWE, HO, SL

INTEGRATION, PACKAGING & MODULES

08:30  10158  High Temperature, High Power Density Packaging for Automotive Applications
Gerber, M, Ferreira, J A, Hofsajer, I, Seliger, N

08:55  10833  Integrated Power Electronics Modules for 600V/10A Motor-Drive Applications Using Flip-Chip Flex-Circuit Technology
Xiao, Y., Shah, H., Chow, T.P, Rymaszewski , E.J, Gutmann, R.J

09:20  10981  A New Smart Power Module for Very Low Power Drive Applications
Kim, MK, Chung, DW, Suh, BS, Kim, TH

09:45  11015  High Density Integrated Electromagnetic Power Passives with Vertical Interconnect and Stacked Structure
Liu, W., van Wyk, J., Odendaal, W.

POWER QUALITY ISSUES 2

08:30  10173  A New On-Line Single-Phase to Three-Phase UPS Topology with Reduced Number of Switches
Bekiarov, S, Emadi, A

08:55  10221  Buck-Boost Push-Pull High Power Factor Electronic Ballast
Seidel, AR, Bisogno, FE, Paiva, RCD, Marchesan, TB, Prado, RN

09:20  10757  A New Topology of Fault-current Limiter and Its Parameters Optimization
LU, Z, JIANG, D, WU, Z

09:45  10767  Bidirectional Switch for a Solid State Tap changer
Bauer, P, Schoevaars, R

POSTER SESSION

10:40
### BOOST CONVERTERS

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<th>Session ID</th>
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<tbody>
<tr>
<td>13:55</td>
<td>10876</td>
<td>A Modular Power Electronics Instructional Laboratory</td>
<td>Balog, R, Krein, P T</td>
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<tr>
<td>14:20</td>
<td>10915</td>
<td>Peak Current-Mode Control for a Boost Converter Using an 8-bit Microcontroller</td>
<td>Dake, H, Nelms, R</td>
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<td>14:45</td>
<td>11056</td>
<td>Dual Mode Control of Tri-state Boost Converter</td>
<td>Viswanathan, K, Oruganti, R, Srinivasan, D</td>
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### LAMP & BALLASTS

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<tr>
<td>13:55</td>
<td>10440</td>
<td>Solution to the warm up problems on HID Sodium Lamp Ballasts controlled by Resonant Current</td>
<td>Rodriguez, FRV, Avila, JAH</td>
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<tr>
<td>14:45</td>
<td>10754</td>
<td>Use of Swinging Inductors to Improve the Dimming Characteristics of Frequency-Controlled Dimmable Electronic Ballasts</td>
<td>Lee, S, Chung, H, Hui, S</td>
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### POWER QUALITY IMPROVEMENT TECHNIQUES.

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<th>Title</th>
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<tr>
<td>13:30</td>
<td>10322</td>
<td>A Filter Bank Solution for Active Power Filter Control Algorithms</td>
<td>Sozanski, K</td>
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<td>13:55</td>
<td>10393</td>
<td>A Robust Multilevel Hybrid Compensation System for 25kV Electrified Railway Applications</td>
<td>Tan, P C, Loh, P C, Holmes, D G</td>
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<td>14:20</td>
<td>10776</td>
<td>Current Regulation for a Series Active Filter Integrated with a Diode Rectifier</td>
<td>le Roux, AD, Mouton, HdT, Akagi, H</td>
</tr>
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</table>
14:45  10809  MULTILEVEL VOLTAGE SOURCE POWER QUALITY CONDITIONER  
Strzelecki, RS, Jarnut, MJ, Benysek, GB

3 PHASE AC/DC CONVERTERS

13:30  10060  'Sensorless' Control of 4-Quadrant-Rectifiers for Voltage Source Inverters (VSI)  
Kennel, R, Linke, M, Szczupak, P

13:55  10136  Space Vector Modulation and Control of a Unidirectional Three-Phase-Level/Switch  
VIENNA I Rectifier with LCL-type AC filter  
Viitanen, T, Tuusa, H

14:20  10338  Lagrangian Modeling and Passivity-Based Control of Three-Phase AC/DC  
Voltage-Source Converters  
Lee, T.

14:45  10802  A Three-Phase Three-Switch Two-Level PWM Rectifier  
Deivis Borgonovo, DB, Yales Romulo de Novaes, YN, Ivo Barbi, IB

DIRECT TORQUE CONTROL

13:30  10436  Constant frequency Torque and Flux controllers for Direct Torque Control of  
Induction Machines  
Idris, NRN, Toh, CL, Yatim, AHM, Mohamad, ND

13:55  10474  A Unified Flux and Torque Control Method for DTC-based Induction-Motor Drives  
Ryu, JH, Lee, KW, Lee, JS

14:20  10725  Hysteresis Band Determination of Direct Torque Controlled Induction Motor Drives  
With Torque Ripple and Motor-Inverter Loss Considerations  
Kaboli, Sh, Zolghadri, M

14:45  10753  Hybrid Space Vector Pulse Width Modulation Based Direct Torque Controlled Drive  
for Induction Motor  
Udayar, S M, Fernandes, B G

BOOST CONVERTERS (cont.)

15:40  10197  Complete Digital Control Method for PWM DCDC boost converter  
Kranz, Ch

16:05  10513  A Zero-Current and Zero-Voltage-Switching PWM Boost Full-Bridge Converter  
ZHOU, L, RUAN, X
16:30 10696  A Step-Down Conversion Concept for a PWM-mode Boost Converter
Schimpfle, C., Kirchner, J.

LAMP & BALLASTS (cont.)

15:40 10759  Low Cost Power Control for LCC Series-Parallel Inverters with Resonant Current Mode Control for HID Lamps
Cardesín, J., Alonso, M., Corominas, E., Calleja, A., Ribas, J., Rico-Secades, M., García, J.

16:05 10194  Difference-Integral Dimming Controller for the Single-Stage Back-Lighting Electronic Ballast
Lin, L., Pki, P.

16:30 10666  A Comparative Study of Random Switching Schemes for Eliminating Visible Striations in Fluorescent Lamps
Lee, S, Chung, H, Hui, S

POWER QUALITY IMPROVEMENT TECHNIQUES (cont.)

15:40 10916  Digital control of a single-phase shunt active filter
Griño, R, Costa-Castello, R, Fossas, E

16:05 11078  A Novel Comprehensive Compensator for Electrified Railway System
Wang, Yue, Wang, ZA, Yang, Jun

16:30 11079  A New Hybrid Parallel Active Filter
Wang, Yue, Wang, ZA, Yang, Jun

3 PHASE AC/DC CONVERTERS (cont.)

15:40 10807  Nonlinear Control Technique for three-phase boost AC/DC Power Converter
Kaletsanos, Ath, Xepapas, F, Xepapas, S, Manias, S

16:05 10813  Theoretical and Experimental Analysis of Cascade Control Schemes for a Three-Phase Three-Switch Buck-Type AC-to-DC PWM Converter System
Nussbaumer, T., Kolar, J.W

16:30 10970  A half-power rating improved 3-phase six-switch boost rectifier using two half controlled configurations with a common DC bus
Panda, D., Lipo, T.A
EMI & CM CURRENTS

15:40  10561  Suppression of Conducted EMI in Four-Quadrant AC Drive System  
        Kempski, A., Strzelecki, R., Smolenski, R.

16:05  10596  Minimization and Cancellation of Common-Mode Currents, Shaft Voltages and  
        Bearing Currents for Induction Motor Drives  
        Mei, C, Balda, J.C, Waite, W.P, Carr, K.

16:30  11057  Fast EMI prediction method for three-phase Inverter based on Laplace Transforms  
        Revol, B., Roudet, J., Loizelet, P.
WEDNESDAY, JUNE 18th

CONTROL ISSUES IN DC/DC CONVERTERS

08:30  10324  Pulse Train™, a Novel Digital Control Method, Applied to a Discontinuous Conduction Mode Flyback Converter  
Telefus, M, Shteynberg, A, Ferdowsi, M, Emadi, A

08:55  10537  A Novel Quasi-Constant Frequency Hysteretic Current Mode Control Approach  
Yang, X, Wang, Z.A

09:20  10609  Effects of closed-loop control on HF interactions reduction within Distributed Power Systems  
Alkayal M.Fisal, MFK, Crebier Jean Cristophe, JCC

09:45  10741  Fast-Response Load Regulation of DC-DC Converter By means of Reactance Switching  
Senanayake, T, Ninomiya, T

INVERTERS FOR PV SYSTEMS

08:30  10858  Optimized Design of a Single-Phase Inverter for Photovoltaic Applications  
Kjaer, S B, Blaabjerg, F, Pedersen, J K

08:55  10866  Synthesis and Modulation of Single Phase DC/AC Converter with High Frequency Isolation in Photovoltaic Energy Applications  
Beristáin, J., Velasco, G., Gilabert, A., Bordonau, J.

09:20  10901  A DC/AC Converter For Single-Phase Grid-Connected Photovoltaic Systems  
Souza, K., Castro, M., Antunes, F.

09:45  11008  A Sinusoidal Pulse Width Modulated (SPWM) Inverter using Three-Winding High-Frequency Flyback Transformer for Small Scale Solar Photovoltaic Power Conditioner System  
Chandhaket, SC, Konishi, YK, Nakaoka, MN, Ogura, KO

POWER CIRCUIT MODELING

08:30  10427  A Unified SPICE Compatible Model for Large and Small Signal Envelope Simulation of Linear Circuits Excited by Modulated Signals  
Lineykin, S, Ben-Yaakov, S
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<tr>
<td>08:55</td>
<td>10588</td>
<td>Three-Dimensional Animations of Power-Electronics Circuits Visualize Voltage and Current</td>
<td>Sullivan, CR</td>
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<td>09:20</td>
<td>10947</td>
<td>Unified Flyback Switching-Cell Model Including the Leakage Inductance Effects For SPICE Simulation</td>
<td>Rustom, K., Qiu, W., Batarseh, I.</td>
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<td>09:45</td>
<td>10993</td>
<td>Switching Parameter Maps - a new approach to the validity domain of power device models</td>
<td>Garrab, H., Mi, W., Ammous, K., Allard, B., Morel, H., Bergogne, D.</td>
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### AC VOLTAGE REGULATION

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<tr>
<td>08:30</td>
<td>10621</td>
<td>Optimal Control Technique for AC VRM In High Frequency AC Power Distribution Systems</td>
<td>Qiu, MQ, Jain, PJ</td>
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<td>08:55</td>
<td>10658</td>
<td>Adaptive Perceptron Based A Generalized Algorithm for Voltage Disturbance Mitigation in The Distribution System</td>
<td>Elnady, A, Kazerani, M, M. A. Salama, M.</td>
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<td>09:20</td>
<td>10673</td>
<td>An Efficient Control of the Series Compensator for Sag Mitigation and Voltage Regulation</td>
<td>Marei, M.I, El-Saadany, E.F, Salama, M.M</td>
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<td>09:45</td>
<td>10688</td>
<td>Control and Testing of a Dynamic Voltage Restorer (DVR) at Medium Voltage Level</td>
<td>Nielsen, JG, Newman, MJ, Nielsen, HO, Blaabjerg, F</td>
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### MATRIX CONVERTERS

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<tr>
<td>08:30</td>
<td>10695</td>
<td>New Modulation Strategy for a Matrix Converter with a Very Small Mains Filter</td>
<td>Mueller, SM</td>
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<td>08:55</td>
<td>10788</td>
<td>Fast Commutation Processes and Demand of Bidirectional Switches in Matrix Converters</td>
<td>Adamek, J., Hofmann, W., Ziegler, M.</td>
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<td>09:20</td>
<td>10958</td>
<td>Analysis and Comparison of AC-AC Matrix Converter Control Strategies</td>
<td>Apap, M, Wheeler, PW, Clare, JC, Bradley, KJ</td>
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<td>09:45</td>
<td>11031</td>
<td>Investigation of Dual-bridge Matrix Converter Operating under Unbalanced Source Voltages</td>
<td>Wei, L, Lipo, T.A, Matsushita, Y</td>
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CONTROL ISSUES IN DC/DC CONVERTERS (cont.)
Digitally controlled converter with dynamic change of control law and power throughput
Nesgaard, C

11:05 10647 A Low-Cost Configurable PWM Controller Using Programmable System-On-Chip
Li, Q

11:30 10887 Stability Analysis of Linear-Non Linear Control (LnLc) Applied To Fast Transient Response DC-DC Converters

INVERTER MODELING
10:40 10142 Application of a Sinusoidal Internal Model to Current Control of Three Phase Utility Interface Converters
Fukuda, SF, Imamura, RI

11:05 10517 Natural Balance of Multicell Converters
Wilkinson, RH, Meynard, TA, Mouton, HdT

11:30 10906 Direct Modeling of Envelope Dynamics in Resonant Inverters
Yin, Y, Zane, R, Erickson, R, Glaser, J

SNUBBERS & RELATED ISSUES
10:40 10212 Constrained Power Converter Optimization with Improved Core Loss Formulation
Cooke, PR, Schmidt, S

11:05 10370 New Snubbers with Energy Recovery into a Local Power Supply
Ivensky, G, Zeltser, I, Ben-Yaakov, S

11:30 10697 Application of Common-soure Active-Clamp Circuit to Various DC-DC Converters Topologies
Shoyama, M, Li, G, Ninomiya, T

AC VOLTAGE REGULATION
10:40 10835 PWM Line Voltage Regulator with Integrated PFC
Rossetto, L., Buso, S.

Application of Zig-Zag Transformers in a three-wire three-phase Dynamic Sag
11:05 10912 Corrector System
Bhadkamkar, A, Bendre, A, Schneider, R, Kranz, W, Divan, D
Next Generation Distribution Transformer: To Address Power Quality for Critical Loads
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MONITORING & DIAGNOSTICS
Parameter Monitoring of High-frequency Electronically Operated Discharge Lamp Systems
Qiu, DY, Hui, SYR, Chung, SH

Stator Winding Fault Detection for an Induction Motor Drive Using Actuator as Sensor Principle
Aguayo, J, Claudio, A, Vela, L.G, Lesecq, S, Barraud, A

A MODEL-IN-THE-LOOP INTERFACE TO REPRESENT MACHINE/DRIVE DYNAMICS IN A HARDWARE-BASED DC DISTRIBUTION TESTBED
Zhu, W, Pekarek, S, Jatskevich, J, Wasynczuk, O

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Negative Output Super-Lift Luo-Converters
Luo, F.L, Ye, H., Rashid, M.H

A New High Static Gain Non-Isolated DC-DC Converter
Gules, R., Pfitscher, L., Franco, L.

A NOVEL MULTI-PHASE INTERLEAVING ISOLATED DC/DC CONVERTER
Zhou, J, Xu, M, Lee, F C

A THREE LEVEL DOUBLE-ENDED FORWARD CONVERTER
Coelho, KD, Barbi, I

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A New Non-Linear Control Strategy for the Boost Inverter
Vazquez, N, Cortes, D, Hernandez, C, Alvarez, J, Arau, J, Alvarez, Jq

A Wireless Load Sharing Controller to Improve Dynamic Performance of Parallel-Connected UPS Inverters
Guerrero, J.M, Garcia de Vicuña, L., Matas, J., Miret, J., Castilla, M.

DYNAMIC DIGITAL CONTROL SCHEMES FOR THREE-PHASE UPS
Uys, JJ, Beukes, HJ
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<tr>
<td>14:45</td>
<td>10694</td>
<td>Optimal Regulator with Integral Action and Gain-Scheduling for the Comprehensive Control of Three-Level VSI</td>
<td>Alepuz, SA, Salaet, JS, Gilabert, AG, Bordonau, JB, Peracaula, JP</td>
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**INDUCTION MOTOR CONTROL**

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<tr>
<td>13:30</td>
<td>10627</td>
<td>Optimal Speed Tracking Control of Induction Motor Using Artificial Intelligence Techniques</td>
<td>Rahmouni, M, Lachiver, G</td>
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<tr>
<td>13:55</td>
<td>10135</td>
<td>Indirect Field Oriented Control for High Performance Induction Motor Drives Using Space Vector Modulation with consideration of Core Loss</td>
<td>Mohammad Abdul Mannan, Toshiaki Murata, Junji Tamura, Takeshi Tsuchiya</td>
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<tr>
<td>14:45</td>
<td>10493</td>
<td>Speed Sensorless Stator Flux-Oriented Control of Induction Motor in the Field Weakening Region Using Luenberger Observer</td>
<td>Kuen, T S, Shin, M H, Hyun, D S</td>
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**RECTIFIERS & AC/AC CONVERTERS 1**

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<tr>
<td>13:30</td>
<td>10205</td>
<td>Modulation Method for a Multiple Drive System based on a Two-Stage Direct Power Electronic Conversion Topology with reduced Input Current Ripple</td>
<td>Klumpner, C., Blaabjerg, F.</td>
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<tr>
<td>13:55</td>
<td>10225</td>
<td>A Novel Control Approach to the DC Active Power Filter Used in a Low Ripple and Large Stable/Pulse Power Supply</td>
<td>Xiao, G.C, Pei, Y.Q, Li, K., Wang, Z.A</td>
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<tr>
<td>14:20</td>
<td>10564</td>
<td>Self-Switching and Protected Converters : New Cells Synthesis</td>
<td>Roux, NR, Richardeau, FR, Foch, HF</td>
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<tbody>
<tr>
<td>14:45</td>
<td>10903</td>
<td>Power Factor Correction Using a Series Active Filter</td>
<td>Pan, Z, Wang, S, Peng, F</td>
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**POWER QUALITY ISSUES 3**

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<th>Time</th>
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<tr>
<td>13:30</td>
<td>10880</td>
<td>Application of Compensators for Non-Periodic Currents</td>
<td>Tolbert, L M, Xu, Y, Chen, J, Peng, F Z, Chiasson, J N</td>
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<tbody>
<tr>
<td>13:55</td>
<td>11075</td>
<td>A Novel Control Strategy for Power Active Filter Based on Modal Analysis of</td>
<td></td>
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Power distribution system
Saitou, M, Takeshita, T, Matsui, N

14:20 11111 A Novel Technique For Optimising Harmonics And Reactive Power With Load Balancing Under Non-Sinusoidal Supply And Unbalanced Load Conditions
Agarwal, V, George, S

14:45 10312 A New Complementary Method to Instantaneous Inactive Power Compensation
Tavakoli Bina, M.

RECTIFIERS & AC/AC CONVERTERS 1 (cont.)

15:40 10943 Average Modeling of a Hexagon Transformer and Rectifier
Tinsley, CT, Caire, R, Boroyevich, D

16:05 10249 Low Peak Current Class E Resonant Full-Wave Low dv/dt Rectifier Driven by a Square-Wave Voltage Generator
Birca-Galateanu, S

16:30 10431 Analysis of Common Mode EMI for Three-Phase Voltage Source Converters
Zhang, R, Wu, W, Wang, T

INDUCTION MOTOR CONTROL (cont.)

Soshin, KS, Okamura, YO, Tarek, AT, Nakaoka, MN

16:05 10844 Digital Synchronous Frame Current Regulation for Dual-Three Phase Induction Motor Drives
Bojoi, R, Profumo, F, Tenconi, A

16:30 10123 MEMBERSHIP FUNCTION DISTRIBUTION EFFECT ON FUZZY LOGIC CONTROLLED INDUCTION MOTOR DRIVE
Zhao, Jin, Bose, B.K

INVERTER CONTROL ISSUES (cont.)

15:40 10507 Control of Single-Phase Parallel-Connected Inverters: Fixed-Frequency Quasi-Sliding Mode Control Approach, and FPGA-based Implementation
Ramos, R., Biel, D., Fossas, E., Guinjoan, F.

16:05 10944 A Novel Load Sharing Control Technique for Paralleled Inverters
Jingtao, Tan, Jianping , Y
Redundant Parallel Control for Current Regulated Inverters with Instantaneous Current Sharing
Xing, Y, Huang, L.P, Yan, Y.G

DC/DC CONVERTERS (cont.)

15:40 10888 The Fast Response Double Buck DC-DC Converter (FRDB)

16:05 10896 A HV Input High Frequency Non-Isolated DC/DC Converter
Guo, J

16:30 10908 A Novel Power Distribution System Using a Central Buck-Based Current Source for Multiple Individually Regulated Outputs
CHAKRABORTY, S, JAIN, A.K, MOHAN, NED

ALTERNATIVE ENERGY RESOURCES

15:40 10307 Efficiency Comparison for Microturbine Power Conditioning Systems

16:05 10634 Design of Large Air-Gap Transformers for Wireless Power Transmission
O'Brien, K, Scheible, G, Gueldner, H

16:30 10587 Control of an Optimized Power Flow in Wind Power Plants with Doubly-Fed Induction Generators
Rabelo, B., Hofmann, W.
THURSDAY, JUNE 19th

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08:30  10713  Precision Position Control of Brushless DC Motor without Shaft Transducer  
        Park, K H, Kim, T S, Ahn, S C, Hyun, D S

08:55  10895  Control Design For A High Performance Amplitude/Phase Modulated Digital-To-Synchro Switching Power Converter  
        Liu, C., Smith, C., Lai, J., Black, J.

09:20  11182  Design of a Closed-Loop Controller for Mitigation of Torque Ripple in a Brushless DC Machine  
        Beccue, P, Neely, J, Pekarek, S, Benavides, N, Ortbals, M, Stutts, D

09:45  10864  Fundamental Aspects of Ripple Correlation Control of Electric Machinery  
        Wells, JR, Chapman, PL, Krein, PT

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08:30  10064  A Novel Hysteresis Current Control Inductor-Coupled Bi-Buck Inverter  
        Liu, J, Yan, Y

08:55  10550  Consideration of A Single-Switch Inverter for Piezo-Electric Transformer with A New Control Method  
        Takushi Oyama, TO, Yoichi Ishizuka, YI, Fujio Kurokawa, FK, Hirofumi Matsuo, HM, Nanjo Aoike, NA

09:20  10726  A novel cascaded multilevel converter with a single non-isolated DC link  
        SOTO, D, PEÑA, R, REYES, L, VASQUEZ, M

09:45  10378  A Single-Phase Resonant Snubber Inverter With Fixed Timing Control For A UPS  
        Yu, Q, Nelms, R.M

DC/DC MODELING & ANALYSIS

08:30  10150  Negative Output Multiple-Lift Push-Pull Switched-Capacitor Luo-Converters  
        Luo, F.L, Ye, H., Rashid, M.H

08:55  10162  Stability of Periodic Solutions for Multi-Topology DC-DC Power Converters  
        Stas Kriventsov, SK, Jeffrey S. Mayer, JSM
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<tr>
<td>09:20</td>
<td>10445</td>
<td>Analysis and Optimization in Design of Randomized PWM Switching Patterns in DC/DC Converters</td>
<td>Lev-Ari, H, Stankovic, A.M</td>
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<td>09:45</td>
<td>11033</td>
<td>Study on Chaotic Signal in Buck-Boost Circuit Based on Wavelet Transform</td>
<td>Wang Liqing, AA, Wei Xueye, CC</td>
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<td>08:30</td>
<td>10195</td>
<td>Input Current Distortion of CCM Boost PFC converters operated in DCM</td>
<td>De Gussemé, K, Van de Sype, DM, Van den Bossche, AA, Melkebeek, JA</td>
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<td>08:55</td>
<td>10470</td>
<td>1kW PFC Converter with Compound Active-Clamping</td>
<td>Feng, B, Xu, D</td>
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<td>09:45</td>
<td>10824</td>
<td>Fully digital Control of Power Factor Preregulator using Disturbance Observer for Input Voltage Estimation</td>
<td>Mattavelli, P., Spiazzi, G.</td>
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<td>08:30</td>
<td>10203</td>
<td>A Simplified Nonlinear Power Source for Simulating PV Panels</td>
<td>Lopes, L., Lienhardt, A-M</td>
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<td>08:55</td>
<td>10245</td>
<td>Evaluation of Anti-Islanding Schemes Based on Non Detection Zone Concept</td>
<td>Ye, Z, Du, P, Walling, R, Kolwalkar, A, Zhang, Y</td>
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<td>09:20</td>
<td>10283</td>
<td>Harmonic interaction between large number of PV inverters and the distribution network</td>
<td>Enslin, JHR, Atmadji, A, Hulhorst, W, Heskes, P, Cobben, JFG</td>
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<td>10:40</td>
<td>10954</td>
<td>Extension of bandwidth of Two-Stage DC-DC Converter with Low Voltage and High Current Output.</td>
<td>Abe, S, Yamamoto, J, Zaitsu, T, Shoyama, M, Ninomiya, T</td>
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**SINGLE PHASE PFC**

**PV SYSTEMS**

**DC/DC MODELING & ANALYSIS (cont.)**
11:05 11099 Applying Transformer Concept To Non-isolated Voltage Regulators Significantly Improves The Efficiency And Transient Response
Weii, J, Yao, K, Xu, M, Lee, F

11:30 11135 Null-Audiosusceptibility of SCM Controlled Buck Converters: small signal and large signal perspectives
Mossoba, JT, Krein, PT

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10:40 10815 Introducing The Low Switching Frequency Space Vector Modulated Multi-Modular Three-Level Converters For High Power Applications Part I: Switching Strategies
Saeedifard, M., Bakhshai, A.R, Jain, P.

11:05 10678 Switching Control Strategy based on Output Regulation Subspaces of Induction Motor by using a Three-level Inverter
Prats, M.M, Escobar, G., Portillo, R., Galván, E., Carrasco, J.M

11:30 10923 A series resonant inverter controlled by pulse densiy modulation with frequency compensation for wide load range
Correa, J M, Hutto, E D, Farret, F A, Simoes, M G

UTILITY APPLICATIONS
10:40 10171 CIRCUIT-LEVEL COMPARISON OF STATCOM TECHNOLOGIES
Lee, CK, Leong, JSK, Hui, SYR, Chung, SH

11:05 10296 VSC-HVDC Station with SSSC Characteristics
Fawzi AL Jowder, Mr., Boon Teck Ooi, Dr.

11:30 10742 Open Modular Power Electronics Building Blocks for Utility Power System Controller Applications
Wang, F., Rosado, S., Boroyevich, D.

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10:40 10990 Average Small-Signal Analysis of Power Factor Correctors Controlled by Conduction Angle
Sebastian, J, Fernandez, A, Villegas, P, Garcia, J, Hernando, M

11:05 11017 Single-Switch Power Factor Correction AC/DC Converter with Storage Capacitor Size Reduction
Lázaro, A, Barrado, A, Pleite, J, Olías, E
11:30  11149  An Optimum Design of Boost PFC Converter  
       Orabi, M, Ninomiya, T

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10:40  10401  Evaluation of IGBT Multilevel Converters for Transformerless Traction Applications  
       Dieckerhoff, S., Bernet, S., Krug, D.

11:05  10793  Design of a Back to back Multilevel induction motor drive for Traction Systems  
       Dell'Aquila, A, Liserre, M, Monopoli, V G, Cecati, C

11:30  10884  An SCR-based Regenerative Converter for VSI Drives  
       Raju, N R

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13:30  10168  Three-Level Converters with Input and Output Sharing the Ground  
       Ruan, X, Wei, J, Xue, Y

13:55  10288  DESIGN CONSIDERATIONS FOR A 48VDC TO ±400VDC CONVERTER  
              FOR UPS APPLICATIONS  
       Hernando, M, Villegas, P, Fernández, A, Sebastián, J

14:20  10730  AM Compatible Switch Mode Power Supply For Compact Audio Sets  
       Sauerlaender, G., Duerbaum, T.

14:45  10933  Comparative Analysis of DC/DC Converter Topologies for Input Voltage  
              Conditioning of a Linear High Power Amplifier  
       Gong, GH, Kolar, J.W

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13:30  10070  Independent vector control of a seven-phase three-motor drive system supplied from  
              a single voltage source inverter  
       Jones, M, Levi, E, Vukosavic, SN, Toliyat, HA

13:55  10349  Position Control of Ultrasonic Motors Using Dead-Zone Compensation with Fuzzy  
              Neural Network  
       Senjyu, S.T, Yoshida, Y.T, Uezato, U.K

14:20  10909  Modular Control For Electromagnetic Aircraft Launching System  
       Monti, A., Patel, K., Patterson, D., Dougal, R.

14:45  10653  Investigation of an on-line rotor resistance identification supplemented with a new
stator resistance observer using Artificial Neural Networks for induction motor drive
Karanayil, B, Rahman, M.F, Grantham, C

POWER SEMICONDUCTOR DEVICES
13:30 10448 Power Diodes for Cryogenic Operation
Ward, RR, Dawson, WJ, Zhu, L, Kirschman, RK, Mueller, O, Patterson, RL, Dickman, JE, Hammoud, A

13:55 10626 CRYOGENIC STUDY AND MODELING OF IGBTs
Caiafa, A., Kang, X., Santi, E., Hudgins, J.L

14:20 10910 SIMULATION OF THE ACRP CONVERTER WITH PHYSICS-BASED DEVICE MODELS
Kang, X, Caiafa, A, Santi, E, Hudgins, J, Palmer, P

14:45 10930 Series Connection of IGBTs Used Multi-level Clamp Circuit and Turn off Timing Adjustment Circuit
Nakatake, H, Iwata, A

SOFT SWITCHING INVERTERS
13:30 10337 Three-Phase Two-Amplitude Actively Clamped Resonant DC-Link Inverter
Zhang, D.H, Ying, J.P, Liu, T.

13:55 10868 A Feasible Loss Model for IGBT in Soft-Switching Inverters
Cavalcanti, M, da Silva, E, Boroyevich, D, Dong, W

14:20 10920 A New Soft-Switching Cell Usable in Bridge Converters
Monteiro, R., Anunciada, A.

14:45 10957 Gate Driver based Soft Switching SiC BJT Inverter
Yu, H, Lai, J, Zhao, J

DC/DC SOFT SWITCHING CONFIGURATIONS
13:30 10047 1MHz Self-driven ZVS Full Bridge Converter for 48V Power Pod
Ren, Y., Xu, M., Sterk, D., Lee, F.

13:55 10842 Design and Experimental Analysis of a 5kW High Output Voltage Series-Parallel X-ray Imaging Applications
Cavalcante, FS, Kolar, JW

14:20 10875 A NEW SOFT SWITCHED CUK CONVERTER ASSOCIATED WITH A
NON-DISSIPATIVE SNUBBER
Gazzoni, FE, Pereira, AA, Barbosa, LR, Treviso, CHG

14:45 10972 Transformer Parasitic Parameter Assisted Zero Current Soft Switching DC-DC Converter with Inductive Snubber for Magnetron Drive
Ishitobi, M, Myoi, T, Fujita, K, Sugimura, H, Nakaoka, M

DC/DC SOFT SWITCHING CONFIGURATIONS (cont.)

15:40 10569 Full Bridge Soft-Switching Phase-Shifted PWM DC-DC Converter using Tapped Inductor Filter
Moisseev, S., Hamada, S., Nakaoka, M.

16:05 11087 Resonant Power Supply for Magnetic Resonance Imaging Gradient Drivers
Sabate, J., Schutten, M., Li, Q., Wirth, W.

16:30 11097 A precise ZVS range calculation method for Full bridge converter
Chao, Y, Hongyang, W, Jianhong, Z, Jianping, Y

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15:40 10862 Dead-time compensation in the zero-crossing current region
Oliveira, AC, Lima, AMN, Jacobina, CB

16:05 10897 Frequency Selectable Induction Heating Targets
Rodriguez, JI, He, R, Leeb, SB

16:30 10755 Experimental Evaluation of IGBTs for Characterizing and Modeling Conducted EMI Emission Source in PWM Inverters
Liu, Q., Shen, W., Wang, F., Boroyevich, D., Stefanovic, V.

INDUSTRIAL APPLICATIONS

15:40 10792 Size and Cost Reduction of Storage Capacitor in AC/DC Converters under Hold-Up Time Requirements
Lázaro, A, Barrado, A, Pleite, J, Vázquez, R, Olías, E

16:05 11122 A simple dc-dc converter for the power supply of a cochlear implant
Fernandez, C., Garcia, O., Cobos, J.A, Uceda, J.

16:30 10209 Power Semiconductor Devices for Hybrid and 42V based Vehicles
Rajashekara, K, Campbell, R.J
RECTIFIERS & AC/AC CONVERTERS

15:40 10208 COMPARING Si AND SiC DIODES PERFORMANCE IN A COMMERCIAL AC-TO-DC RECTIFIER WITH POWER FACTOR CORRECTION
Hernando, M, Sebastián, J, Villegas, P, Fernández, A, García, J, Rascón, M

16:05 10859 Performance Improvement of Alternators with Switched-Mode Rectifiers
Rivas, JM, Keim, TA, Perreault, DJ

16:30 10894 Design of Dual-Output Alternators with Switched-Mode Rectification.
Hassan, G., Perreault, D.J, Keim, T.

HIGH FREQUENCY INVERTERS

15:40 10357 A Novel High-Frequency Current Output Inverter Based on an Immittance-Conversion Element and a Hybrid MOSFET-SiC Diode Switch
Shimizu, T, Kinjyo, H, Wada, K

16:05 10563 Dynamic Performance of An APWM Resonant Inverter for High Frequency AC Power Distribution Systems
Qiu, MQ, Jain, PJ

16:30 10662 Soft-Switching PWM High Frequency Inverter with Minimum Circuit Components for Consumer Induction Heater
Nishida, T., Deguchi, Y., Nakaoka, M., Gamage, L.