Final Program
## CONTENTS

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REGISTRATION AND TUTORIALS

28 November 2005, Monday

REGISTRATION (starts at 11.00am)

TUTORIALS (starts at 2.00pm)

Tutorial 1
Flexible AC Transmission System (FACTS) Based On Voltage-Source Converters
By : Prof. Boon-Teck Ooi, McGill University, Canada

Tutorial 2
Design and Control of IPM Motor
By : Assoc. Prof. Muhammed Faz Rahman, The University of New South Wales, Australia

Tutorial 3
New Power Semiconductor Devices for high switching Frequencies In future power converters
By : Prof. Leo Lorenz, Infineon Technologies, Singapore / Munich

Tutorial 4
State-of-the-Art Power Electronics Technologies for the De-regulated Power Systems
By : Prof. Vassilios G. Agelidis, Murdoch University, Perth, Western Australia

WELCOMING RECEPTION (starts at 6.00pm)
<table>
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<tr>
<td>0900 - 0930</td>
<td>Welcoming Speech</td>
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<td>0930 - 1005</td>
<td><strong>Keynote speech 1</strong></td>
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<tr>
<td></td>
<td><em>Prof. D. J. Patterson</em></td>
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<tr>
<td></td>
<td><strong>Why Small Permanent Magnet Machine Drives are Relegating the Induction Machine Drive to Niche Applications</strong></td>
</tr>
<tr>
<td>1005 - 1040</td>
<td><strong>Keynote speech 2</strong></td>
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<td></td>
<td><em>Prof. Dr.-Ing. Joachim Holtz – Invited by IES Malaysia Chapter under the Distinguished Lecturer Program</em></td>
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<tr>
<td></td>
<td><strong>Development in Sensorless AC Drive Technology</strong></td>
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<tr>
<td>1100 - 1135</td>
<td><strong>Keynote speech 3</strong></td>
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<tr>
<td></td>
<td><em>Prof. Boon-Teck Ooi</em></td>
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<td></td>
<td><strong>Research Opportunity in High Power Electronics</strong></td>
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<tr>
<td>1135 - 1205</td>
<td><strong>Plenary lecture 1</strong></td>
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<td><em>Prof. M.A. Rahman</em></td>
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<td><strong>Recent advances of IPM motor drives in Power Electronics World</strong></td>
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<td>1205 - 1235</td>
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<td><em>Prof. Paolo Tenti</em></td>
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<td><strong>Predictive Digital Control for Voltage Regulation Module Applications</strong></td>
</tr>
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## TECHNICAL PROGRAM

### Session 1A

**Session Title**: Induction Motor Drives  
**Session Chair**: Jiri KLIMA, Nik Rumzi NIK IDRIS  
**Date**: 29 November 2005, Tuesday  
**Time**: 14:00 - 17:20  
**Venue**: Seminar Room 1

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<th>Time</th>
<th>Paper Number</th>
<th>Paper Title</th>
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<tr>
<td>1400 - 1420</td>
<td>1A.01</td>
<td>P0195 Perfect Speed Tracking of Direct Torque Controlled-Induction Motor Drive using Fuzzy Logic</td>
<td>T Radwan</td>
<td>Riyadh College of Technology, SAUDI ARABIA</td>
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<tr>
<td>1420 - 1440</td>
<td>1A.02</td>
<td>P0154 Dual Output Power Conditioning Supply using Vector Controlled Three-Phase Induction Generator for Automotive System</td>
<td>T Ahmed, *M Nakaoka, T Tanaka, **K Nishida</td>
<td>Yamaguchi University, JAPAN</td>
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<td>*Kyungnam University, KOREA</td>
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<td>**Ube National College of Technology, JAPAN</td>
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<tr>
<td>1440 - 1500</td>
<td>1A.03</td>
<td>P0456 Sensorless Traction System with Low Voltage High Current Induction Machine for Indoor Vehicle</td>
<td>C Christophe, M Pietrzak-David</td>
<td>Laboratoire d'Electrotechnique et d'Electronique Industrielle, FRANCE</td>
</tr>
<tr>
<td>1520 - 1540</td>
<td>1A.05</td>
<td>P0137 A New Fuzzy-CPI-based Torque Controller for DTC of Induction Motor Drives</td>
<td>F Patkar, *N R Nik Idris, *N Din Muhamad</td>
<td>Kolej Universiti Teknikal Kebangsaan Malaysia, MALAYSIA</td>
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<td></td>
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<td>*Universiti Teknologi Malaysia, MALAYSIA</td>
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<tr>
<td>1600 - 1620</td>
<td>1A.06</td>
<td>P0565 Predictive Control of Torque and Flux of Induction Motor Drives</td>
<td>Y Li, C Wang, H Hu</td>
<td>Tsinghua University, CHINA</td>
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<tr>
<td>1620 - 1640</td>
<td>1A.07</td>
<td>P0507 Design and Implementation of a Direct Torque Control of Induction Machine Utilizing a Digital Signal Processor and the Field Programmable Gate Arrays</td>
<td>C L Toh, N R Nik Idris, A H Mohd Yatin, *F Patkar</td>
<td>Universiti Teknologi Malaysia, MALAYSIA</td>
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<td>*Kolej Universiti Teknikal Kebangsaan Malaysia, MALAYSIA</td>
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<tr>
<td>1640 - 1700</td>
<td>1A.08</td>
<td>P0627 A New Artificial Neural Network - Direct Torque Control for Matrix Converter Fed Three-Phase Induction Motor</td>
<td>P Q Dung, L Minh Phuong</td>
<td>HCM City University of Technology, VIETNAM</td>
</tr>
</tbody>
</table>
Closed-Form Analytical Investigation of an Induction Motor Drive Fed from Four-Switch Inverter in Six-step Operation Mode

J Klima
Technical Faculty of CZU in Prague, CZECH REPUBLIC

Session 1B

Session Title : Soft-switching Converters
Session Chair : Sujit Kumar BISWAS
Zainal SALAM
Date : 29 November 2005, Tuesday
Time : 14:00 - 17:00
Venue : Seminar Room 2

1400 - 1420 1B.01  P0538
Application of Natural Commutation Technique to Center-Tapped HF Link Inverter
C L Nge, *Z Salam
Motorola Technology Sdn Bhd, MALAYSIA
*Universiti Teknologi Malaysia, MALAYSIA

1420 – 1440 1B.02  P0332
A Comparison of Zero-Voltage and Zero-Current Switching Phase-Shifted PWM DC-DC Converters
A Jangwanitlert, *J Songboonkaew
King Mongkut's Institute of Technology Ladkrabang, THAILAND
*Thorburri College of Technology, THAILAND

1440 - 1500 1B.03  P0155
A Novel Edge-Resonant Soft Switching PWM Controlled High Frequency Inverter with Minimum Circuit Components
A Eid, J K Choi, W H Lee, M Nakaoka
Kyungnam University, KOREA

1500 - 1520 1B.04  P0209
New Fully Soft-Switched Boost-Converter with Reduced Conduction Losses
S S Saha, *B Majumdar, **T Halder, **S K Biswas
College of Textile Technology, INDIA
*Sripat Singh College Murshidabad, INDIA
**Jadavpur University, INDIA

1520 - 1540 1B.05  P0315
Advanced High Power DC-DC Converter using Novel Type Half-Bridge Soft Switching PWM Inverter with High Frequency Transformer for Arc Welder Transformer for Arc Welder
K Morimoto, T Doi, H Manabe, *N A Ahmed, **H W Lee, **M Nakaoka
Daihen Corporation, JAPAN
*Sophia University, JAPAN
**Kyungnam University, KOREA

1600 - 1620 1B.06  P0334
Evaluation of Conducted EMI Emissions on ZVZCS PWM dc-dc Converters with a Fixed Switching Frequency
A Jangwanitlert, *J Songboonkaew
King Mongkut's Institute of Technology Ladkrabang, THAILAND
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<tr>
<th align="center">Session 1C</th>
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<tr>
<td align="center"><strong>Session Title</strong></td>
<td align="center">DC-DC Converters 1</td>
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<tr>
<td align="center"><strong>Session Chair</strong></td>
<td align="center">Tamotsu NINOMIYA, Awang JUSOH</td>
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<td align="center"><strong>Date</strong></td>
<td align="center">29 November 2005, Tuesday</td>
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<tr>
<td align="center"><strong>Time</strong></td>
<td align="center">14:00 - 16:40</td>
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<tr>
<td align="center"><strong>Venue</strong></td>
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**1400 - 1420** 1C.01 P0597
An Adaptive Fuzzy Logic Controller by Sliding Mode Control Method for DC/DC Converter
Mahanakorn University of Technology, THAILAND
*King Mongkut's Institute of Technology Ladkrabang, TAJIKISTAN

**1420 - 1440** 1C.02 P0447
Analysis of an Active Clamp Forward Converter
B R Lin, H K Chiang, *C E Huang, K C Chen, *D Wang
National Yunlin University of Science and Technology, TAIWAN
*Mean Well Enterprises Co Ltd, TAIWAN

**1440 - 1500** 1C.03 P0385
Interleaved-Boost-Input Type Isolated Full Bridge PFC Converter
S Tomioka, H Terashi, *T Ninomiya
Densei-Lambda K K, JAPAN
*Kyushu University, JAPAN

**1500 - 1520** 1C.04 P0611
A New Approach to Hi-Power DC-DC Converters Under Large Load and Input Voltage Variations
S R Hadian Amrei, D Xu, Y Q Lang
Harbin Institute of Technology, CHINA

**1520 - 1540** 1C.05 P0311
Realizing 200 Watt/Cubic Inch in VRM
A Elbanhawy
Fairchild Semiconductor, UNITED STATES
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<tr>
<td>1600 - 1620</td>
<td>1C.06</td>
<td>P0500</td>
<td>A Novel Converter for Fuel Cells Applications</td>
<td>B P Divakar, D Sutanto</td>
<td>The Hong Kong Polytechnic University, HONG KONG S.A.R.</td>
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<td>1620 - 1640</td>
<td>1C.07</td>
<td>P0678</td>
<td>Fast and Accurate Current Sensing in a Multiphase Buck Converter</td>
<td>H Marecar, R Oruganti</td>
<td>National University of Singapore, SINGAPORE</td>
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**Session 1D**

**Session Title**: Inverters 1  
**Session Chair**: Shoji FUKUDA, Abdul Halim MOHD YATIM  
**Date**: 29 November 2005, Tuesday  
**Time**: 14:00 - 17:20  
**Venue**: Seminar Room 4

### 1400 - 1420  
**1D.01** P0562  
A Multilevel Hybrid Converter Combined with Voltage and Current Type Converter for Static VAR Compensator  
K Hayashi, K Naito  
Meijo University, JAPAN

### 1420 - 1440  
**1D.02** P0234  
A Simple DC Imbalance Rejection Technique for UPS Inverters  
K Zhang, X Jian, K Yong, C Jian  
Huazhong University of Science and Technology, CHINA

### 1440 - 1500  
**1D.03** P0217  
Time-Sharing Sinewave Absolute Value Tracking Boost Chopper Controlled one Stage Power Conditioner with Non Electrolytic Capacitor DC Filter Link  
Sophia University, JAPAN  
*Kyungnam University, KOREA

### 1500 - 1520  
**1D.04** P0638  
A Graphical Approach to Switching Losses and Harmonics Distortion for Carrier SVPWM Methods in Multilevel Inverters  
N V Nho  
Hochiminh City University of Technology, VIETNAM

### 1520 - 1540  
**1D.05** P0216  
Switched Capacitor Snubber Assisted Zero Current Soft Switching PWM High Frequency Inverter with Lossless Inductive Snubbers  
M H Hashem, N A Ahmed, *E Hiraki, *T Ahmed, **K Fathy, **H W Lee, **M Nakaoka  
Sophia University, JAPAN  
*Yamaguchi University, JAPAN  
**Kyungnam University, KOREA

### 1600 - 1620  
**1D.06** P0576  
Power Losses for IGCTs and Diodes in MV Three-level Inverters  
L Yuan, Z Zhao, *Y Zhi  
Tsinghua University, CHINA
**Session 1E**

**Session Title**: Distributed Generation 1  
**Session Chair**: Bhim SINGH  
**Yung C LIANG**  
**Date**: 29 November 2005, Tuesday  
**Time**: 14:00 - 17:20  
**Venue**: Seminar Room 5

**1400 - 1420**  
1E.01  
P0220  
A Control Method of Prolonging the Service Life of Battery in Stand-alone Renewable Energy System using Electric Double Layer Capacitor (EDLC)  
Y Jia, R Shibata, N Yamamura, M Ishida  
Mie University, JAPAN

**1420 - 1440**  
1E.02  
P0338  
Voltage Compensation in Weak Grids using Distributed Generation with Voltage Source Converter as a Front End  
F Magueed, H Awad  
Chalmers University of Technology, SWEDEN

**1440 - 1500**  
1E.03  
P0593  
An Electronic Voltage and Frequency Controller for Single-Phase Self-Excited Induction Generators for Pico Hydro Applications  
B Singh, S Murthy, *S Gupta  
Indian Institute of Technology, Delhi, INDIA  
*Rajiv Gandhi Technical University, INDIA

**1500 - 1520**  
1E.04  
P0615  
High-efficient Soft-Switching Converter for Three-Phase Grid Connections of Renewable Energy Systems
Development of an Analog Maximum Power Point Tracker for a Photovoltaic Panel
A Tariq, M S J Asghar
Aligarh Muslim University, INDIA

A Consise Two-phase Flow Model for Direct Methanol Fuel Cell Performance Modelling
Y Yang, Y C Liang
National University of Singapore, SINGAPORE

Smart and Accurate State-of-Charge Indication in Portable Applications
University of Twente, NETHERLANDS, THE
*Philips Research Laboratories, NETHERLANDS, THE

Decoupling Load and Power System Dynamics to Improve System Stability
X Wang, D M Vilathgamuwa, S S Choi
Nanyang Technological University, SINGAPORE

Power Quality Enhancement with DSTATCOM for Small Isolated Alternator Feeding Distribution System
Indian Institute of Technology, Delhi, INDIA
*Netaji Subhas Institute of Technology, INDIA

Session 1F
Session Title : Power Quality 1
Session Chair : Paolo TENTI
Ashwin M KHAMBADKONE
Date : 29 November 2005, Tuesday
Time : 14:00 - 17:00
Venue : Seminar Room 6

A Novel Method of Suppressing the Inrush Current of Transformers using a Series-Connected Voltage-Source PWM Converter
Shimane University, JAPAN
*Yamaguchi University, JAPAN

Simultaneous Operation of a PSS and a Series Power Electronics-Based Controller with Minimum Interaction
Isfahan University of Technology, IRAN
*Queen's University, CANADA
Optimization of Hybrid Filters for Distributed Harmonic and Reactive Compensation

P Tenti, E Tedeschi, *P Mattavelli
University of Padova, ITALY
*University of Udine, ITALY

1500 - 1520 1F.04  P0616
Improved Broadband Harmonic Filter Design for Adjustable Speed Drives
A Hava, H Zubi
Middle East Technical University, TURKEY

1520 - 1540 1F.05  P0199
Development of a DSP-Based Power Quality Monitoring Instrument for Real-Time Detection of Power Disturbances
M Salem, A Mohamed, S Abd Samad, R Mohamed
University Kebangsaan Malaysia, MALAYSIA

1600 - 1620 1F.06  P0153
Study of Dynamic Voltage Restorer under the Abnormal Voltage Conditions
H K Chiang, B R Lin, K W Wu
National Yunlin University of Science and Technology, TAIWAN

1620 - 1640 1F.07  P0151
A Multi-function Single-phase Voltage Source Inverter with Current Harmonic Elimination and Voltage Regulation Features
B R Lin, H K Chiang, C C Yang, K W Wu
National Yunlin University of Science and Technology, TAIWAN

Session 2A

Session Title : Control of Motor Drives 1
Session Chair : Abdul Halim MOHD YATIM
Sanjib Kumar PANDA
Date : 30 November 2005, Wednesday
Time : 08:40 - 12:00
Venue : Seminar Room 1

0840 - 0900 2A.01  P0497
Phase-Shift-Based Synchronous Modulation of Dual Inverters for an Open-End Winding Motor Drive with Elimination of Zero Sequence Currents
V Oleschuk, A Sizov, *B K Bose, **A Stankovic
Academy of Sciences of Moldova, MOLDOVA
*The University of Tennessee at Knoxville, UNITED STATES
**Northeastern University, UNITED STATES

0900 - 0920 2A.02  P0669
Evaluation of Secondary Slot Effects on Performance of High-Speed Linear Induction Motors Using a Quasi Three-Dimensional Space Harmonic Method
M Mirzayee, *M Joorabian
Amirkabir University of Technology, IRAN
*Chamran University of Ahvaz, IRAN

0920 - 0940 2A.03  P0617
Studies of Inverter Ratings of BDFM Adjustable Speed Drive or Generator Systems
X Wang, P Roberts, *R Mcmahon
University of Cambridge, UNITED KINGDOM
*Cambridge University, UNITED KINGDOM

0940 - 1000 2A.04  P0463
Closed-Loop Control and Performance of an Inverterless Interior PM Automotive Alternator
C Z Liaw, W L Soong, N Ertugrul
The University of Adelaide, AUSTRALIA

1020 - 1040 2A.05  P0331
Investigation of Velocity Ripple Suppression for the Discontinuous Permanent Magnet Linear
Synchronous Motor by Open Loop
Y Kim, H Dohmeki, D Ebihara
Musashi Institute of Technology, JAPAN

1040 - 1100 2A.06  P0548
Sensorless Rotor Position Detection using Differential High Frequency Phase Current method
R Chandru, J Zhu
University of Technology Sydney, AUSTRALIA

1100 - 1120 2A.07  P0224
A Novel Implementation Method of a Programmable Cascaded Low Pass Filters for a Low
Speed Sensorless Control of Synchronous Reluctance Motors
A Ghaderi, T Hanamoto, T Tsuji, *M Ebrahimi
Kyushu Institute of Technology, JAPAN
*Isfahan University of Technology, IRAN

1120 - 1140 2A.08  P0399
Nonlinear Feedback Control of a Bearingless Brushless DC Motor
H Grabner, W Amrhein, S Silber, K Nenninger
Johannes Kepler Universitat (JKU) Linz, AUSTRIA

1140 1200 2A.09  P0351
Sensorless Control of Permanent Magnet Machine Drives for Aerospace Applications
A Budden, R Wrobel, D Holliday, P Mellor, *P Sangha
University of Bristol, UNITED KINGDOM
*Goodrich Control Systems, UNITED KINGDOM

Session 2B

Session Title : DC-DC Converters 2
Session Chair : Sujit Kumar BISWAS
Awang JUSOH
Date : 30 November 2005, Wednesday
Time : 08:40 - 12:00
Venue : Seminar Room 2

0840 - 0900 2B.01  P0665
Simulation and Experimental Results of the Bi-Directional DC-DC Converter Operating as an
Active Damping Device in a Simple System
A Jusoh, Z Salam, S Md Ayob, M R Sahid
Universiti Teknologi Malaysia, MALAYSIA

0900 - 0920 2B.02  P0423
Integrated Magnetic Component based Analysis for Interleaved DC-DC Buck Converter
A New Hybrid Current Source Rectifier with Common Mode Voltage Elimination
M J Abdul Aziz, C Klumpner, J C Clare
University of Nottingham, UNITED KINGDOM

AC/DC Flyback Converter With A Single Switch Controlled DC Motor Drives
E El-Kholy
Menoufiya University, EGYPT

Improved Asymmetrical Half-Bridge Converters
V Meleshin, D Ovchinnikov
Svyaz Engineering, RUSSIA

Analysis and Implementation of an Asymmetrical Half-Bridge Converter
B R Lin, H K Chiang, C H Tseng, K C Chen
National Yunlin University of Science and Technology, TAIWAN

A New Control Circuit Extends the Effective Duty Cycle Range of Flyback Converters
T Halder, S K Biswas, *S S Saha, **B Majumdar
Jadavpur University, INDIA
*College of Textile Technology, INDIA
**Sripat Singh College Murshidabad, INDIA

An Improved Control Scheme for Multiphase Buck Converter Circuits used in Voltage Regulator Modules
J Agrawal, K Debaprasad, A Patra, *B Culpepper
Indian Institute of Technology, Kharagpur, INDIA
*National Semiconductor Corporation Santa Clara, UNITED STATES

Analysis, Design and Implementation of an Active Clamp Flyback Converter
B R Lin, H K Chiang, K C Chen, *D Wang
National Yunlin University of Science and Technology, TAIWAN
*Mean Well Enterprises Co Ltd, TAIWAN

Session 2C

Session Title : Converters Control 1
Session Chair : Ramesh ORUGANTI

Date : 30 November 2005, Wednesday
Time : 08:40 - 12:00
Venue : Seminar Room 3

Modelling, Analysis and Design of Cascaded Forward and Interleaved Converter for Powering
Future Microprocessors
R P Singh, A M Khambadkone, G Samudra, Y C Liang
National University of Singapore, SINGAPORE

0900 - 0920 2C.02  P0624
Modulation and Control Schemes for A New Power Converter Based on Z-source and Matrix
Converters for ISA 42 V PowerNet System
K You, M F Rahman
The University of New South Wales, AUSTRALIA

0920 - 0940 2C.03  P0564
Control of High Performance DC-AC Inverters using Frequency Domain Based Repetitive
Control
W Wang, S K Panda, J X Xu
National University of Singapore, SINGAPORE

0940 - 1000 2C.04  P0395
Increasing Efficiency of an DSP-controlled Converter by On-the-fly Changing of the Gate Drive
Method
F Bertling, S Soter
University of Dortmund, GERMANY

1020 - 1040 2C.05  P0179
New Current Sensing Circuit for Hysteresis-Current-Controlled Buck Converters
National Taipei University of Technology, TAIWAN
*Lunghua University of Science and Technology, TAIWAN

1040 - 1100 2C.06  P0537
Control of a Three-Phase PWM Rectifier Based on a
Dual Single-Input Single-Output Linear Model
B Yin, R Oruganti, S K Panda, A K S Bhat
National University of Singapore, SINGAPORE

1100 - 1120 2C.07  P0309
Small-Signal Model of a High-Power-Factor, Three-Phase AC-DC Converter with High-
Frequency Resonant Current Injection
M N Seroji, *A Forsyth
The University of Birmingham, UNITED KINGDOM
*The University of Manchester, UNITED KINGDOM

1120 - 1140 2C.08  P0382
Modeling and Simulation of DC-DC Power Converters in CCM and DCM using the Switching
Functions Approach: Application to the Buck and Cuk Converters
H Kanaan, *K Al-Haddad
Saint-Joseph University, LEBANON
*Ecole de Technologie Superieure, CANADA

1140 - 1200 2C.09  P0420
Analysis and Implementation of a High Efficiency, Interleaved Current-fed Full Bridge Converter
for Fuel Cell System
X Kong, A M Khambadkone
National University of Singapore, SINGAPORE
**Session 2D**

**Session Title**: Distributed Generation 2  
**Session Chair**: Junji TAMURA  
Abdul Halim MOHD YATIM  
**Date**: 30 November 2005, Wednesday  
**Time**: 08:40 - 12:00  
**Venue**: Seminar Room 4

0840 - 0900  
**P0366**  
Deadbeat Current Control for AC and DC Power Applications of a Stand-Alone Induction Generator System  
*K Nishida, *T Ahmed, **M Nakaoka*  
Ube National College of Technology, JAPAN  
*Yamaguchi University, JAPAN  
**Kyungnam University, KOREA

0900 - 0920  
**P0577**  
Optimum Input Volt-Ampere Control of Three-Phase Induction Motors Connected to Distributed Generating Systems  
*H Ashfaq, M S J Asghar*  
Aligarh Muslim University, INDIA

0920 - 0940  
**P0542**  
An Improved Maximum Power Point Tracking Algorithm with Current-Mode Control for Photovoltaic Applications  
*C W Tan, T C Green, C A Hernandez Aramburo*  
Imperial College London, UNITED KINGDOM

0940 - 1000  
**P0513**  
Smoothing Control of Wind Farm Output Fluctuation with Doubly-fed Asynchronous Machine  
*L Wu, Z X Wang, *J Tamura*  
Shanghai Jiaotong University, CHINA  
*Kitami Institute of Technology, JAPAN

1020 - 1040  
**P0675**  
Battery Energy Storage System for Power Conditioning of Renewable Energy Sources  
*R S Bhatia, S P Jain, *D K Jain, **B Singh*  
NIT Kurukshetra, INDIA  
*C. R. State College of Engineering, Murthal, INDIA  
**Indian Institute of Technology, Delhi, INDIA

1040 - 1100  
**P0602**  
A Solar-powered Battery Charger with Neural Network Maximum Power Point Tracking Implemented on a Low-Cost PIC-microcontroller  
*P Petchjatuporn, W Ngamkham, N Khaehintung, P Sirisuk, W Kiranon*  
Mahanakorn University of Technology, THAILAND

1100 - 1120  
**P0451**  
Transient Stability Analysis of Wind Generator System with the Consideration of Multi-Mass Shaft Model  
Kitami Institute of Technology, JAPAN  
*Hokkaido Electrical Power Co., INC., JAPAN

1120 - 1140  
**P0594**
Grid-connected Photovoltaic System with Maximum Power Point Tracking using Self-Organizing Fuzzy Logic Controller
N Khaehintung, C Kangsajian, P Sirisuk, *A Kunakorn
Maharukarn University of Technology, THAILAND
*King Mongkut's Institute of Technology Ladkrabang, TAJIKISTAN

1140 - 1200 2D.09 P0614
Grid-Connection Technique for a Photovoltaic System with Power Factor Correction
Y K Lo, J Y Lin, T Y Wu
National Taiwan University of Science and Technology, TAIWAN

Session 2E

Session Title : Power Quality 2
Session Chair : M A RAHMAN
Norman MARIUN
Date : 30 November 2005, Wednesday
Time : 08:40 - 12:00
Venue : Seminar Room 5

0840 - 0900 2E.01 P0301
Simulation and Experimental Investigation of an Optimum UPQC with Minimum VA Loading
Y Y Kolhatkar, S P Das
Indian Institute of Technology, Kanpur, INDIA

0900 - 0920 2E.02 P0130
Locating Voltage Sag Source at the Point of Common Coupling in Industrial Distribution Systems
N Hamzah, A Mohamed, A Hussain
*University Kebangsaan Malaysia, MALAYSIA

0920 - 0940 2E.03 P0124
The Novel Detection Approach of Shunt Active Filter Based on Adaptive Inverse Control
Y Wu, Z Wu, *H Li, L Xia
Naval University of Engineering, CHINA
*Naval submarine academy, CHINA

0940 - 1000 2E.04 P0238
Analysis of Instantaneous Representative Active Power Equality based Control Method for Three Phase Shunt Active Power Filter
Y Haroen, S Riyadi
Bandung Institute of Technology, INDONESIA

1020 - 1040 2E.05 P0539
Fundamental Frequency Model of a Dynamic Voltage Restorer
R Krishnan Iyer, A K Ramasamy, V K Ramachandaramurthy, R N Mukerjee
Universiti Tenaga Nasional, MALAYSIA

1040 - 1100 2E.06 P0613
Design, Simulation and Analog Circuit Implementation of a Three-phase Shunt Active Filter using the Icos(phi) Algorithm
M G Nair, G Bhuvaneswari
Indian Institute of Technology, Delhi, INDIA

1100 - 1120 2E.07 P0393
Real Time Tracking of RMS Quantites in Three-Phase Systems under Nonsinusoidal Conditions
Session 3A

Session Title : Motor Design 1
Session Chair : Pekik Argo DAHONO
Khalid MOHAMED NOR

Date : 30 November 2005, Wednesday
Time : 14:00 - 15:20
Venue : Seminar Room 1

1400 - 1420  3A.01  P0639
Study of A PMSM Model Incorporating Structural and Saturation Saliencies
Y Yan, J Zhu, H Lu, Y G Guo, *S Wang
University of Technology Sydney, AUSTRALIA
*Xian Jiaotong University, CHINA

1420 - 1440  3A.02  P0314
A New Motor Design for Hermetic DC Compressor
C C Lo, C C Yang, H C Chen
Industrial Technology Research Institute, TAIWAN

1440 - 1500  3A.03  P0399
Stability Limits of Saturated Interior Permanent Magnet Motors
E E Rashad
Buraydah College of Technology, SAUDI ARABIA

1500 - 1520  3A.04  P0466
A Permanent Magnet Linear Motor for Micro Robots
H Lu, J Zhu, Y G Guo
University of Technology Sydney, AUSTRALIA
## Session 3B

**Session Title**: Permanent Magnet Motor Drives  
**Session Chair**: Muhammed Faz RAHMAN  
**Nik Rumzi NIK IDRIS**  
**Date**: 30 November 2005, Wednesday  
**Time**: 14:00 - 15:40  
**Venue**: Seminar Room 2

### 1400 - 1420 3B.01 P0149
**Adaptive Backstepping based Controller Design for Interior type PMSM using Maximum Torque Per Ampere Strategy**  
J Soltani, M Pahlavanezhad  
I nfahan University of Technology, IRAN

### 1420 - 1440 3B.02 P0298
**Intelligent Speed Control of Permanent Magnet Synchronous Motor Drive Based-on Neuro-Fuzzy Approach**  
T Radwan, *M Gouda  
Riyadh College of Technology, SAUDI ARABIA  
*Industrial Education College, EGYPT

### 1440 - 1500 3B.03 P0474
**A Novel Direct Load Angle Control for Interior Permanent Magnet Synchronous Machine Drives with Space Vector Modulation**  
J Zhang, Z Xu, L Tang, M F Rahman  
The University of New South Wales, AUSTRALIA

### 1500 - 1520 3B.04 P0434
**A Novel and Simple Initial Rotor Position Detecting Method for PMSMs**  
J' Sugawara, T Kaimori, S Nishikata  
Tokyo Denki University, JAPAN

### 1520 - 1540 3B.05 P0674
**Hybrid Model Reference Adaptive Speed Control for Vector Controlled Permanent Magnet Synchronous Motor Drive**  
M Nour, I Arris, N Mariun, S Mahmoud  
University Putra Malaysia, MALAYSIA

## Session 3C

**Session Title**: Inverters 2  
**Session Chair**: Katsunori TANIGUCHI  
**Zainal SALAM**  
**Date**: 30 November 2005, Wednesday  
**Time**: 14:00 - 15:40  
**Venue**: Seminar Room 3

### 1400 - 1420 3C.01 P0506
**200kW/400kHz High Frequency Inverter for Induction Heating Application**  
X Zhu, Y Peng, X Shi, H Li  
North China Electric Power University, CHINA
**3C.02**  P0421  
Analysis and Research of a Multiple-loop Control Strategy for Single-Phase UPS Inverters  
W Yao, C Zheng, M Chen, Z Qian  
Zhejiang University, CHINA

**3C.03**  P0156  
Modeling and Simulation of Three-Phase OHSW Multilevel Voltage-Source Inverter by Means of Switching Functions  
M G Hosseini Aghdam, S H Fathi, *A Ghasemi  
Amirkabir University of Technology, IRAN  
*Iran University of Science and Technology, IRAN

**3C.04**  P0122  
High-Frequency Transformer-Link Inverter with Regenerative Snubber  
L S Toh, Z Salam, Z Ramli  
Universiti Teknologi Malaysia, MALAYSIA

**3C.05**  P0178  
Proposed Nine Switches Five Level Inverter With Low Switching Frequencies for Linear Generator Applications  
M Ahmed, N Abd Rahim, H Ping, K Mohamed Nor  
University of Malaya, MALAYSIA

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**Session 3D**

**Session Title**: Lighting and display  
**Session Chair**: Henry GUELDNER  
Bhim SINGH  
**Date**: 30 November 2005, Wednesday  
**Time**: 14:00 - 15:40  
**Venue**: Seminar Room 4

**3D.01**  P0578  
Igniter for HID Lamp Based on Discontinuous Working Mode of Piezoelectric Transformers  
M C Do, *T Hanisch, *H Gueldner  
Dresden University of Technology, GERMANY  
*Technology University of Dresden, GERMANY

**3D.02**  P0263  
Study on Improvement of Buck-boost Inverter Suitable for Compact Self-ballast Fluorescent Lamp  
N Takahashi, *Y Kato, **M Nakaoka  
Matsue National College of Technology, JAPAN  
*Tottori University, JAPAN  
**Kyungnam University, KOREA

**3D.03**  P0670  
A High-Voltage Input Backlight Module Driver for Multi-Lamp LCD Panels  
Y K Lo, K J Pai, S C Yen  
National Taiwan University of Science and Technology, TAIWAN

**3D.04**  P0291  
High-Frequency Operating Characteristics of Metal Halide Lamps  
S Y Tang, C S Moo, *C R Lee
Electronic Ballast Using Neutral Point Type Step-down Converter
Y Kato, M Nakamura, *N Takahashi, **I Yokozeki
Tottori University, JAPAN
*Matsue National College of Technology, JAPAN
**Harison Toshiba Lighting Corp, JAPAN

Session 3E

Session Title : Power Electronics Components
Session Chair : Yung C LIANG
Naziha AZLI
Date : 30 November 2005, Wednesday
Time : 14:00 - 15:40
Venue : Seminar Room 5

1400 - 1420 3E.01  P0328
Design of Superjunction Power MOSFET Devices using the Gradient Oxide-Bypassed Structure
Y Chen, Y C Liang, G Samudra
National University of Singapore, SINGAPORE

1420 - 1440 3E.02  P0367
Static Model Verification of IRF Power MOSFETs using Fluke Temperature Probe (80T-150U)
and Performance Comparison of TEH PWM Methods
S Jeevanathan, P Dananjayan
Pondicherry Engineering College, INDIA

1440 - 1500 3E.03  P0498
The Gate Drive Requirements for New Generation of High Current Low Voltage IGBTs
Employed in Motor Converters
P Grbovic
Schneider Toshiba Inverter Europe, FRANCE

1500 - 1520 3E.04  P0601
Implementation and Comparison of Power Diode Models for System Simulation
Z Wang, A Bryant, J Wu, *P Palmer
University of Cambridge, UNITED KINGDOM
*University of British Columbia, CANADA

1520 - 1540 3E.05  P0303
Device Temperature and Stress Distributions in Power Diode ~ A Finite Element Method
G Huang, C M Tan
Nanyang Technological University, SINGAPORE
Session 4A

Session Title : Control of Motor Drives 2
Session Chair : M A RAHMAN

Hew PING

Date : 1 December 2005, Thursday
Time : 08:40 - 12:20
Venue : Seminar Room 1

0840 - 0900 4A.01 P0286
Recent Hot Strip Mill in China
H Hosoda, S Wada, S Kodama, *J Li
Toshiba Mitsubishi-Electric Industrial Systems Corporation, JAPAN
*Hunan Valin Liangiang Steel Co. Ltd, JAPAN

0900 - 0920 4A.02 P0250
A New Sensorless Control Scheme for Brushless DC Motors without Phase Shift Circuit
C H Chen, M Y Cheng
National Cheng-Kung University, TAIWAN

0920 - 0940 4A.03 P0284
Generalized Predictive Controller For A Boost AC To DC Converter Fed DC Motor
E El-Kholy
Menoufiya University, EGYPT

0940 - 1000 4A.04 P0233
Modeling of a Converter-Connected Six-Phase Permanent Magnet Synchronous Generator
K Zhang, *H M Kojabadi, **P Z Wang, **L Chang
Huazhong University of Science and Technology, CHINA
*Sahand University of Technology, IRAN
**University of New Brunswick, CANADA

1020 - 1040 4A.05 P0184
Chattering Free Neuro-Sliding Mode Control of DC Drives
M G Sarwer, M A Rafiq, M Datta, B D C Ghosh, *S Komada
Khulna University of Engineering and Technology, BANGLADESH
*Mie University, JAPAN

1040 - 1100 4A.06 P0409
Indirect Back-EMF Zero Crossing Detection for Sensorless BLDC Motor Operation
P Damodharan, K Vasudevan
Indian Institute of Technology, Madras, INDIA

1100 - 1120 4A.07 P0457
Development of Closed Loop Control Schemes for Constant Speed operation of a Thyristorized
Commutatorless Series Motor Drive
K Mukherjee, *S Sengupta, *T K Bhattacharya, **A K Chattopadhyay
Jadavpur University, INDIA
*Indian Institute of Technology, Kharagpur, INDIA
**Bengal Engineering and Science University, INDIA

1120 - 1140 4A.08 P0452
RTLinux Based Online Real Time Simulator of SPMSM using the Block Pulse Approximation
T Hanamoto, A Ghaderi, T Tsuji
Kyushu Institute of Technology, JAPAN

1140 - 1200 4A.09 P0499
A Comparison of Losses in Small (<1kw) Drives using Sine and Space Vector Pulse Width Modulation Schemes
C Y Leong, *R Grinberg, G Makrides, Y Wu, R Mcmahon
Cambridge University, UNITED KINGDOM
*Moscow Power Engineering Institute, RUSSIA

1200 - 1220  4A.10  P0677
Direct Torque Controller for Switched Reluctance Motor using Sliding Mode Control
S K Sahoo, S K Panda, J X Xu
National University of Singapore, SINGAPORE

Session 4B

Session Title : Analysis and Design of Motor Systems
Session Chair : Eun-Woong LEE
                Ashwin M KHAMBADKONE
Date : 1 December 2005, Thursday
Time : 08:40 - 12:00
Venue : Seminar Room 2

0840 - 0900 4B.01  P0515
A Torque Estimation Method for a Switched Reluctance Machine
S Kaewthai, S Kittiratsatcha
King Mongkut's Institute of Technology Ladkrabang, THAILAND

0900 - 0920 4B.02  P0543
Optimal Design and Speed Increasing Method of Solenoid Actuator using a Non-Magnetic Ring
B J Sung, *E W Lee
Korea Institute of Machinery & Materials, KOREA
*Chungnam National University, KOREA

0920 - 0940 4B.03  P0229
Practical Implementation of the Bridge Configured Winding for Self-Bearing Machines
W K S Khoo, S D Garvey
The University of Nottingham, UNITED KINGDOM

0940 - 1000 4B.04  P0646
A Novel Flux-Reversal Axial Flux Generator for High Speed Applications
M Mirzayee, H Bahrami, A Zabihi, *M Joorabian
Amirkabir University of Technology, IRAN
*Chamran University of Ahvaz, IRAN

1020 - 1040 4B.05  P0468
S Chan, M N Hamid
University Technology Mara, MALAYSIA

1040 - 1100 4B.06  P0287
Analysis and Design of the Stator Windings of a Bearingless Motor for Comparisons of Radial Force Capabilities with Different Rotors
A Morales-Castorena, W L Soong, N Ertugrul
The University of Adelaide, AUSTRALIA

1100 - 1120 4B.07  P0477
A Magnetic Model of a Three-Phase Switched-Reluctance Machine using Cubic Spline
Interpolation Technique
S Khotpanya, S Kittiratsatcha, *I Kazuhisa
King Mongkut's Institute of Technology Ladkrabang, LAOS
*Tokai University, JAPAN

1120 - 1140 4B.08  P0488
Design of the Single Phase SRM Considering the Torque Ripple
J H Lee, E W Lee, J H Kim
Chungnam National University, KOREA

1140 - 1200 4B.09  P0484
Innovative Actuator with Two Controlled Degrees of Freedom for Precision Technology Applications
J Makarovic, E Lomonova, *J Compter
Technical University of Eindhoven, NETHERLANDS, THE
*Philips Applied Technologies, NETHERLANDS, THE

Session 4C

Session Title : PE Applications 1
Session Chair : V AGELIDIS
Don Mahinda VILATHGAMUWA
Date : 1 December 2005, Thursday
Time : 08:40 - 11:40
Venue : Seminar Room 3

0840 - 0900 4C.01  P0431
Fluorescent Lamp Model for High-Frequency Electronic Ballasts
H C Yen, Z J Huang, K H Lee
Fortune Institute of Technology, TAIWAN

0900 - 0920 4C.02  P0173
The Low Power Induction Heating using Resonant Technique
F R Ahmad, A M Omar
Universiti Teknologi Mara, MALAYSIA

0920 - 0940 4C.03  P0529
GA-trained GRNN for Intelligent Ultra Fast Charger for Ni-Cd Batteries
P Petchjatuporn, N Khaehintung, K Sunat, W Kiranon, P Wicheanchote
Mahanakorn University of Technology, THAILAND

0940 - 1000 4C.04  P0608
Effects of Source Voltage Harmonic Distortion on Power Factor Compensation in Triac
Controlled AC Chopper Circuits
M Balci, H Hocaoglu
Gebze Institute of Technology, TURKEY

1020 - 1040 4C.05  P0485
A Hybrid Genetic Algorithm for Selective Harmonic Elimination Control of a Multilevel Inverter
with Non-Equal DC Sources
M Dahidah, *V Agelidis
Multimedia University, MALAYSIA
*Murdoch University, AUSTRALIA
1040 - 1100  4C.06  P0621
Single Phase PWM Controlled Voltage Converter for Pumps and Fans without DC Link Electrolytic Capacitors
M Reisinger, *W Amrhein, *S Silber
Linz Center of Mechatronics GmbH, AUSTRIA
*Johannes Kepler Universität (JKU) Linz, AUSTRIA

1100 - 1120  4C.07  P0255
A Novel Single-Switch Single-Stage Electronic Ballast With High Input Power Factor
National Ilan University, TAIWAN
*Lunghwa University of Science and Technology, TAIWAN

1120 - 1140  4C.08  P0478
New Piezoelectric Transformer Adapter with Universal Input Voltage Range
T Kim, S Choi, S Lee, B H Cho
Seoul National University, KOREA

Session 4D

Session Title : Converters Control 2
Session Chair : Zainal SALAM
Gobbi RAMASAMY
Date : 1 December 2005, Thursday
Time : 08:40 - 12:00
Venue : Seminar Room 4

0840 - 0900  4D.01  P0405
TMS320F2407 DSP Based Fuzzy Logic Controller for Negative Output Luo Re-Lift Converter: Design, Simulation and Experimental Evaluation
R Kayalvizhi, S P Natarajan, V Kavitharajan, R Vijayarajeswaran
Annamalai University, INDIA

0900 - 0920  4D.02  P0397
Control of Paralleled Negative Output Elementary Luo Converters
R Kayalvizhi, S P Natarajan, P Suresh Pandiyarajan, R Vijayarajeswaran
Annamalai University, INDIA

0920 - 0940  4D.03  P0609
A Forward Converter Having an FPGA-based PID Controller with Parameters On-line Tuned
K I Hwu, *Y T Yau
National Taipei University of Technology, TAIWAN
*Industrial Technology Research Institute, TAIWAN

0940 - 1000  4D.04  P0571
Stability Comparison of Three Control Schemes for Bus Converter in Distributed Power System
S Abe, T Ninomiya, *M Hirokawa, **T Zaitsu
Kyushu University, JAPAN
*TDK Corporation, JAPAN
**TDK Innoveta Inc., UNITED STATES

1020 - 1040  4D.05  P0115
A Single-Phase Hybrid Active Power Filter using Extension p-q Theorem for Photovoltaic Application
P C Tan, Z Salam, A Jusoh
Universiti Teknologi Malaysia, MALAYSIA
Interactive Simulation and Verification SIMULINK Models for DC-DC Switching Converter Circuits using PWM Control ICs

J H Su, *C M Wang, **J J Chen, J D Lee, T L Chen

Lunghwa University of Science and Technology, TAIWAN

*National Ilan University, TAIWAN

**National Taipei University of Technology, TAIWAN

A Direct Approach to the Positioning of the Reference Vector for Space Vector Modulation

M Tavakoli Bina, M S Moghadam

K. N. Toosi University of Technology, IRAN

Improvement of the Transient Performance of a Voltage-Type PWM Rectifier with Active Filtering Function

T Kitamura, T Kataoka

Tokyo Denki University, JAPAN

Secondary Side Post Regulation Application in Multiple Outputs Flyback Converter

H Chen, W Dong, Y He, Z Qian

Zhejiang University, CHINA

Session 4E

Session Title : Power Quality 2
Session Chair : Ahmet HAVA
Norman MARIUN

Date : 1 December 2005, Thursday
Time : 08:40 - 12:00
Venue : Seminar Room 5

Intelligence-Driven Power Quality Monitoring

H Hakimie, V K Ramachandaramurthy, R N Mukerjee
Universiti Tenaga Nasional, MALAYSIA

A Novel Control Strategy to Reduce Transformer Inrush Currents by Series Compensator

J L Shyu
Kao Yuan Institute of Technology, TAIWAN

Dynamic Voltage Restorer for Voltage Sag Compensation

A K Ramasamy, R Krishnan Iyer, V K Ramachandaramurthy, R N Mukerjee
Universiti Tenaga Nasional, MALAYSIA

Performance Comparison of Various Passive Harmonic Filters for Adjustable Speed Drives

A Hava, H Zubi
Middle East Technical University, TURKEY

Performance Comparison of Various Passive Harmonic Filters for Adjustable Speed Drives

A Hava, H Zubi
Middle East Technical University, TURKEY
A 3-Phase 4-Wire Voltage Sag Compensator Based on Three Dimensions Space Vector
K Oranpiroj, *S Premruedeeprachacharn, Y Kumsuwan, **T Boonsai, ***C Nayar
Rajamangala University of Technology Lanna, THAILAND
*Chiang Mai University, THAILAND
**Rajamangala University of Technology Tanyaburi, THAILAND
***Curtin University of Technology, AUSTRALIA

1040 - 1100 4E.06  P0175
Passive Hybrid Filter for Varying Rectifier Loads
B Singh, *V Verma, **V Garg
Indian Institute of Technology, Delhi, INDIA
*Delhi College of Engineering, INDIA
**Indian Railways, INDIA

1100 - 1120 4E.07  P0469
Modular Structured Multilevel Inverter with Unified Constant-Frequency Integration Control for
Active Power Filters
N Azli, *P Y Lim
Universiti Teknologi Malaysia, MALAYSIA
*Sabah Polytechnic, MALAYSIA

1120 - 1140 4E.08  P0472
Voltage Sag Mitigation using NAS Battery-based Standby Power Supply
Universiti Tenaga Nasional, MALAYSIA
*TNB Research Sdn Bhd, MALAYSIA

1140 - 1200 4E.09  P0561
Design and Implementation of a Hybrid Series Active Power Filter
C C Hua, C W Chuang
National Yunlin University of Science and Technology, TAIWAN

Session 4F

Session Title : Applications in Power Systems
Session Chair  : Pekik Argo DAHONO
K P BASU
Date          : 1 December 2005, Thursday
Time          : 08:40 - 12:00
Venue         : Seminar Room 6

0840 - 0900 4F.01  P0496
Determination of Total Transfer Capability Incorporating FACTS Devices in Power Markets
G Li, M Zhou, Y Gao
North China Electric Power University, CHINA

0900 - 0920 4F.02  P0445
Inductively Loaded Current Controlled Solid-State Lead-Lag Var Compensator: Special Feature
and Performance
P Shadhu Khan, *J Chatterjee, G Ramasamy
Multimedia University, MALAYSIA
*Indian Institute of Technology, Delhi, INDIA

0920 - 0940 4F.03  P0546
Switching DC Excitation System on Harmonic-Current Amplification of Self-Excited Wind
Induction Generators (WIG)
Research on Flywheel Energy Storage System using in Power Network
J Zhang
North China Electric Power University, CHINA

Thyrister based Sequential Switching of Transmission line Improves Power System Stability
B K P, N M H
Multimedia University, MALAYSIA

Assessment Study of Shunt FACTS Devices for Improving Dynamic Behavior of Induction Motors
M Hedayati, *H Oraee
Islamic Azad University, IRAN
*Sharif University of Technology, IRAN

Design and Operation of SVC for Voltage Support at Mussafah Substation in Abu Dhabi
J Arai, T Murao, T Karube, K Takagi, *M Ibrahim, **A Atiah, **Y Moriura
Toshiba Corporation, JAPAN
*TRANSCO, UNITED ARAB EMIRATES
**Toshiba Mitsubishi-Electric Industrial Systems Corporation, JAPAN

Two Control Schemes to Control Flow of Current Using Series Connected PWM-Voltage-Sourced Converter
F Al Jowder
University of Bahrain, BAHRAIN

Research on Super Capacitor Energy Storage System for Power network
J Zhang
North China Electric Power University, CHINA

Session 5A

Session Title : Motor Design 2
Session Chair : Muhammed Faz RAHMAN
Gobbi RAMASAMY
Date : 1 December 2005, Thursday
Time : 14:00 - 17:20
Venue : Seminar Room 1

Double Side Interior Permanent Magnet Linear Synchronous Motor and Drive System
N Misron, K C Wong, N Mariun, *W Hiroyuki
Universiti Putra Malaysia, MALAYSIA
*Shinshu University, JAPAN

Design and Experiments of Two Glued Axially-Laminated Synchronous Reluctance Permanent Magnetic Motors
W Guo, Z Zhao
1440 - 1500 5A.03  P0227
160,000-r/min, 2.7-kW Electric Drive of Supercharger for Automobiles
T Noguchi, Y Takata, *Y Yamashita, *S Ibaraki
Nagaoka University of Technology, JAPAN
*Mitsubishi Heavy Industries, JAPAN

1500 - 1520 5A.04  P0640
Design of a Linear Permanent Magnet Synchronous Motor with Extra Low Force Pulsations
A Hassanpour Isfahani, S Vaez-Zadeh
University of Tehran, IRAN

1520 - 1540 5A.05  P0454
Simulation of Internal Faults in Permanent Magnet Synchronous Machines
A A Ali, J Regnier, J Faucher, B Dagues
Laboratoire d'Electrotechnique et d'Electronique Industrielle, FRANCE

1600 - 1620 5A.06  P0453
Comparison of Core Loss Prediction Methods for the Interior Permanent Magnet Machine
R Dutta, M F Rahman
The University of New South Wales, AUSTRALIA

1620 - 1640 5A.07  P0436
Analysis of the Pole Numbers on Flux and Power Density of IPM Synchronous Machine
C Zhao, H Qin, Y Yan
Nanjing University of Aeronautics and Astronautics, CHINA

1640 - 1700 5A.08  P0337
Thrust Density Characteristics of Linear DC Motor
N Misron, *N A Awaludin, J I Syed, N Manjun, **H Yutaka
Universiti Putra Malaysia, MALAYSIA
*Kuala Lumpur Infrastructure University College, MALAYSIA
**Hirama Institute of Professional Engineering, JAPAN

1700 - 1720 5A.09  P0414
Design and Analysis of a Permanent Magnet Claw Pole/Transverse Flux Motor with SMC Core
Y G Guo, J Zhu, H Lu
University of Technology Sydney, AUSTRALIA

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Session 5B

Session Title : Modulation Techniques
Session Chair : Sandor HALASZ
                Don Mahinda VILATHGAMUWA
Date : 1 December 2005, Thursday
Time : 14:00 - 17:40
Venue : Seminar Room 2

1400 - 1420 5B.01  P0637
A Simple On-line SHE PWM With Extension to Six Step Mode in Two-Level Inverters
N V Nho, *M J Youn
Hochiminh City University of Technology, VIETNAM
*Korea Advanced Institute of Science and Technology, KOREA

1420 - 1440 5B.02  P0201
Analysis of the Optimal Voltage Spectrum in RPWM Tables

H C Chen, Y C Chang, J D Lin
Industrial Technology Research Institute, TAIWAN

1440 - 1500 5B.03  P0455
Realization Study of Class D Power Amplifier by Sigma-Delta Modulation
Tung Nan Institute of Technology, TAIWAN
*National Taiwan University of Science and Technology, TAIWAN

1500 - 1520 5B.04  P0208
Random Pulse-Width Modulated Neutral-Point-Clamped Inverter with Reduced Common-Mode Switching
P C Loh, D M Vilathgamuwa, F Gao, C J Gajanayake, L W Gay, P F Leong
Nanyang Technological University, SINGAPORE

1520 - 1540 5B.05  P0383
Selective Harmonic Elimination Techniques for Multilevel Cascaded H-Bridge Inverters
E Guan, P Song, M Ye, *B Wu
East China Jiaotong University, CHINA
*Ryerson University, CANADA

1600 - 1620 5B.06  P0579
Modulation and Control of a Three-Level Class-D Audio Power Amplifier
S H Yu, M H Tseng
National Sun Yat-Sen University, TAIWAN

1620 - 1640 5B.07  P0567
Analysis of Discontinuous PWM Strategies of Three-Level Inverters (II)
S Halasz
Budapest University of Technology and Economics, HUNGARY

1640 - 1700 5B.08  P0470
Development of a DSP-bazded Fuzzy PI Controller for an Online Optimal PWM Control Scheme for a Multilevel Inverter
N Azli, S N Wong
Universiti Teknologi Malaysia, MALAYSIA

1700 - 1720 5B.09  P0348
SPWM-An Analytical Characterization, and Performance Appraisal of Power Electronic Simulation Softwares
S Jeevananthan, P Dananjayan, S V San
Pondicherry Engineering College, INDIA

1720 - 1740 5B.10  P0471
Analysis of Natural Sampled PWM Switching Strategy for a Cascaded Multilevel Inverter using Double Integral Fourier Method
A Mohamad Razali, *Z Salam
Kolej Universiti Teknikal Kebangsaan Malaysia, MALAYSIA
*Universiti Teknologi Malaysia, MALAYSIA
Session 5C

Session Title : PE Applications 2
Session Chair : Don Mahinda VILATHGAMUWA
Ahmad Maliki OMAR
Date : 1 December 2005, Thursday
Time : 14:00 - 17:00
Venue : Seminar Room 3

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Development of 13-V, 5000-A DC Power Supply with High-Frequency Transformer Coupling
Applied to Electric Furnace
T Noguchi, K Nishiyama, *Y Asai, *T Matsubara
Nagaoka University of Technology, JAPAN
*MACOHO Co Ltd, JAPAN

1420 - 1440 5C.02  P0589
Application of Load Current Forward Compensating in Digital Voltage Regulation for Doubly
Salient Brushless DC Generator
L Wang, X Cao, Z Zhang, Y Yan
Nanjing University of Aeronautics and Astronautics, CHINA

1440 - 1500 5C.03  P0521
Design of Smart Charger for Series Lithium-ion Batteries
M F Mohd Elias, K Mohamed Nor, A K Arof
University of Malaya, MALAYSIA

1500 - 1520 5C.04  P0161
Scott-Connected Autotransformer Based Multipulse AC-DC Converters for Power Quality
Improvement In Vector Controlled Induction Motor Drives
B Singh, G Bhuvaneswari, *V Garg
Indian Institute of Technology, Delhi, INDIA
*Indian Railways, INDIA

1520 - 1540 5C.05  P0185
UPS Outage-Mode Output Power Capacity Expansion Approach via Bi-directional Converter
J L Shyu
Kao Yuan Institute of Technology, TAIWAN

1600 - 1620 5C.06  P0193
A New Approach to the Modulation and DC-Link Balancing Strategy of Modular Multilevel AC/AC
Converters
M Tavakoli Bina, H Mohammadi Pirouz, K Kanzi
K. N. Toosi University of Technology, IRAN

1620 - 1640 5C.07  P0660
Multi-Level Active Filter for Medium Voltage Applications
M Rastogi, P Hammond, S Simms
Siemens Energy & Automation, Inc., UNITED STATES

1640 - 1700 5C.08  P0200
Eighteen-Pulse AC-DC Converter for Harmonic Mitigation in Vector Controlled Induction Motor
Drives
B Singh, G Bhuvaneswari, *V Garg
Indian Institute of Technology, Delhi, INDIA
*Indian Railways, INDIA
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Session Title : Converters Control 3
Session Chair : Ramesh ORUGANTI
Mustafar Kamal HAMZAH
Date : 1 December 2005, Thursday
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Venue : Seminar Room 4

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R Kayalvizhi, S P Natarajan, P Padmaloshani, R Vijayarajeswaran
Annamalai University, INDIA

1420 - 1440 5D.02  P0206
Energy Based Switching Control Scheme for DC-DC Buck-Boost Converter Circuits
P Gupta, A Patra
Indian Institute of Technology, Kharagpur, INDIA

1440 - 1500 5D.03  P0207
Modeling, Analysis, Simulation and Design Optimization (Genetic Algorithm) of DC-DC
Converter for Uninterruptible Power Supply Applications
C K Chew, S R R Kondapalli
Universiti Sains Malaysia, MALAYSIA

1500 - 1520 5D.04  P0142
Implementation of Single-Phase Matrix Converter as a Direct AC-AC Converter Synthesized
using Sinusoidal Pulse Width Modulation with Passive Load Condition
Z Idris, M K Hamzah, A M Omar
Universiti Teknologi Mara, MALAYSIA

1520 - 1540 5D.05  P0253
Variable On-time Control of the Critical Conduction Mode Boost Power Factor Correction
Converter to Improve Zero-crossing Distortion
J W Kim, S M Choi, K T Kim
Fairchild Semiconductor, KOREA

1600 - 1620 5D.06  P0433
Deadbeat Current Controller of Front-end Converter with State-Observer based Predictor
H V Luu, P Buechner, V Miuller, P N Lan
Dresden University of Technology, GERMANY

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X Liu, X Yang, J Jiang, X Cai
Shanghai Jiaotong University, CHINA

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Modelling & Simulation of a new Single-phase to Single-phase Cycloconverter based on Single-
phase Matrix Converter Topology with Sinusoidal Pulse Width Modulation Using
MATLAB/Simulink
Z Idris, M K Hamzah, N R Hamzah
Universiti Teknologi Mara, MALAYSIA

1700 - 1720 5D.09  P0583
Voltage Regulator Modules with Double-Loop Relay Feedback Control
S H Yu, C L Huang
National Sun Yat-Sen University, TAIWAN

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Session Chair: Junji TAMURA
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Time: 14:00 - 17:40
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M H Ali, T Murata, J Tamura
Kitami Institute of Technology, JAPAN

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Wind Farm Stabilization by Doubly-Fed Synchronous Wind Generator
Kitami Institute of Technology, JAPAN
*Hitachi Laboratory, JAPAN
**Hitachi, Ltd, JAPAN

1440 - 1500 5E.03  P0225
A Bi-directional Charge Equalization Circuit for Series-connected Batteries
Y C Hsieh, *C S Moo, *W Y Ou-Yang
Kao Yuan University, TAIWAN
*National Sun Yat-Sen University, TAIWAN

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Stabilization of Grid Connected Wind Generator by STATCOM
S M Muyeen, M Abdul Mannan, M H Ali, R Takahashi, T Murata, J Tamura
Kitami Institute of Technology, JAPAN

1520 - 1540 5E.05  P0525
Control of Induction Generator in a Wells Turbine Based Wave Energy System
S Srinivasa Rao, B K Murthy
National Institute of Technology, Warangal, INDIA

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A Calculation Metod of the Total Efficiency of Wind Generator
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C C Hua, P K Ku
National Yunlin University of Science and Technology, TAIWAN

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Run Single Phase Induction Motor
Y S Lee, T T Yang, M W Cheng
Fu Jen Catholic University, TAIWAN

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An ESR Meter for High Frequencies
A Amaral, *A Cardoso
Polytechnic of Coimbra, PORTUGAL
*University of Coimbra, PORTUGAL

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Niroo Research Institute, IRAN

1500 - 1520 5F.04  P0191
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Y S Lee, Y L Liang, M W Cheng
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Very Fast Measurement of Speed by Rotating Magnetic Field
M S J Asghar, A Tariq, S J Anf
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H Wang, F Liu, H Zhang, S Zheng
Yanshan University, CHINA

BMF Fuzzy Neural Network with Genetic Algorithm for Forecasting Electric Load
Y S Lee, C H Kao, W Y Wang
Fu Jen Catholic University, TAIWAN

Real-Time Power Quality Monitoring System Based on TMS320CV5416 DSP Processor
A R Abdullah, *A Z Sha’ameri
Kolej Universiti Teknikal Kebangsaan Malaysia, MALAYSIA
*Universiti Teknologi Malaysia, MALAYSIA

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M A Rafiq, M Datta, M G Sarwer, B D C Ghosh
Khulna University of Engineering and Technology, BANGLADESH

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R Pei, Y Fang
Baoshan Iron & Steel Co Ltd, CHINA

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A Simplified Analytical Averaged Model of a Thyristorized Commutatorless Series Motor
K Mukherjee, *S Sengupta, *T K Bhattacharya, **A K Chattopadhyay, ***S N Bhadra
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*Indian Institute of Technology, Kharagpur, INDIA
**Bengal Engineering and Science University, INDIA
***College of Engineering and Management Kolkata, INDIA

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*Heriot-Watt University, UNITED KINGDOM
**University of Strathclyde, UNITED KINGDOM
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K P P Pillai, M K Idiculla, *A S Nair
College of Engineering Trivandrum, INDIA
*University of Kerala, INDIA

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J H Kim, E W Lee, J H Lee
Chungnam National University, KOREA

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X Xiao, Y Li, M Zhang, Y Liang
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S Kar Chowdhury
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H C Chen, Y C Chang, J D Lin
Industrial Technology Research Institute, TAIWAN

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Y Kumsuwan, *S Premrudeepeeuchacharn, K Oranpioj, **T Boonsai, ***H Toliyat
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*Chiang Mai University, THAILAND
**Rajamangala University of Technology Tanyaburi, THAILAND
***Texas A&M University, UNITED STATES

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S Xue, X Wen
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P Malliband, R Mcmahon
Cambridge University, UNITED KINGDOM

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A Jidin, J Mat Lazi, A R Abdullah, F Patkar, A F Abdul Kadir, M A M Hanafiah
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