
**2010 Korea-Japan Joint Technical Workshop
on Semiconductor Power Converter**

ILLUA HOTEL
HAEUNDAE, BUSAN
OCTOBER 1 - OCTOBER 2, 2010

Sponsored by

THE KOREAN INSTITUTE OF POWER ELECTRONICS (KIPE)
Semiconductor Power Converter (SPC) Technical Committees of
Industry Application Society, IEE of Japan

FRIDAY OCTOBER 1, 2010

2:00 pm - 4:00 pm

Oral Session I

Session Chairs:

Tae-Won Chun (University of Ulsan)

Hirohito Funato (Utsunomiya University)

2:00 pm - 2:40 pm

O1.1 High Speed 2-phase Switched Reluctance Motor Drive

Jin Woo Ahn; Kyungsoong University, Korea

2:40 pm - 3:20 pm

O1.2 A New Bidirectional Isolated Converter Based on Series Connection of High Frequency Transformer for AC to AC Power Conversion

Myoung-ho Kim, Anno Yoo, and Seung-Ki Sul; Seoul National University, Korea

3:20 pm - 4:00 pm

O1.3 Hybrid Communication Protocol Based PWM Generation for Matrix Converter

Tae-Woong KIM, Dong-Yeong MO; Gyeongsang National University

4:00 pm - 4:30 pm

Break

FRIDAY OCTOBER 1, 2010

4:30 pm - 6:30 pm

Oral Session II

Session Chairs:

Tae-Won Chun (University of Ulsan)

Hirohito Funato (Utsunomiya University)

4:30 pm - 5:10 pm

O2.1 A Single-Phase Grid-Connected Inverter with Power Decoupling Function

Toshihisa Shimizu , Shingo Suzuki; Tokyo Metropolitan University

5:10 pm - 5:50 pm

O2.2 Survey of Dual Active Bridge DC-DC converters at YNU

Giuseppe Guidi*, Martin Pavlovsky*, Atsuo Kawamura*, Tomofumi, Imakubo**, Yuji. Sasaki**; *Yokohama National University,**IHI Corporation

5:50 pm - 6:30 pm

O2.3 Dynamic Modeling for PMSM with Inter Turn Winding Fault

Ilsu Jeong*, Kwanghee Nam*, Bon-Gwan Gu** and In-Sung Jung**; *POSTECH, *Intelligent Mechatronics Research Center

6:30 pm - 7:00 pm

Break

7:00 pm - 9:00 pm

Banquet

SATURDAY OCTOBER 2, 2010

8:30 am – 10:00 am

Poster Session I

Session Chairs:

Jangmok Kim (Pusan National University)

Tomoki Yokoyama (Tokyo denki University)

P1.1 Discussion on Loss Minimization for Inverter Driven Permanent Magnet Motors

Yuki Watanabe, Atsuo Kawamura; Yokohama National University

P1.2 Sensorless Control of PMSG for Wind Power Generation System Using an Extended EMF Method

Jung-Han Kim, Ji-Yoon Yoo, Kwang-Woon Lee; Korea University

P1.3 A new SRM drive method by using a current source inverter

Gaku Ando, Kan Akatsu; Shibaura Institute of Technology

P1.4 Development of BLDC Sensorless Control System for Vehicle Fuel Pump

Tae-Won Chun*, Hong-Hee Lee*, Heung-Geun Kim **, and Eui-Cheol Nho***; *Dept. of Electrical Eng., University of Ulsan
** Kyungpook University, ***Pukyong University

P1.5 Loss Evaluation of HF-Inverter for Inductive Power Transfer System

Koji Takuzaki, Kazuyuki Iimura, Nobukazu Hoshi; Tokyo University of Science

P1.6 Compensation of Analog Rotor Position Errors due to Nonideal Sinusoidal Encoder Output Signals

S. H. Hwang, H. W. Yoo, J. S. Kim, H. W. Jung, and J. M. Kim; Pusan National University

- P1.7 Maximum Power Point Tracking of Wind Power Generator with Inverter Excited Induction Machine at Constant Tip Speed Ratio**
Noriyuki Kimura, Kenichi Nakatani, Takashi Koya, Toshimitsu Morizane; Osaka Institute of Technology
- P1.8 Harmonics Compensation for Stand-Alone DFIG Systems Using PI-R Controller in the Fundamental Reference Frame**
Van-Tung Phan, Hong-Hee Lee, Tae-Won Chun; University of Ulsan
- P1.9 Loss analysis of 5-level Active NPC Inverter using phase-shift control method**
Jun-ichi Itoh, Yugo kashihara; Nagaoka University of Technology
- P1.10 Novel H-bridge Multi-level Inverter with DC-link Switches**
Min-Young Park*, Jong-Hyoung Park*, Heung-Geun Kim*, Tae-Won Chun** and Eui-Cheol Nho***; *Kyungpook National University, **University of Ulsan, ***Pukyong National University
- P1.11 PWM Pattern Selection Method of Matrix Converters for Suppressing Input Current Harmonics**
Kotaro Deguchi, Takaharu Takeshita; Nagoya Institute of Technology
- P1.12 Power Loss Analysis of Flyback Inverter for Photovoltaic AC Module Systems**
Young-Ho Kim, Doo-Yong Jung, Jun-Gu, Kim, Yong-Hyok Ji, Sang-Hoon Park, Chung-yuen Won; University of Sungkyunkwan
- P1.13 Investigation on Single-Phase to Three-Phase Indirect Matrix Converter**
Hiromichi OHYAMA, Yasuyuki NISHIDA; Chiba Institute of Technology
- P1.14 MPPT Method using Rotor Inertial Energy in DFIG Wind Turbine Systems**
Kyung-Hyun Kim and Dong-Choon Lee; Yeungnam University

P1.15 Single stage Battery charging system for PHEV and EV using PWM buck converter

Keun-Young Kim¹, Sang-Hoon Park², Taeck-Kie Lee³, and Chung-Yuen Won⁴; ^{1,2,4}Sungkyunkwan University, ³HanKyong National University

SATURDAY OCTOBER 2, 2010

10:30 pm – 12:00 pm

Poster Session II

Session Chairs:

Jangmok Kim (Pusan National University)

Tomoki Yokoyama (Tokyo denki University)

P2.1 High-Efficiency Grid-Tied Power Conditioning System for Fuel Cell Power Generation

Byung Moon Han; Myongji University

P2.2 Project-Based-Learning of a Power Electronics System by Constructing a Radio Controlled Solar Car

Mikihiko MATSUI; Tokyo Polytechnic University

P2.3 Electric Vehicles Charger Station Management Algorithm Based on Lithium Polymer Battery Energy Storage System

Doo-Yong Jung¹, Yong-Hyok Ji¹, Young-Ho Kim¹, Sang-Hoon Park¹,
Chung-yuen Won¹, Taek-Kie Lee²; ¹University of Sungkyunkwan
²Hankyong National University

P2.4 Total Efficiency Improvement of EV Power Train by Series Chopper

Sota Tsutsuki*, Yuki Watanabe*, Giuseppe Guidi**, Atsuo Kawamura**;
*Kanagawa Academy of Science and Technology (KAST), **Yokohama National University

- P2.5 Nonlinear Load Compensation using DFT for PV System**
 Jae-Hyung Kim¹, Su-Won Lee², Seong-Ryong Lee³, Tae-Won Lee⁴ and Chung-Yuen Won^{1*}; ¹Sungkyunkwan University, ²Center for Advanced IT HRD with close Industry Cooperation, ³Kunsan National University, ⁴SAMSUNG ELECTRO-MECHANICS CO.
- P2.6 Digitally Controlled LLC Resonant Converter**
 Koji Murata, Taku Ishibashi and Fujio Kurokawa; Nagasaki University
- P2.7 Analysis and Design of High-current Inverter-type Rectifier with High-efficiency Output Side**
 In-Dong Kim, Senior Member, IEEE, Won-Woo Cho, Jin-Young Kim, Eui-Cheol Nho, *Heung-Geun Kim; Pukyong National University, *Kyungpook National University
- P2.8 A New Peak-Current Injected Digital Control DC-DC Converter**
 Yoshihiko Komichi, Taku Ishibashi and Fujio Kurokawa; Nagasaki University
- P2.9 Cost-effective Voltage Disturbance Generator Applicable to Linear and Nonlinear Loads**
 Eui-Cheol Nho¹, Jae-Hun Jung¹, Woong-Hyub Song¹, In-Dong Kim¹, Tae-Won Chun², and Heung-Geun Kim³; ¹Pukyong National University, ²University of Ulsan, ³Kyungpook National University
- P2.10 Characteristics of Current Control using Digital Hysteresis Control with LCL Filter Suitable for Single Phase Utility Interface**
 Kenji Nemoto, Hirohito Funato, Ryota Ichikawa; Utsunomiya University
- P2.11 Recent Advances and Applications of Z-Source Inverters**
 Honnyong Cha and Dongwook Yoo; Korea Electrotechnology Research Institute(KERI)

P2.12 A Basic Study of Parallel Operation Method for UPS using Precision Time Protocol in Industrial Networks

Sho Kojima, Tomoki Yokoyama; Tokyo Denki University

P2.13 Efficiency Analysis for Heat-sink of Thyristor

Chan-Ki Kim; KEPRI

P2.14 PSIM Simulator for Analysis of HEV Operation

Deokyoung Lim*, Jaekwan Im*, Jaeho Choi*, Gyo-Bum Chung**;
Chungbuk National University, Hongik University