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Co-Chair: Katsuichi Yotsumoto, General Chair, INTELEC ’03
Co-Chair: Mark Jacobs, Chair, INTELEC CEC

PLENARY SESSION
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Co-Chair: Jun-ichi Yamaki, Kyushu Univ., Japan

   The Future of Mobile Communications
   Keiji Tachikawa: NTT DoCoMo, Japan
TECHNICAL PROGRAM

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Co-Chair: Yoji Sakurai, NTT Microsystem Integration Labs., Japan

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Jun-ichi Yamaki, Masayuki Ihara and Shigeto Okada: Kyushu Univ., Japan

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### SESSION 12: Power Generation & Storage Systems 1

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Co-Chair: Kevin J. Fellhoelter, Solara, USA  
Co-Chair: Noboru Asano, Shindengen, Japan

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Tuesday, October 21
11:00 AM - 12:30 PM

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Co-Chair: Takashi Nabeshima, Oita Univ., Japan

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11:30 13-2 A New Method for Driving Synchronous Rectifiers
Martin Plesnik: Nortel Networks, Canada

12:00 13-3 Analysis & Modeling of a Self-Sustained Oscillation Series-Parallel Resonant Converter with Capacitive Output Filter Using Sampled-Data Analytical Technique
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Tetsuya Oshikata: Shindengen, and Hirofumi Matsuo and Fujio Kurokawa: Nagasaki Univ., Japan

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Tatsuya Hosotani: Murata Manufacturing, and
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TECHNICAL PROGRAM

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Masakazu Gekinozu and Seiki Igarashi: Fuji Electric, and
Norihisa Miura and Kunihiko Karube: Fuji Electric Hi-Tech, Japan

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Mutsuo Ishikawa and Kiyoto Yasui: Niwa Electric, Japan
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11:00 23-1 IEC 60896-22 The Technical Requirements for Stationary VRLA Batteries
Herbert Giess: Oerlikon Stationary Batteries, Switzerland, and
Mark Kniveton: British Telecom plc, UK

11:30 23-2 Corrosion and Premature Capacity Loss of Standby Telecommunications Batteries
- The Way Forward for Service Providers
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Naotoshi Sekiguchi: Ibaraki National College of Tech., and
Yasuhide Kouchi: Hinode Construction, Japan

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TECHNICAL PROGRAM

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2:00 - 3:30 PM

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2:00 25-1 Analysis of Leakage-Inductance Effect on Characteristics of Flyback Converter without Right Half Plane Zero
Hiroto Terashi: Densei-Lambda, and
Tamotsu Ninomiya: Kyushu Univ., Japan

2:30 25-2 V* Control of Cascade Buck Converters
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Yungtaek Jang and Milan M. Jovanovic: Delta Products, USA

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Tohru Iwade, Shinji Komiyama, Yoshihiro Tanimura, Masao Yamanaka, Makoto Sakane and Katsuya Hirachi: Yuasa, Japan

2:30 26-2 Theoretical and Experimental Verification of Independent Control for Parallel-Connected Multi-UPS's
Eduardo Kazuhide Sato and Atsuo Kawamura: Yokohama National Univ., and
Ryo Fujii: Hitachi Industrial Equipment Systems, Japan

3:00 26-3 Development of a Novel Parallel Redundant UPS
Hiroyuki Hanaoka, Masahiko Nagai and Minoru Yanagisawa: Sanyo Electric, Japan
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Co-Chair: Masaji Sato, NTT Docomo, Japan

2:00 27-1 Common-Mode Noise Reduction by Current Cancellation in Balanced Buck-Boost Switching Converter
Masahito Shoyama, Masashi Ohba and Tamotsu Ninomiya: Kyushu Univ., Japan

2:30 27-2 Noise Reduction Mechanism in Common-Source Type Active-Clamped DC-DC Converters
Ge Li, Masahito Shoyama and Tamotsu Ninomiya: Kyushu Univ., Japan

3:00 27-3 Amplitude Modulation Effect of DC-DC Converter Noise on CMOS Logic Signal Transmission in Microstrip PCB
Ken-ichi Nishijima: Hakko Electronics, and
Toshiro Sato and Kiyohito Yamasawa: Shinshu Univ., Japan

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Co-Chair: Tadahito Aoki, NTT, Japan

2:00 28-1 The Development of Distributed Power System for Driving Plasma Display Panel Television
Oh-Joon Kwon, Byoung-Seon Yoo, Chan-Ho Kang and Seung-Hoon Woo: Dongah Elecomm,
Chang-Sun Kim: Mokpo National Univ., and
Hee-Jun Kim: Hanyang Univ., Korea

2:30 28-2 Overvoltages on the AC Ports of DC Power Systems
José-Claudio de Oliveira e Silva: Emerson Sistemas de Energia, Brazil, and
Nils Bäckman: Emerson Energy Systems, Sweden

3:00 28-3 Simulation Analysis of AC Power Supply System Stability
Toru Tanaka and Mikio Yamasaki: NTT Energy and Environment Systems Labs., Japan
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Co-Chair: Serguei Moisseev, Yamaguchi Univ., Japan
Co-Chair: Toshiyuki Zaitsu, TDK Innoveta, Japan

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4:30 29-2 Suitability of Pulse Train™, a Novel Digitally Implemented Real-Time Control Technique, for BIFRED Converter
M. Ferdowsi and Ali Emadi: Illinois Inst. of Tech., and M. Telefus and A. Shteynberg: iWatt, USA

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Fujio Kurokawa, Seilchi Hiura and Hirofumi Matsuo: Nagasaki Univ., Masahiro Sasaki: Shindengen, Japan

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G. Capponi, P. Livreri and G. M. Di Blasi: Univ. of Palermo, and F. Marino and E. Cannella: STMicroelectronics, Italy

SESSION 30: Single-Phase Rectifiers 3
Room 302
Co-Chair: Leo Lorenz, Infineon Technology Munich, Germany
Co-Chair: Yoshiyuki Ishihara, Doshisha Univ., Japan

4:00 30-1 Bifurcation Analysis of Pre-Regulator PFC Boost Converter
Mohamed Orabi and Tamotsu Ninomiya: Kyusyu Univ., Japan

4:30 30-2 Stability Investigation of the Cascade Two-Stage PFC Converter
Mohamed Orabi and Tamotsu Ninomiya: Kyushu Univ., Japan

5:00 30-3 Modeling and Control Strategy for a Single-phase PWM Rectifier Using a Single-phase Instantaneous Active/Reactive Power Theory
Makoto Saito and Nobuyuki Matsui: Nagoya Inst. of Tech., Japan

5:30 30-4 Analysis and Design of a Battery Charger with Interleaved PFC Based on an Asymmetrical Half-Bridge Topology
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Room 303

Co-Chair: Daniel P. McMenamin, Dan McMenamin and Associates, USA
Co-Chair: Hirokazu Tohya, NEC, Japan

4:00  31-1  Design and Characteristics of Common-Mode Choke Coil for High-Speed LAN Port Using UTP Cable
Nobuo Kuwabara: Kyushu Inst. of Tech., and
Fujio Amemiya and Hiroyuki Asou: NTT Advanced Tech., Japan

4:30  31-2  Input Invariance as a Method to Reduce EMI Filter Interactions in Telecom DPS Systems
Teuvo Suntio: Univ. of Oulu, Finland

5:00  31-3  Application of FDTD Method for Dielectrics Substrate of U-Shaped Slot Antenna Fed by Microstrip Line
N. Anantrasirichai, P. Charkrit and K. Narkcharoen:
King Mongkut's Inst. of Tech. Ladkrabang, Thailand, and
Toshio Wakabayashi: Tokai Univ., Japan

SESSION 32: Special Application of DC-DC Converters

Room 304

Co-Chair: Hee-Jun Kim, Hanyang Univ., Korea
Co-Chair: Toru Higashi, Kumamoto Univ., Japan

4:00  32-1  Analysis of a Novel Horizontal Output Power Supply Circuit with Distortion Correction for Television Receivers
Yoichi Ishizuka and Hirofumi Matsuo: Nagasaki Univ., and
Masashi Ochiai: Toshiba, Japan

4:30  32-2  Analysis of a Novel Drive Circuit for Bipolar Transistor Switches in DC-DC Converters
Ryoji Osabe: Toshiba Logistic Support, and
Hirofumi Matsuo: Nagasaki Univ., Japan

5:00  32-3  Digital-FM Transmission and Reception in a New Wire-Communication System That Utilizes DC-DC Converter as Transmitter
Akihiko Katsuki, Tadashi Matsumoto, Takaaki Eto and Yukinori Hashimoto:
Kyushu Inst. of Tech., Japan

5:30  32-4  A Dickson-Type Power Converter with Bootstrapped Gate Transfer Switches
Kei Eguchi and Toru Tabata: Kumamoto National College of Tech.,
Hongbing Zhu: Hiroshima Kokusai Gakuin Univ., and
Fumio Ueno: Sojo Univ., Japan
TECHNICAL PROGRAM

Thursday, October 23

9:00 - 10:30 AM

SESSION 33: Soft Switching DC-DC Converters 1

Room 301

Co-Chair: Takashi Nabeshima, Oita Univ., Japan
Co-Chair: Haruo Watanabe, Shindengen, Japan

9:00 33-1 Power-Loss Reduction of Transformer In Push-pull Edge-Resonant Converter
Hiroyasu Kitamura and Hideaki Abe: Matsushita Electric Works, and
Tamotsu Ninomiya: Kyushu Univ., Japan

9:30 33-2 Analysis and Design Considerations for a Novel ZVS DC/DC Converter
D. Z. Jiao, J. M. Zhang, X. G. Xie and Zhaoming Qian: Zhejiang Univ., China

10:00 33-3 Effects of Magnetizing Inductance on Active-clamped Forward Converters
Masahito Jinno, Jiann-Chern Sheen and Po-Yuan Chen: I-Shou Univ., Taiwan

SESSION 34: Soft Switching Inverters

Room 302

Co-Chair: Daniel P. McMenamin, Dan McMenamin and Associates, USA
Co-Chair: Toshihisa Shimizu, Tokyo Metropolitan Univ., Japan

9:00 34-1 Voltage Source-Fed Sinewave PWM Inverter with Novel Pulse Current Regenerative Resonant Snubber Cells for Telecommunication Energy
Mantaro Nakamura, Tarek Ahmed and Mutsuo Nakaoka: Yamaguchi Univ., Japan

9:30 34-2 Three-Phase Bridge Power Block Module Type Auxiliary Resonant AC Link Snubber-Assisted Soft Switching Inverter for Distributed AC Power Supply
Hisashi Iyomori, Masanobu Yoshida and Mutsuo Nakaoka: Yamaguchi Univ., and
Shinichiro Nagai, Shinji Sato and Tetsuhiko Ohno: Sanken Electric, Japan

10:00 34-3 Two Switch Auxiliary Quasi-Resonant DC Link Three-phase PWM Inverter and Two Switch Auxiliary Resonant Commutated Pole Link Three-Phase PWM Rectifier
Shinichiro Nagai and Shinji Sato: Sanken Electric, and
Masayoshi Yamamoto and Mutsuo Nakaoka: Yamaguchi Univ., Japan
SESSION 35: Battery Management

Room 303
Co-Chair: Herbert Giess, Oerlikon Stationary Batteries, Switzerland
Co-Chair: Masahiro Ichimura, NTT-BTI, Japan

9:00 35-1 Development of SOH Monitoring System for Industrial VRLA Battery String
Kiyoshi Takahashi and Yuichi Watakabe: Furukawa Battery, Japan

9:30 35-2 A Novel Approach to Managing Battery Capacity and Lifecycle - Based on: Climate, Environment and Usage Type
David Walthew: Silcar Telepower, Australia

10:00 35-3 A Non-dissipative Reflex Charging Circuit
Yao C. Hsieh, Chin S. Moo, Chih K. Wu and Jung C. Cheng: National Sun Yat-sen Univ., Taiwan

SESSION 36: New Powering Technologies & Reliability 2

Room 304
Co-Chair: Christopher O. Riddleberger, Consulting Engineer, USA
Co-Chair: Saburo Kuwajima, NASDA, Japan

9:00 36-1 Power Density vs Reliability - The Cost to the Broadband Network
Francis Alecks and Warren Hill: Saft Power Systems, UK

9:30 36-2 Optimizing DC Power Distribution Network Stability Using Root Locus Analysis
Boštjan Bitenc and Thomas Seltz: Siemens Information & Communication Networks, Germany
TECHNICAL PROGRAM
Thursday, October 23
11:00 AM - 12:30 PM

SESSION 37: Soft Switching DC-DC Converters 2
Room301
Co-Chair: Masahito Shoyama, Kyushu Univ., Japan
Co-Chair: Ryoji Saito, Origin Electric, Japan

11:00  37-1  Two-Switch Flyback Transformer Soft Switching PWM DC-DC Converter with Passively Energy Regeneration Lossless Snubbers
Yoshihiro Konishi, Claudio Y. Inaba, and Mutsuo Nakaoka: Yamaguchi Univ., Japan

11:30  37-2  Analysis and Design of a Soft-Switching Interleaved Forward Converter for Generating Pulsed Electric Fields

SESSION 38: Inverter Applications
Room302
Co-Chair: Tarek Ahmed, Yamaguchi Univ., Japan
Co-Chair: Seiichi Muroyama, NTT Facilities, Japan

11:00  38-1  Class E Inverter Using Thinned-out Method
Muzafar Bin Mohd Yusoff, Hiroo Sekiya, Jianming Lu, and Takashi Yahagi: Chiba Univ., Japan

11:30  38-2  Actual Efficiency and Electromagnetic Noises Evaluations of a Single Inductor Type Resonant AC Link Snubber-Assisted Three-Phase Soft-Switching Inverter
Masanobu Yoshida, Eiji Hiraki, and Mutsuo Nakaoka: Yamaguchi Univ., Japan

12:00  38-3  Application of Soft-Starting Technique to Improve Digital-Dimming Behavior for Backlight Module
Chang-Hua Lin and Kai-Jun Pai: St. John's & St. Mary's Inst. of Tech., and Liang-Rui Chen: National Huwei Inst. of Tech., Taiwan
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Room303
Co-Chair: John M. Hawkins, Telepower Australia, Australia
Co-Chair: Shin Fujitani, Sanyo Electric, Japan

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NTT Energy and Environment Systems Labs., Japan

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C. H. Lin: St. John’s & St. Mary’s Inst. of Tech., Taiwan

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Room304
Co-Chair: John Parsons, British Telecom, UK
Co-Chair: Mikihiko Matsui, Tokyo Polytechnic Univ., Japan

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Room 301
Co-Chair: Hee-Jun Kim, Hanyang Univ., Korea
Co-Chair: Hideho Yamamura, Hitachi, Japan

2:00  41-1  A New Soft-Switched DC-DC Front-End Converter for Applications with Wide-Range
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Room 302
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Co-Chair: Tatsuo Sakai, NTT Energy and Environment Systems Labs., Japan

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<td>New Power Semiconductor Components for AC/DC Power Supply Applications</td>
<td>Leo Lorenz: Infineon Tech. Munich, Germany</td>
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<td>43-2</td>
<td>Thermal Analysis of a Multi-Chip Si/SiC-Power Module for Realization of a Bridge Leg of a 10kW Vienna Rectifier</td>
<td>Uwe Drofenik and Johann W. Kolar: ETH Zurich, Switzerland</td>
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SESSION 44: Monitoring & Facility Management
Room304
Co-Chair: Lars Björkström, Emerson Energy Systems, Sweden
Co-Chair: Takashi Yamashita, NTT Facilities, Japan

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<td>Development of an Advanced Maintenance and Control System with Wide Area Monitoring Function for Telecommunications Power Systems</td>
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CLOSING
Thursday, October 23
4:15 – 5:00 PM
Room 301
Co-Chair: Katsuichi Yotsumoto, General Chair, INTELEC '03
Co-Chair: Charles K. McManus, General Chair, INTELEC 2004