

IEEE TRANSACTIONS ON POWER ELECTRONICS

A PUBLICATION OF THE IEEE POWER ELECTRONICS SOCIETY



JULY 2004

VOLUME 19

NUMBER 4

ITPEE8

(ISSN 0885-8993)

<i>Discrete and Integrated Semiconductors</i>	
Physical CAD Model for High-Voltage IGBTs Based on Lumped-Charge Approach	F. Iannuzzo and G. Busatto 885
Active Voltage Control of IGBTs for High Power Applications	P. R. Palmer and H. S. Rajamani 894
A Thermal Model for Insulated Gate Bipolar Transistor Module	Z. Luo, H. Ahn, and M. A. El Nokali 902
<i>Passive Components and Materials</i>	
Active Current Transformer Circuits for Low Distortion Sensing in Switched Mode Power Converters	N. McNeill, N. K. Gupta, and W. G. Armstrong 908
<i>Low Power Converters</i>	
DC-DC Converter: 4 Switches $V_{pk} = V_{in}/2$, Capacitive Turn-Off Snubbing, ZV Turn-On	I. Barbi, R. Gules, R. Redl, and N. O. Sokal 918
Single-Switch Parallel Power Factor Correction AC-DC Converters With Inherent Load Current Feedback	Q. Zhao, M. Xu, F. C. Lee, and J. Qian 928
Paralleled DSP-Based Soft Switching-Mode Rectifiers With Robust Voltage Regulation Control	S.-H. Li and C.-M. Liaw 937
Zero-Voltage-Switching Half-Bridge DC-DC Converter With Modified PWM Control Method	H. Mao, J. Abu-Qahouq, S. Luo, and I. Batarseh 947
Calculation and Stability Investigation of Periodic Steady States of the Voltage Controlled Buck DC-DC Converter	G. A. Papafotiou and N. I. Margaritis 959
Novel Static Inverters With High Frequency Pulse DC Link	D. Chen and L. Li 971
<i>High Power Converters</i>	
A Unique Fault-Tolerant Design for Flying Capacitor Multilevel Inverter	X. Kou, K. A. Corzine, and Y. L. Familiant 979
Reference Current Estimation Under Distorted Line Voltage for Control of Shunt Active Power Filters	V. M. Moreno, A. P. López, and R. I. Diego Garcías 988
Investigating an LCL Load Resonant Inverter for Inductive Power Transfer Applications	C.-S. Wang, G. A. Covic, and O. H. Stielau 995
<i>Control in Power Electronics</i>	
Theoretical Study and Implementation of a Fast Transient Response Hybrid Power Supply	A. Barrado, R. Vázquez, E. Olías, A. Lázaro, and J. Pleite 1003
A Describing Function for Resonantly Commutated H-Bridge Inverters	I. Sewell, D. A. Stone, and C. Bingham 1010
High-Performance Induction Motor Speed Control Using Exact Feedback Linearization With State and State Derivative Feedback	T. K. Boukas and T. G. Habetler 1022

(Contents Continued on Back Cover)



Power Quality and Utility Applications

An Accurate Approach of Non-Linearity Compensation for VSI Inverter Output Voltage *H. Zhao, Q. M. J. Wu, and A. Kawamura* 1029

A Novel Active Power Quality Compensator Topology for Electrified Railway . . . *Z. Sun, X. Jiang, D. Zhu, and G. Zhang* 1036

A Robust Multilevel Hybrid Compensation System for 25 kV Electrified Railway Applications *P.-C. Tan, P. C. Loh, and D. G. Holmes* 1043

VSC-HVDC Station With SSSC Characteristics. *F. A. Rahman al Jowder and B. T. Ooi* 1053

Odd-Harmonic Digital Repetitive Control of a Single-Phase Current Active Filter *R. Costa-Castelló, R. Griñó, and E. Fossas* 1060

Design and Performance of a Passive EMI Filter for Use With a Voltage-Source PWM Inverter Having Sinusoidal Output Voltage and Zero Common-Mode Voltage *H. Akagi, H. Hasegawa, and T. Doumoto* 1069

Unified Power Flow Controller Using the Cascade Multilevel Inverter *J. Wang and F. Z. Peng* 1077

Power Electronics in Drives

Fuzzy Optimization Techniques Applied to the Design of a Digital PMSM Servo Drive *K.-Y. Cheng and Y.-Y. Tzou* 1085

A Novel Stopping Method for Induction Motors Operating From Variable Frequency Drives. *M. M. Swamy, T. J. Kume, Y. Yukihiro, S. Fujii, and M. Sawamura* 1100

Fault Tolerant Three-Phase AC Motor Drive Topologies; A Comparison of Features, Cost, and Limitations *B. A. Welchko, T. A. Lipo, T. M. Jahns, and S. E. Schulz* 1108

Lighting Applications

A Dynamic Collisional-Radiative Model of A Low-Pressure Mercury–Argon Discharge Lamp: A Physical Approach to Modeling Fluorescent Lamps for Circuit Simulations *K. H. Loo, G. J. Moss, R. C. Tozer, D. A. Stone, M. Jinno, and R. Devonshire* 1117

Renewable Energy

Cascaded DC-DC Converter Connection of Photovoltaic Modules. *G. R. Walker and P. C. Sernia* 1130

Synergetic Control of Power Converters for Pulse Current Charging of Advanced Batteries From a Fuel Cell Power Source *Z. Jiang and R. A. Dougal* 1140

CORRESPONDENCE

Concerning “Instantaneous Power Compensation in Three-Phase Systems by Using $p-q-r$ Theory” *M. Depenbrock, V. Staudt, and H. Wrede* 1151

INFORMATION FOR AUTHORS 1155
