

IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS

A PUBLICATION OF THE IEEE INDUSTRIAL ELECTRONICS SOCIETY

AUGUST 2010

VOLUME 57

NUMBER 8

ITIED6

(ISSN 0278-0046)

SPECIAL SECTION ON MULTILEVEL INVERTERS—PART II

Guest Editorial

M. Malinowski, K. Gopakumar, and J. Rodriguez 2550

SPECIAL SECTION PAPERS

Recent Advances and Industrial Applications of Multilevel Converters	2553
S. Kouro, M. Malinowski, K. Gopakumar, J. Pou, L. G. Franquelo, B. Wu, J. Rodriguez, M. A. Pérez, and J. I. Leon	
Medium-Voltage Multilevel Converters—State of the Art, Challenges, and Requirements in Industrial Applications.	2581
H. Abu-Rub, J. Holtz, J. Rodriguez, and G. Baoming	
Modeling and Control of the Cross-Connected Intermediate-Level Voltage Source Inverter	2597
T. Chaudhuri and A. Rufer	
Three-Phase Cascaded Multilevel Inverter Using Power Cells With Two Inverter Legs in Series	2605
G. Waltrich and I. Barbi	
Five-Level Current-Source Inverters With Buck-Boost and Inductive-Current Balancing Capabilities	2613
F. Gao, P. C. Loh, F. Blaabjerg, and D. M. Vilathgamuwa	
A Different Multilevel Current-Source Inverter	2623
N. Vázquez, H. López, C. Hernández, E. Vázquez, R. Osorio, and J. Arau	
Modulation, Losses, and Semiconductor Requirements of Modular Multilevel Converters	2633
S. Rohner, S. Bernet, M. Hiller, and R. Sommer	
A Single-Phase Multilevel Inverter Using Switched Series/Parallel DC Voltage Sources.... Y. Hindgo and H. Koizumi	2643
Compensation of Nonlinearities in Diode-Clamped Multilevel Converters	2651
S. R. Minshull, C. M. Bingham, D. A. Stone, and M. P. Foster	
An Effective Control Technique for Medium-Voltage High-Power Induction Motor Fed by Cascaded Neutral-Point-Clamped Inverter. B. Ge, F. Z. Peng, A. T. de Almeida, and H. Abu-Rub	2659
A Novel Space-Vector Current Control Based on Circular Hysteresis Areas of a Three-Phase Neutral-Point-Clamped Inverter. T. Ghennam, E. M. Berkouk, and B. François	2669
Hierarchical Control of Bridge-of-Bridge Multilevel Power Converters	2679
D. C. Ludois, J. K. Reed, and G. Venkataramanan	
Model Predictive Control of Multilevel Cascaded H-Bridge Inverters	2691
P. Cortés, A. Wilson, S. Kouro, J. Rodriguez, and H. Abu-Rub	
Fault-Tolerant Design and Control Strategy for Cascaded H-Bridge Multilevel Converter-Based STATCOM. W. Song and A. Q. Huang	2700
S. Ceballos, J. Pou, E. Robles, J. Zaragoza, J. L. Martín	
Performance Evaluation of Fault-Tolerant Neutral-Point-Clamped Converters	2709
L. Zhou and K. M. Smedley	
Postfault Control Strategy for the Hexagram Inverter Motor Drive	2719

(Contents Continued on Page 2549)

请阅后放回:

排架号 E194 处



A High-Performance Multicell Topology Based on Single-Phase Power Cells for Three-Phase Systems Operating Under Unbalanced AC Mains and Asymmetrical Loads	C. R. Baier, J. R. Espinoza, J. A. Muñoz, L. A. Morán, and P. E. Melín	2730
A Simplified Resonant Pole for Three-Level Soft-Switching PFC Rectifier Used in UPS	C. Rizet, J.-P. Ferrieux, P. Le Moigne, P. Delarue, and A. Lacarnoy	2739
Multilevel Optimal Predictive Dynamic Voltage Restorer	J. D. Barros and J. F. Silva	2747
Cascaded Nine-Level Inverter for Hybrid-Series Active Power Filter, Using Industrial Controller.	A. Varschavsky, J. Dixon, M. Rotella, and L. Morán	2761
DC Capacitor Voltage Equalization in Neutral Clamped Inverters for DSTATCOM Application	S. Srikanthan and M. K. Mishra	2768
A Five-Level Inverter Scheme for a Four-Pole Induction Motor Drive by Feeding the Identical Voltage-Profile Windings From Both Sides	K. Sivakumar, A. Das, R. Ramchand, C. Patel, and K. Gopakumar	2776
PAPERS		
<i>Multiphase Systems</i>		
Measurement of the Loop Gain Frequency Response of Digitally Controlled Power ConvertersF. González-Espín, E. Figueres, G. Garcerá, R. González-Medina, and M. Pascual	2785
<i>Machines and Drives</i>		
Realization of Rewinder With a Reduced Number of Sensors	B. I. Jeftenić and M. Z. Bebić	2797
<i>Single-Phase Electronics</i>		
Soft-Switching PS-PWM DC-DC Converter for Full-Load Range Applications	J. Dudrik and N.-D. Trip	2807
<i>Robotics and Mechatronics</i>		
Control of Manipulator Using Pneumatic Muscles for Enhanced Safety	T.-Y. Choi and J.-J. Lee	2815
Mobile Robot Localization Using Biased Chirp-Spread-Spectrum Ranging	H. Cho and S. W. Kim	2826
<i>Actuators and Motors</i>		
Direct Self-Control for BLDC Motor Drives Based on Three-Dimensional Coordinate System	J. Gao and Y. Hu	2836
Research and Application of New Inserted Shape Memory Alloy Actuators	K. Yang	2845
<i>Control and Signal Processing</i>		
A High-Performance CMOS Feedforward AGC Circuit for a WLAN Receiver	J. P. Alegre Pérez, B. Calvo, and S. Celma	2851
A Space-Vector Discrete Fourier Transform for Unbalanced and Distorted Three-Phase Signals	F. A. S. Neves, H. E. P. de Souza, F. Bradaschia, M. C. Cavalcanti, M. Rizo, and F. J. Rodríguez	2858
A Neural-Network-Identifier and Fuzzy-Controller-Based Algorithm for Dynamic Decoupling Control of Permanent-Magnet Spherical Motor	C. Xia, C. Guo, and T. Shi	2868
<i>Diagnosis and Monitoring</i>		
Detection of Broken Bars in Induction Motor Through the Analysis of Supply Voltage Modulation	M. Nemec, K. Drobnič, D. Nedeljković, R. Fišer, and V. Ambrožič	2879
<i>Instrumentation and Sensors</i>		
A Novel Power Supply of Online Monitoring Systems for Power Transmission Lines	L. Du, C. Wang, X. Li, L. Yang, Y. Mi, and C. Sun	2889
<i>Networking</i>		
Energy Efficiency in Industrial Ethernet: The Case of Powerlink	J. A. Maestro and P. Reviriego	2896
LETTERS		
Elimination of Subharmonic Oscillation of Digital-Average-Current-Controlled Switching DC-DC Converters	G. Zhou, J. Xu, and Y. Jin	2904
