

2018 IEEE International Conference on Industrial Electronics for Sustainable Energy Systems (IESES 2018)

**Hamilton, New Zealand
31 January – 2 February 2018**



**IEEE Catalog Number: CFP18H22-POD
ISBN: 978-1-5090-4975-2**

**Copyright © 2018 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP18H22-POD
ISBN (Print-On-Demand):	978-1-5090-4975-2
ISBN (Online):	978-1-5090-4974-5

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

PLENARY SESSIONS

TT ENERGY STORAGE DEVICES AND SYSTEMS

A NOVEL SOLUTION FOR EFFECTIVE UTILIZATION OF UC STORED ENERGY IN BATTERY/UC HYBRID ENERGY STORAGE SYSTEMS.....	15
<i>Mohammad Ali Ghazi Moghadam, Omid Salari, Praveen Jain, Alireza Bakhshai</i>	
BATTERY STORAGE SYSTEM WITH ACTIVE FILTERING FUNCTION BASED ON THE CONSERVATIVE POWER THEORY FOR WIND GENERATORS.....	21
<i>Tiago Davi Curi Busarello, José Antenor Pomilio</i>	
DESIGN APPROACH FOR SUPERCAPACITOR ASSISTED LED LIGHTING (SCALED) TECHNIQUE FOR DC-MICROGRIDS.....	27
<i>Dilini Jayananda, Nihal Kularatna, D. Alistair Steyn-Ross</i>	
EFFECT OF CALENDAR AGEING ON SEI GROWTH AND ITS IMPACT ON ELECTRICAL CIRCUIT MODEL PARAMETERS IN LITHIUM ION BATTERIES.....	32
<i>Bharat Balagopal, Cong Sheng Huang, Mo-Yuen Chow</i>	
EXPERIMENTAL BATTERY MONITORING SYSTEM DESIGN FOR ELECTRIC VEHICLE APPLICATIONS.....	38
<i>Seyed Mahmoud Salamati, Cong-Sheng Huang, Bharat Balagopal, Mo-Yuen Chow</i>	
LOW-COST MODULAR BATTERY EMULATOR FOR BATTERY MANAGEMENT SYSTEM TESTING.....	44
<i>Roberto Di Rienzo, Roberto Roncella, Rocco Morello, Federico Baronti, Roberto Saletti</i>	
NUMERICAL STUDY OF THE DEKF PARAMETER IDENTIFICATION CAPABILITIES IN FUEL CELL EIS TESTS.....	50
<i>Giovanni Petrone, Giovanni Spagnuolo, Walter Zamboni</i>	
POWER ANTIFUSE DEVICE TO BYPASS OR TURN-OFF BATTERY CELLS IN SAFETY-CRITICAL AND FAIL-OPERATIONAL SYSTEMS.....	56
<i>Vincent Lorentz, Reinhold Waller, Stefan Waldhör, Martin Wenger, Markus Gepp, Radu Schwarz, Stéphane Koffel, Sebastian Wacker, Müsfik Akdere, Martin März</i>	
TOPOLOGICAL INVESTIGATION ON INTERLINKING CONVERTER IN A HYBRID MICROGRID.....	62
<i>Upama Bose, Sumit Chattopadhyay, Chandan Chakraborty</i>	

TT POWER CONVERTER TOPOLOGIES AND APPLICATIONS

A 97.0% MAXIMUM EFFICIENCY, FAST RESPONSE, LOW VOLTAGE RIPPLE KY BOOST CONVERTER FOR PHOTOVOLTAIC APPLICATION.....	71
<i>Hai Jie Wen, Chi-Seng Lam, Wai-Hei Choi, Chi-Kong Wong, Man-Chung Wong</i>	
A NOVEL SOFT-SWITCHING HIGH STEP-DOWN FORWARD CONVERTER.....	82
<i>Sung-Pei Yang, Shin-Ju Chen, Chao-Ming Huang, Chih-En Chen</i>	
AN ACTIVE CONTROL SCHEME FOR MMC BASED ENERGY STORAGE DEVICE.....	88
<i>Cheng Jin, Jianfeng Zhao, Zhendong Ji</i>	
COORDINATED PASSIVITY CONTROL OF PERMANENT MAGNET SYNCHRONOUS GENERATOR BASED ON DUAL PWM CONVERTER.....	94
<i>Jie Li, Ya-Nan Guo, Li-Heng Zhang, Wen-Ting Shi</i>	
DESIGN AND IMPLEMENTATION OF A HIGH STEP-DOWN INTERLEAVED DC-DC CONVERTER.....	106
<i>Bo-Hong Lin, Jiann-Fuh Chen, Che-Ting Liu, Dai-Wei Lai</i>	
DO-SCALDO DESIGN APPROACH VERSUS OTHER SPLIT-RAIL, INDUCTOR-LESS DC-DC CONVERTER TECHNIQUES.....	112
<i>Kasun Subasinghage, Kosala Gunawardane, Nihal Kularatna</i>	
DUAL MODE DIGITAL BUCK CONVERTER CONTROLLER WITHOUT CURRENT SENSOR.....	118
<i>Yu-Lin Chen, Jiann-Fuh Chen, Dai-Wei Lai</i>	
INTERLEAVED HIGH STEP-UP DC-DC CONVERTER WITH THREE-WINDING COUPLED INDUCTORS FOR RENEWABLE ENERGY SYSTEM.....	124
<i>Shin-Ju Chen, Sung-Pei Yang, Chao-Ming Huang, Sin-Da Li</i>	

MODULATED MODEL PREDICTIVE CONTROL OF PERMANENT MAGNET SYNCHRONOUS MOTOR	130
<i>Fan Zhang, Tao Peng, Hanbing Dan, Jianheng Lin, Mei Su</i>	
MULTIPLE-OUTPUT DIMMABLE LED DRIVER WITH FLYBACK CONVERTER	134
<i>Li-An Hsu, Tsoing-Juu Liang, Wei-Jing Tseng, Yu-Meng Lin</i>	
OFF-LINE SCALDO BASED HIGH CURRENT DC POWER SUPPLY	140
<i>Thilanga Ariyaratna, Nihal Kularatna, Alistair Steyn-Ross</i>	
POLE-ZERO ANALYSIS OF SUPERCAPACITOR-ASSISTED LOW-DROPOUT (SCALDO) REGULATOR	146
<i>Kasun Subasinghage, Kosala Gunawardane, Nihal Kularatna</i>	
PREDICTIVE CONTROL OF DC-LINK CURRENT BASED ON IPMSM DISCRETE EQUATION IN ELECTROLYTIC CAPACITORLESS INVERTER	152
<i>Yousuke Akama, Kodai Abe, Kiyoshi Ohishi, Yuki Yokokura</i>	
PROPOSAL OF CHARGING SYSTEM FROM UNSTABLE POWER SUPPLY TO THE LITHIUM-ION BATTERY	158
<i>Ryota Kimikado, Masakazu Michihira, Naoki Yoshida, Masahiro Fukui</i>	
SOFT SWITCHED MULTILEVEL UNIDIRECTIONAL HIGH FREQUENCY LINK DC/AC CONVERTER FOR MEDIUM VOLTAGE GRID INTEGRATION	162
<i>Manmohan Mahapatra, Anirban Pal, Kaushik Basu</i>	
SUPPRESSION METHOD OF INCREASE IN MOTOR CURRENT AT ZERO OUTPUT VOLTAGE FOR AN ELECTROLYTIC CAPACITOR-LESS INVERTER	168
<i>Kodai Abe, Yousuke Akama, Kiyoshi Ohishi, Hitoshi Haga, Yuki Yokokura</i>	
SWITCHED-COUPLED INDUCTOR DC-DC CONVERTERS	174
<i>Xinping Ding, Dailing Yu, Yingjie Song, Bicui Xue</i>	
THREE-PORT CONVERTER WITH DECOUPLED POWER CONTROL STRATEGIES FOR RESIDENTIAL PV-BATTERY SYSTEM	180
<i>M Mejbaul Haque, Peter Wolfs, Sanath Alahakoon</i>	

TT TRANSPORTATION AND AUTOMOTIVE TECHNOLOGY

A MULTI-DOMAIN SYNGAS SOLID OXIDE FUEL CELL MODEL FOR TRANSPORTATION APPLICATIONS	189
<i>Rui Ma, Chen Liu, Hao Bai, Elena Breaz, Pascal Briois, Fei Gao</i>	
ANALYSIS OF ELECTRIC VEHICLE STABILITY EFFECTIVENESS ON WHEEL FORCE WITH BLDC MOTOR DRIVE	195
<i>Ranjan K. Behera, Rustam Kumar, Srirama Murthy Bellala, P. Raviteja</i>	
ENERGY LOSS ANALYSIS OF TRACTION INVERTER DRIVE FOR DIFFERENT PWM TECHNIQUES AND DRIVE CYCLES	201
<i>Rishi Menon, Najath Abdul Azeez, Arvind H. Kadam, Sheldon Williamson</i>	
FPGA BASED HARDWARE IN THE LOOP TEST OF RAILWAY TRACTION SYSTEM	206
<i>Chen Liu, Rui Ma, Hao Bai, Huan Luo, Fei Gao, Franck Gechter</i>	
FRICITION COMPENSATION CONTROL FOR ELECTRIC POWER STEERING SYSTEMS	212
<i>Pan-Pan Du, Hao Su, Gong-You Tang</i>	
FUEL ALLOCATION AND LOCKOUT SYSTEM	218
<i>Adam Riekert, Nicoloy Gurusinge, Thilanga Ariyaratna, Rupert Gouws</i>	
HYBRID MULTI-CARRIER PWM TECHNIQUE WITH COMPUTATIONALLY EFFICIENT VOLTAGE BALANCING ALGORITHM FOR MODULAR MULTILEVEL CONVERTER	224
<i>Deepak Ronanki, Najath Azeez, Lalit Patnaik, Sheldon Williamson</i>	
LEARNING-BASED SCENE RECOGNITION WITH MONOCULAR CAMERA FOR LIGHT-RAIL SYSTEM	230
<i>Wan-Chi Siu, Meng Yao, Ke-Bin Jia</i>	
PROPORTIONAL RESONANT CONTROLLERS IN ON-BOARD BATTERY CHARGERS FOR ELECTRIC TRANSPORTATION	237
<i>Jaya Sai Praneeth A V, Najath A Azeez, Lalit Patnaik, Sheldon S Williamson</i>	

TT POWER QUALITY AND POWER CONDITIONING SYSTEMS

A NEW UPS TOPOLOGY FOR MULTI-MEGAWATT MEDIUM VOLTAGE POWER PROTECTION	245
<i>Nick Elliott, Robert Turner</i>	

ABB NZ 10 YEARS' EXPERIENCE WITH ULTRACAPACITORS IN UPS	250
<i>Nick Elliott, Scott Styles, Parthy Kumaran</i>	
ARCING BEHAVIOUR OF A POTENTIAL HIGH-TEMPERATURE SUPERCONDUCTOR (HTS) CIRCUIT BREAKER ARC MODEL	256
<i>Asim Ullah, Tek Tjing Lie, Kosala Gunawardane, N. K. C Nair</i>	
ASSESSMENT OF COST OF UNSERVED ENERGY FOR SRI LANKAN INDUSTRIAL SECTOR	261
<i>D. Punsara Colambage, H. Y. Ranjit Perera</i>	
CONCEPTUAL CHANGES TO THE IEC TR SERIES 61000-3-6, -7, -13, AND -14 FOR POWER QUALITY DISTURBANCE LIMIT ALLOCATION PROCEDURES	267
<i>Mark Halpin</i>	
DISCOVERING THE STRUCTURE OF CASCADE PROPAGATION IN POWER GRIDS	272
<i>Ryan Ghanbari, Mahdi Jalili, Xinghuo Yu</i>	
FAST ACTING LINEAR AC VOLTAGE REGULATOR FOR CONSUMER APPLICATIONS: IMPLEMENTATION OPTIONS	277
<i>Priyanwada Nimesha Wijesooriya, Nihal Kularatna, Jayathu Fernando, Alistair Steyn-Ross</i>	
SPV GRID INTERFACED SYSTEM WITH REDUCED SWITCH CONVERTER FOR POWER QUALITY IMPROVEMENT	283
<i>Nidhi Mishra, Bhim Singh</i>	

TT RENEWABLE ENERGY AND MICROGRIDS

A COMPARATIVE ANALYSIS OF STABILITY FOR BATTERY ENERGY STORAGE SYSTEM OPERATING WITH DIESEL GENERATOR IN A STAND-ALONE MICROGRID	291
<i>Hanju Cha, Jongmin Jo</i>	
A CONCEPTUAL FRAMEWORK FOR FULL OPTIMAL OPERATION OF A GRID-CONNECTED DC MICROGRID	296
<i>Manuela Sechilariu, Leonardo Trigueiro Dos Santos, Fabrice Locment</i>	
A DISTRIBUTED OPTIMAL ACTIVE POWER CONTROL SCHEME FOR INVERTER-BASED ISLANDED AC MICROGRIDS	302
<i>Gang Chen, Zhiyong Li, Zhijun Guo</i>	
A HYBRID CONTROL STRATEGY BASED ON MODIFIED REPETITIVE CONTROL FOR SINGLE-PHASE PHOTOVOLTAIC INVERTER IN STAND-ALONE MODE	308
<i>Bin Guo, Mei Su, Jian Yang, Jing Ou, Zhongting Tang, Bin Cheng, Ming Liu</i>	
A HYBRID ENERGY STORAGE SYSTEM FOR TRANSIENT LOAD AND ITS MULTIPLE OPERATION IN DC MICROGRID	314
<i>Duy-Hung Dam, Duc-Khanh Hoang, Tae-Won Chun, Hong-Hee Lee</i>	
AN IMPROVED ADAPTIVE P&O TECHNIQUE FOR TWO STAGE GRID INTERFACED SPVECS	320
<i>Amresh Kumar Singh, Ikhtlaq Hussain, Bhim Singh</i>	
APPROXIMATING LOW COST STATE SPACE AREAS IN ECONOMIC LOAD DISPATCH WITH VALVE-POINT LOADING EFFECTS	326
<i>Sebastian Lange, Chaojie Li, Eckehard Schöll, Xinghuo Yu</i>	
ARC ANALYSIS FOR THE INTERLINKING ACDC BUSES IN HYBRID ACDC BUILDING MICROGRIDS	333
<i>Chaoyu Dong, Leong Hai Koh, Hongjie Jia, Hueh Chuah Ong, Zhe Zhang, Junjun Wang</i>	
BEHAVIOUR-BASED DISTRIBUTED ENERGY MANAGEMENT FOR CHARGING EVS IN PHOTOVOLTAIC CHARGING STATION	339
<i>Amro Alsabbagh, Dongxiang Yan, Songyang Han, Yandong Wang, Chengbin Ma</i>	
CAPACITY OPTIMIZATION OF A STAND-ALONE MICROGRID SYSTEM USING CHARGED SYSTEM SEARCH ALGORITHM	345
<i>Chao-Ming Huang, Yann-Chang Huang, Kun-Yuan Huang</i>	
DESIGNING AND CONSTRUCTING A DC MICROGRID WITH UNINTERRUPTED POWER SUPPLY CAPABILITY AND OPTIMIZING ITS ENERGY USAGE BY SMART CONTROLLING SYSTEM	351
<i>Buddhika De Zoysa, Anudhika Guruge, Sudath Kalingamudali, Nihal Kularatna, Gihan Kamishka</i>	
DETECTION OF HIGH IMPEDANCE FAULTS IN PV SYSTEMS USING MATHEMATICAL MORPHOLOGY	357
<i>Madhawa Weerasekara, Mahinda Vilathgamuwa, Yateendra Mishra</i>	
DFIG WIND TURBINE GRID CONNECTED FOR FREQUENCY AND AMPLITUDE CONTROL IN A SMART GRID	362
<i>Jose Antonio Cortajarena, Julian De Marcos, Patxi Alkorta, Oscar Barambones, Jon Cortajarena</i>	

HYBRID UP-PWM FOR SINGLE-PHASE TRANSFORMERLESS PHOTOVOLTAIC INVERTER TO IMPROVE ZERO-CROSSING DISTORTION	370
<i>Tang Zhongting, Su Mei, Sun Yao, Wang Hui, Guo Bin, Yang Yunfan</i>	
PERFORMANCE ANALYSIS OF A WEARABLE PHOTOVOLTAIC SYSTEM	376
<i>Oleksandr Veligorskyi, Maksym Khomenko, Roustiam Chakirov, Yuriy Vagapov</i>	
TWO-SWITCH THREE-PHASE LLC RESONANT CIRCUIT WITH POWER FACTOR CORRECTION FOR MICROSCALE WIND POWER GENERATION SYSTEM	382
<i>Yi-Hung Liao, Zheng-Jie Dai</i>	

TT WIRELESS POWER TRANSFER SYSTEMS

A NOVEL INDUCTIVELY POWERED INTELLIGENT PARKING SOLUTION	391
<i>Reza Sehdehi, Thomas Henderson, Muhammad Nadeem</i>	
DESIGN METHODOLOGY OF THE POWER RECEIVER WITH HIGH EFFICIENCY AND CONSTANT OUTPUT VOLTAGE FOR MEGAHERTZ WIRELESS POWER TRANSFER	397
<i>Jibin Song, Ming Liu, Chengbin Ma</i>	
DUAL INDEPENDENT CONTROL FOR INDUCTIVE WIRELESS POWER TRANSFER	403
<i>Utkarsh D. Kavimandan, Satish M. Mahajan, C. W. Van Neste</i>	
EFFICIENCY ANALYSIS OF A 7.7 KW INDUCTIVE WIRELESS POWER TRANSFER SYSTEM WITH PARALLEL DISPLACEMENT	409
<i>Deepa Vincent, Soma Chakraborty, Phouc Sang Huynh, Sheldon Williamson</i>	
ENHANCED WIRELESS POWER TRANSFER USING MAGNETOSTATIC VOLUME MODES IN ANISOTROPIC MAGNETIC METAMATERIALS	415
<i>Qian Wu, Yunhui Li, Yongqiang Chen, Yong Sun, Kai Fang, Yewen Zhang, Zhi Ning Chen, Hong Chen</i>	
LOW-HARMONIC-DISTORTION AND HIGH-EFFICIENCY CLASS E2 DC-DC CONVERTER FOR 6.78 MHZ WPT	421
<i>Shuangke Liu, Chengbin Ma</i>	
MULTIPLE RECEIVER WIRELESS POWER CHARGER FOR MOBILE ELECTRONIC DEVICES	426
<i>Khadijat Hassan, Shangzhi Pan, Praveen Jain</i>	
NEW CONCEPT OF WIRELESS POWER GRID FOR INDUSTRIAL AND HOME APPLICATION	434
<i>Zhu Mao, Hua Han, Qi Zhu, Mei Su, Tao Peng</i>	
RESEARCH AND OPTIMIZATION DESIGN OF TRANSMITTING AND RECEIVING SYSTEM IN WIRELESS POWER TRANSFER VIA COUPLED MAGNETIC RESONANCES	439
<i>Shaojie Feng, Yang Li, Ke Huo, Yumei Li</i>	
WIRELESSLY POWERED MICROACTUATORS	445
<i>Dulsha Kularatna-Abywardana, A. Patrick Hu, Zoran Salcic</i>	

TT ENERGY EFFICIENCY IN BUILDINGS

ADAPTIVE LEARNING-BASED TIME SERIES PREDICTION FRAMEWORK FOR BUILDING ENERGY MANAGEMENT	453
<i>Daniel Schachinger, Jürgen Pannosch, Wolfgang Kastner</i>	
AN ENERGY EFFICIENCY CONTROL STRATEGY FOR A BUILDING-ORIENTED DEHUMIDIFICATION SYSTEM	459
<i>Qiong Wu, Wenjian Cai, Suping Shen</i>	

TT MECHATRONICS, AUTOMATION AND ELECTRIC FENCING

DATA LOGGER AND COMPANION APPLICATION FOR TIME-OF-USE ELECTRICITY	465
<i>Nicojan Vermaak, Nicoloy Gurusinghe, Thilanga Ariyaratna, Rupert Gouws</i>	
DESIGN AND CONTROL OF A NOVEL OMNIDIRECTIONAL DYNAMICALLY BALANCING PLATFORM FOR REMOTE INSPECTION OF CONFINED AND CLUTTERED ENVIRONMENTS	473
<i>Matthew T. Watson, Daniel T. Gladwin, Tony J. Prescott, Sebastian O. Conran</i>	

EXPERIMENTAL COMPARISON OF CONTOURING PERFORMANCE AND CONSUMED ENERGY BETWEEN ADAPTIVE VERSUS NON-ADAPTIVE CONTROLLERS FOR AN INDUSTRIAL MACHINE.....	479
<i>Masaki Oda, Naoki Uchiyama, Tatsuhiko Sakaguchi</i>	

TT INTERNET OF THINGS (IOT) AND SUSTAINABLE ENERGY SYSTEMS

ROBUST POSITION CONTROL OF DC MOTOR USING A LOW-ORDER DISTURBANCE OBSERVER AGAINST BIASED HARMONIC DISTURBANCES.....	484
<i>In Hyuk Kim, Young Ik Son, Sang Hee Kang, Seungchul Lim</i>	
CLOUD MOTION TRACKING SYSTEM USING LOW-COST SKY IMAGER FOR PV POWER RAMP-RATE CONTROL.....	493
<i>Can Zhang, Yang Du, Xiaoyang Chen, Dylan Dah-Chuan Lu</i>	
DESIGN OF A TEMPERATURE-INSENSITIVE DIGITALLY-CONTROLLED OSCILLATOR FOR ON-CHIP REFERENCE CLOCK.....	499
<i>Chih-Taoy Jung, Yingchieh Ho</i>	
FLEXIBLE PLATFORM WITH WIRELESS INTERFACE FOR DC-MOTOR REMOTE CONTROL.....	509
<i>Giuseppe Litta, Roberto Di Rienzo, Rocco Morello, Roberto Roncella, Federico Baronti, Roberto Saletti</i>	
SMART WHITEBOARD FOR INTERACTIVE LEARNING.....	515
<i>Andre Kellerman, Nicoloy Gurusinghe, Thilanga Ariyaratna, Rupert Gouws</i>	

SS REAL-TIME AND HARDWARE-IN-THE-LOOP SIMULATION BASED TESTING OF ELECTRIC POWER APPARATUS AND CONTROLS

ANALYZING STANDARDIZATION NEEDS FOR CHIL-BASED TESTING OF POWER SYSTEMS AND COMPONENTS.....	523
<i>Georg Lauss, Filip Prössl Andrén, Fabian Leimgruber, Thomas Strasser</i>	
CURRENT-TYPE POWER HARDWARE IN THE LOOP (PHIL) EVALUATION FOR SMART TRANSFORMER APPLICATION.....	529
<i>Giovanni De Carne, Giampaolo Buticchi, Marco Liserre</i>	
DISTRIBUTED REAL-TIME CO-SIMULATION AS A SERVICE.....	534
<i>Markus Mirz, Steffen Vogel, Bettina Schäfer, Antonello Monti</i>	
DYNAMICS OF AN INDUSTRIAL POWER AMPLIFIER FOR EVALUATING PHIL TESTING ACCURACY: AN EXPERIMENTAL APPROACH VIA LINEAR SYSTEM IDENTIFICATION METHODS.....	540
<i>Masoud Davari</i>	
HARDWARE-IN-THE-LOOP SIMULATION BASED TESTING OF POWER CONDITIONING SYSTEMS.....	546
<i>Taha Selim Ustun, Hiroo Konishi, Jun Hashimoto, Kenji Otani</i>	
POWER SYSTEM STABILITY STUDIES INCLUDING REAL HARDWARE USING PHASOR POWER HARDWARE-IN-THE-LOOP TECHNOLOGY.....	552
<i>Ron Brandl, Juan Montoya, Thomas Degner, Diana Strauss-Mincu</i>	
POWER SYSTEM-IN-THE-LOOP TESTING CONCEPT FOR HOLISTIC SYSTEM INVESTIGATIONS.....	560
<i>Ron Brandl, Juan Montoya, Diana Strauss-Mincu, Mihai Calin</i>	
Author Index	