

TABLE OF CONTENTS

Day 1: 04 November 2015

S 01: Micro Grid and Distributed Generation Management in Smart Grid I			
Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 01.1	Multi Criteria Decision Analysis for Optimum DG Placement in Smart Grids <i>Syed Ali Abbas Kazmi¹, Syed Faraz Hasan², Dong Ryeol Shin¹</i> ¹ Sungkyunkwan University, South Korea ² Massey University, New Zealand	New Zealand	020
S 01.2	Cooperative Sequential Reconfiguration for Distribution Networks <i>Zhenyu Du, Xiaodong Chu, and Wen Zhang</i> Key Laboratory of Power System Intelligent Dispatch and Control of Ministry of Education(Shandong University), China	China	085
S 01.3	Scheduling of Virtual Power Plant with High Penetration of Distributed Generation <i>Marie Grace Karthrynn M. Balatbat and Michael Angelo A. Pedrasa</i> University of the Philippines Diliman	Philippines	179
S 01.4	Coordination Strategies for Distributed Resources as Frequency Containment Reserves <i>Antti Alahäivälä and Matti Lehtonen</i> Aalto University, Espoo, Finland	Finland	234
S 01.5	Hybrid Quadratic Programming and Compact Formulation Method for Economic Dispatch With Prohibited Operating Zones and Network Losses <i>Z.L. Wu¹, Q.H. Wu¹, X.X. Zhou², and M.S. Li^{1*}</i> ¹ School of Electric Power Engineering South China University of Technology, Guangzhou, China. ² China Electric Power Research Institute State Grid Corporation of China, Beijing, China.	China	170
S 01.6	Optimal Distributed Generation Allocation using Evolutionary Algorithms in Meshed Network <i>Dhivya Sampath Kumar¹, Han Tianyi¹, Dipti Srinivasan¹, Thomas Reindl², and U.J. Shenoy³</i> ¹ Department of Electrical and Computer Engineering National University of Singapore ² Solar Energy Research Institute Singapore National University of Singapore, Singapore ³ Department of Electrical Engineering Indian Institute of Science, Bangalore, India	Singapore	221
S 01.7	Generation Adequacy Assessment Incorporating Equivalent Probabilistic Models of Virtual Power Plants <i>Arijit Bagchi, Lalit Goel, and Peng Wang</i> School of Electrical and Electronic Engineering Nanyang Technological University, Singapore	Singapore	233
S 01.8	Decentralized Voltage Control Coordination of On-Load Tap Changer Transformers, Distributed Generation Units and Flexible Loads <i>Aina Romani Dalmau, David Martinez Perez, Iker Diaz de Cerio Mendaza and Jayakrishnan R. Pillai</i> Department of Energy Technology, Aalborg University, Denmark	Denmark	244

S 02: Artificial Intelligence and Optimization in Smart Grid I			
Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 02.1	Stochastic Economic Dispatch Scheme with Distributed Loads using Group Search Optimizer <i>M.S. Li¹, Y. Hu¹, T.Y Ji¹ and P.Z. Wu²</i> ¹ South China University of Technology ² Shenzhen Institute of Advanced Technology	China	069
S 02.2	Application of Swarm Mean-Variance Mapping Optimization on Location and Tuning Damping Controllers <i>Jose Luis Rueda¹ and Francisco Gonzalez-Longatt²</i> ¹ Department of Electrical Sustainable Energy Delft University of Technology, Delft, The Netherlands. ² Centre for Renewable Energy Systems Technology (CREST), Loughborough University, UK.	United Kingdom	077
S 02.3	Heuristics for the Cost-Effective Management of a Temperature Controlled Environment <i>Mohamed Arikieze, Floriana Grasso, and Michele Zito</i> Department of Computer Science University of Liverpool, United Kingdom	United Kingdom	252
S 02.4	Reference Point Based Non-dominated Sorting Approach for Multi-objective Optimization of Power Flow	China	157

	Y.N. Kou, J.H. Zheng, M.S. Li, and Q.H. Wu School of Electric Power Engineering South China University of Technology, Guangzhou, China		
S 02.5	Discrete Reactive Power Optimization Considering Safety Margin by Dimensional Q-Learning Xiaoya Shang ¹ , Mengshi Li ¹ , Tianyao Ji ¹ , Q.H. Wu and L.L. Zhang ¹ School of Electric Power Engineering South China University of Technology, Guangzhou, 510641, China ² Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, Institute of Biomedical and Health Engineering, Paul C. Lauterbur Research Center for Biomedical Imaging, Shenzhen, China	China	156
S 02.6	Improved Bees Algorithm for Dynamic Economic Dispatch considering Prohibited Operating Zones Mahesh Kumar Sharma, Prakomchai Phonrattanasak and Nopbhorn Leeprechanon Department of Electrical and Computer Engineering Faculty of Engineering, Thammasat University, Thailand	Thailand	119
S 02.7	Particle Swarm Optimization for Demand Side Management in Smart Grid Dipti Srinivasan ¹ , T. Logenthiran ² and Ei Phyu ¹ ¹ Department of Electrical and Computer Engineering National University of Singapore ² School of Electrical and Electronic Engineering Newcastle University, Singapore	Singapore	126
S 02.8	Chaos PSO Algorithm Based Economic Dispatch of Hybrid Power Systems Including Solar and Wind Energy Sources Duy C. Huynh ¹ and Nirmal Nair ² ¹ Electrical and Electronic Engineering Department Ho Chi Minh City University of Technology, Vietnam ² Electrical and Computer Engineering Department The University of Auckland, New Zealand	Vietnam	290

S 03: Modeling, Integration and Management of Renewable Energy in Smart Grid I

Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 03.1	Wind Speed Forecasting using ANN, ARMA and AIC hybrid to Ensure Power Grid Reliability Diksha Sharma, Tek Tjing Lie, Nirmal Kumar C Nair and Brice Valles ¹ Auckland University of Technology, New Zealand ¹ Inland Revenue, New Zealand	New Zealand	005
S 03.2	Voltage Control by using PV Power Factor, Var Controllers and Transformer Tap for Large Scale Photovoltaic Penetration Shunsuke Aida ¹ , Takayuki Ito ¹ , Yuta Mori ¹ , Shinichi Iwamoto ¹ , Shingo Sakaeda ² , and Yukihiko Onoue ² ¹ Department of Electrical Engineering and Bioscience Waseda University Tokyo, Japan ² CHUBU Electric Power Co., Inc., Nagoya, Japan	Japan	068
S 03.3	Operational Simulation of PV Generation System with Hybrid Batteries Toshikazu Yamamoto ¹ , Xu Yanbin ¹ , Sinya Hashimoto ¹ , Noboru Higuchi ¹ , Koichi Nara ¹ , and Hirota Yasue ² ¹ Fukushima National College of Technology, Japan ² Hitachi Industry & Control Solutions. Ltd, Japan	Japan	080
S 03.4	Damping Subsynchronous Resonance in Series-Compensated Wind Farms by Adding Notch Filters toDFIG Controllers Huakun Liu ¹ , Xiaorong Xie ¹ , Yu Li ² , Hui Liu ² , and Yinghong Hu ² ¹ Department of Electrical Engineering Tsinghua University, Beijing, China ² North China Electric Power Research Institute, Beijing, China	China	087
S 03.5	Two Stage Stochastic Optimisation of Highly Distributed PV /Battery Microgrids with Grid Connection Mitchell Lennard and Abhijit Date School of Aerospace, Mechanical and Manufacturing RMIT University Melbourne, Australia.	Australia	116
S 03.6	An Accuracy Evaluation of PV Power Output Estimation Method Using Covariance between Solar Radiation Intensity and Power Flow Kuzuhiro Yasunami ¹ and Takashi Washio ² ¹ R&D Center, The Kansai Electric Power Co., Inc., Hyogo, Japan ² The Institute of Scientific and Industrial Research Osaka University Osaka, Japan	Japan	215
S 03.7	Aggregate Wind Power Plant Collection Network Modeling – Error Sources and Magnitudes Sanna Uski VTT Technical Research Centre of Finland	Finland	240
S 03.8	Characteristics Evaluation of a μ-Synthesis H_∞ Controller for a Grid-Connected Three-Phase Photovoltaic System	Malaysia	093

S 04: Building and Home Energy Management in Smart Grid I

Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 04.1	Building HVAC Load Profiling Using Energy Plus <i>Dong Wang, Abhisek Ukil and Ujjal Manandhar</i> School of EEE, Nanyang Technological University, Singapore	Singapore	053
S 04.2	Multi-Stage Scheduling for a Smart Home with Solar PV and Battery Energy Storage – A Case Study <i>Batchu Rajasekhar and Naran Pindoriya</i> Electrical Engineering, Indian Institute of Technology Gandhinagar, India	India	079
S 04.3	Intelligent Multi-Agent System for Smart Home Energy Management <i>W. Li, T. Logenthiran and W.L. Woo</i> School of Electrical and Electronic Engineering Newcastle University, Singapore	Singapore	127
S 04.4	An Intelligent Lighting Energy Management System for Commercial and Residential Buildings <i>Siriporn Bannamas and Peerapol Jirapong</i> Department of Electrical Engineering, Chiang Mai University, Thailand	Thailand	166
S 04.5	Laboratory Smart Home Energy Management System <i>Ciprian Ionut PAUNESCU, Lucian TOMA, Mircea EREMI</i> Department of Electrical Power Systems University POLITEHNICA of Bucharest, Romania	Romania	176
S 04.6	Optimization of Energy Expenditure in Smart Homes under Time-of-Use Pricing <i>Omowunmi Mary Longe, Khmaies Ouahada, Suvendi Rimer and Hendrik C. Ferreira</i> Electrical and Electronics Engineering Science University of Johannesburg, South Africa	South Africa	251
S 04.7	Effects of Home Energy Management Systems for Reduction of Renewables Output Curtailment <i>Takashi Himeno and Takashi Ikegami</i> Graduate School of Bio-Applications and Systems Engineering Tokyo University of Agriculture and Technology, Koganei, Tokyo	Japan	339
S 04.8	A High Resolution Model of Residential Internal Heat Gain - The Subtle Interdependencies Among Residential End Uses <i>Merkebu Z. Degefa¹, Matti Lehtonen¹, Ken Nixon², and Malcolm McCulloch³</i> ¹ Department of Electrical Engineering and Automation Aalto University, Espoo, Finland ² School of Electrical and Information Engineering University of the Witwatersrand, Johannesburg, South Africa ³ Energy and Power Group, Department of Engineering Science University of Oxford, UK	Finland	239

S 05: Electricity Markets, Incentives, Regulation and Pricing I

Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 05.1	Real-Time Pricing via Distributed Negotiations between Prosumers in Smart Grids <i>Kazunori Sakurama and Masashi Miura</i> The Graduate School of Engineering, Tottori University, Tottori, Japan	Japan	035
S 05.2	Co-benefit and Profit Sharing Model for Operation of Neighboring Industrial PV Prosumers <i>Jing Zhao¹, Nian Liu¹, and Jinyong Lei²</i> ¹ School of Electric and Electronic Engineering North China Electric Power University, Beijing, China ² Electric Power Research Institute China Southern Power Grid, Guangzhou, China	China	044
S 05.3	Modelling Multi-Resource Regulatory Incentives in Expansion Planning Problem <i>A. Sheikhi Fini¹, S. Bahramara², M. Parsa Moghaddam², and M.K. Sheikh-El-Eslami²</i> ¹ Engineering Faculty, Hormozgan University, Bandar Abbas, Iran ² Electrical and Computer Faculty Tarbiat Modares University (TMU), Tehran, Iran	Iran	046
S 05.4	Industrial Consumers' Acceptance to the Smart Grid Solutions: Case Studies from Denmark <i>Zheng Ma, Bo Nørregaard Jørgensen, and Alla Asmussen</i> Center for Energy Informatics University of Southern Denmark, Odense, Denmark	Denmark	107
S 05.5	A Multi-Scale Energy Demand Model suggests sharing Market	Netherlands	269

	Risks with Intelligent Energy Cooperatives <i>Georgios Methenitis, Michael Kaisers, and Han La Poutré</i> CWI, Amsterdam, Netherlands		
S 05.6	Strategic Bidding and Transmission Rights Purchase for Generator's Payoff Maximisation <i>Harivina Gunnaasankaraan, Keshava Dilwali, Aparna Viswanath and Kaushik Mahata</i> School of Electrical Engineering and Computer Science University of Newcastle, Australia	Australia	341
S 05.7	Application of Bi-level Programming for Profit Maximization by Transmission Investors <i>Harivina Gunnaasankaraan, Aparna Viswanath, and Kaushik Mahata</i> School of Electrical Engineering and Computer Science University of Newcastle, Australia	Australia	388
S 05.8	A Comparison of Direct Worth And Relative Worth Studies for Outage Cost Estimations in Industry Sectors <i>Sinan Küfeoğlu and Matti Lehtonen</i> School of Electrical Engineering, Aalto University, Espoo, Finland	Finland	243

S 06: Integration and Management of Electric Vehicle in Smart Grid I

Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 06.1	EV Charging Station Design with PV and Energy Storage Using Energy Balance Analysis <i>Md Shariful Islam¹, N. Mithulanathan¹, Krischonme Bhumkittipich², and Arthit Sode-yome³</i> ¹ School of Information Technology and Electrical Engineering The University of Queensland, Brisbane, Australia ² Department of Electrical Engineering Rajamangala University of Technology Thanyaburi Thailand. ³ Power System Control and Operation Division Electricity Generating Authority of Thailand, Bang Krua, Thailand	Australia	018
S 06.2	Optimal Location and Optimum Charging of Electric Vehicle based on Sensitivity Indices <i>Sulabh Sachan and Nand Kishor</i> Electrical Engineering Department, MNNIT Allahabad India	India	050
S 06.3	Multi-Party Energy Management for EV Charging Station Cooperated with PV Systems in Smart Grid <i>Fuqiang Zou, Nian Liu, Qifang Chen</i> School of Electric and Electronic Engineering North China Electric Power University, Beijing, China	China	084
S 06.4	Revenue Valuation of Aggregated Electric Vehicles Participating in V2G Power Service <i>Prateek Jain, Dilkhush Meena, and Trapti Jain</i> Discipline of Electrical Engineering Indian Institute of Technology Indore, India	India	245
S 06.5	Electric Vehicle Charging Scheduling and Analysis on Impact to Electric Vehicle Owners' Comfort <i>Kornschnok Dittawit and Finn Arve Aagesen</i> Department of Telematics Norwegian University of Science and Technology Trondheim, Norway	Norway	293
S 06.6	Joint Shaping and Altering the Demand Profile by Residential Plug-in Electric Vehicles for Forward and Spot Markets in Smart Grids <i>Farshad Rassaei, Wee-Seng Soh and Kee-Chaing Chua</i> Department of Electrical and Computer Engineering National University of Singapore, Singapore	Singapore	138
S 06.7	A Smart Scheduling Strategy for Charging and Discharging of Electric Vehicles <i>Anurag Sharma, Samson Shih, and Dipti Srinivasan</i> Department of Electrical and Computer Engineering National University of Singapore	Singapore	203
S 06.8	Model Predictive Control of EV Storage Battery with HEMS based on Particle Swarm Optimization <i>Yuto Yoshimura, Tomoaki Kondo, Michihiro Kawanishi, and Tatsuo Narikiyo</i> ¹ Department of Advanced Science and Technology Toyota Technology Institute, Aichi, Japan. ² Higashi-Fuji Technical Center, Toyota Motor Corporation Aichi, Japan	Japan	350

S 07: Information, Communication and Metering Technologies in Smart Grid I

Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 07.1	An Optimization Based Method for Topology Error Detection for State Estimation	India	054

S 07.2	<i>Neeraj Kumar Sharma and Saikat Chakrabarti</i> Department of Electrical Engineering Indian Institute of Technology Kanpur, India Power Grid Fault Detection using an AMR Network	Trinidad and Tobago	300
S 07.3	<i>Patrick Hosein, Stefan Hosein and Sanjay Bahadoorsingh</i> Department of Computer Science The University of the West Indies St. Augustine, Trinidad and Tobago Hardware-Assisted Malware Detection for Embedded Systems in Smart Grid	Singapore	136
S 07.4	<i>Congmiao Li, Dipti Srinivasan, and Thomas Reindl</i> Solar Energy Research Institute of Singapore National University of Singapore, Singapore Allocation of Power Meters for Online Load Distribution Estimation in Smart Grids	Denmark	148
S 07.5	<i>Konstantinos Kouzelis, Iker Diaz De Cerio Mendaza, Birgitte Bak-Jensen, Jayakrishnan R. Pillai, and Bishnu Prasad Bhattarai</i> Department of Energy Technology, Aalborg University, Denmark Implementation of a Routing Protocol for Smart Grid's Low-Power and Lossy Network	Philippines	158
	<i>Kyle Christopher L. Melchor, Christopher D. Obniala, and Jhoanna Rhodette I. Pedrasa</i> Electrical and Electronics Engineering Institute University of the Philippines Diliman, Philippines		

S 08: Power System Protection and Fault Diaganosis in Smart Grid I

Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 08.1	Coordinated and Comprehensive Protection Scheme for the Transitional Period with Increasing DG Incorporation <i>LIN Xia¹, Yuping Lu², LI Yao¹, G.B. Zou², and Meng Xu³</i> ¹ Shandong Zaozhuang Power Supply Company, Zaozhuang, China ² Department of Electrical Engineering Southeast University, Nanjing,China ³ School of Electrical Engineering, Shandong University, China	China	049
S 08.2	A Settings Tracking and Providing Scheme for Differential Protection Based on Machine Learning <i>Yujie Feng¹, Bin Duan², Cheng Tan², and Zili Yao²</i> ¹ College of Information Engineering Xiangtan University, Xiangtan, Hunan, China. ² Cooperative Innovation Center of Wind Power Equipment and Energy Conversion, Xiangtan, China	China	062
S 08.3	A Risk Evaluation Method for Cascading Failure Considering Transmission Line Icing <i>Xin Feng¹, Jun Yang¹, Chao Luo¹, Yuanzhang Sun¹, Mingsong², and Liu Yong Tang²</i> ¹ School of Electrical Engineering Wuhan University, Wuhan, Hubei,China ² China Electric Power Research Institute, Beijing,China	China	066
S 08.4	A Weighted Mathematical Morphological Method for the Identification of Transformer Sympathetic Inrush <i>A. Q. Zhang¹, T.Y. Ji¹, M.S. Li¹, Q.H. Wu¹, and T. Wu²</i> ¹ School of Electrical Power Engineering South China University of Technology, Guangzhou, China ² China Xi'an Satellite Control Center, Xi'an, China	China	072
S 08.5	Ubiquitous UHF Monitoring System for Partial Discharge Detection and Trending <i>Jeffrey C. Andle¹, Jonathan P. Murray¹, Maly Chap¹, and Elkin Baquero¹, Jeffrey T. Jordan²</i> ¹ IntelliSAW, Inc., Andover, MA USA ² Energy Division, Schneider Electric, Smyrna TN, USA	USA	081

S 09: Power System Automation and Control in Smart Grid I

Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 09.1	A New Islanding Detection Technique for Distribution System during DG Interconnections <i>Karan Sareen, Bhavesh Bhalja, and R.P. Maheshwari</i> Department of Electrical Engineering Indian Institute of Technology Roorkee, Uttarakhand, India	India	002
S 09.2	BEMOSS: An Agent Platform to Facilitate Grid-Interactive Building Operation with IoT Devices <i>Manisa Pipattanasomporn, Murat Kuzlu, Warodom Khamphanchai, Avijit Saha, Kruthika Rathinavel, and Saifur Rahman</i> Virginia Tech – Advanced Research Institute, Arlington, VA, USA	USA	027
S 09.3	Design and Analysis of PID and Fuzzy-PID Controller for Voltage	India	031

	Control of DC Microgrid <i>Rajeev Kumar Chauhan¹, B.S. Rajpurohit¹, Robert E. Hebner², S.N. Singh³, and F.M.G. Longat⁴</i> ¹ School of Computing and Electrical Engineering Indian Institute of Technology Mandi, India ² Center for Electromechanics, University of Texas, Austin, USA ³ Department of Electrical Engineering, IIT Kanpur, India ⁴ Department of Electrical Engineering, University of Loughborough, UK		
S 09.4	Assessment of Power System Black-start Schemes Based on Improved Analytic Hierarchy Process and Fuzzy Comprehensive Evaluation <i>Xu Hui², Liu Jian-kun¹, Zhou Qian¹, Lin Sha², and Zheng Ran²</i> ¹ Department of Power Network Jiangsu Electric Power Company Research Institute, Nanjing, China ² School of Automation Nanjing University of Science and Technology, Nanjing, China	China	043
S 09.5	Novel Controller Design for DC Link Voltage Control of Grid Connected PV System and Optimized PI Response Analysis with Improved Transients <i>Ravi Nath Tripathi and Tsuyoshi Hanamoto</i> Graduate School of Life Science and System Engineering Kyushu Institute of Technology, Kitakyushu, Japan	Japan	075

S 10: Stability and Security in Smart Grid I

Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 10.1	Stability Enhancement of Hybrid Diesel Generator and Photovoltaic Generator based on Droop Control <i>Muhammad Wardi Hadi^{1,2,3}, Nanang Hariyanto¹, and Jaeho Choi²</i> ¹ School of Electrical Engineering and Informatics Institut Teknologi Bandung, Indonesia ² School of Electrical Engineering Chungbuk National University, Cheongju, Republic of Korea ³ PT. PLN (Persero), Jakarta, Indonesia	Indonesia	030
S 10.2	A Multi-input Lead-Lag Power System Stabilizer with H[∞] Control Performance <i>Keisuke Suzuki, Junnosuke Kobayashi, Takato Otani, and Shinichi Iwamoto</i> Department of Electrical Engineering and Bioscience Waseda University, Tokyo, Japan	Japan	045
S 10.3	Effect of Communication Delay on Load Frequency Control Application In Autonomous Hybrid Power System <i>Vijay P. Singh, Paulson Samuel, and Nand Kishor</i> Department of Electrical Engineering, M.N.N.I.T, Allahabad, India	India	047
S 10.4	Voltage Stability Assessment of Distribution Systems with Fixed Speed Wind Generating Systems <i>M.H. Haque</i> School of Engineering University of South Australia, Mawson Lakes, Australia	Australia	099
S 10.5	Development and Application of a Wide Area Response Based Power System Transient Stability Detection Analysis and Simulation Software <i>Yujie Zhang¹, Jinquan Zhao¹, Pan Zhang¹, Xiaoming Jin², Chao Fu², and Hongxin Li²</i> ¹ College of Energy and Electrical Engineering Hohai University, Nanjing, China ² Science Research Institute, China Southern Power Grid Co., Guangzhou, China	China	108
S 10.6	Thevenin Equivalent Parameter Tracking for On-line Voltage Stability Assessment <i>Mohammad Nazrul Islam and Weerakorn Ongsakul</i> Energy FoS, School of Environment Resources and Development Asian Institute of Technology, Pathumthani, Thailand	Thailand	121
S 10.7	Enhancement of the Stability and the Transient Response of Inverter Based Grid Forming DG unit in Micro-grids <i>Ahmed H. Abde Razek, Amr M. Abdin, and Hamdy S.K. El-Gohary</i> Electrical Power and Machines Department Faculty of Engineering, Ain Shams University, Cairo, Egypt	Egypt	285
S 10.8	Analysis of Earth Currents in Medium-Voltage Distribution Network with Core Cables <i>LIANG Zhengzhong and ZHU Guofang</i> School of Electrical Engineering, Shandong University, Jinan, China	China	082
S 10.9	Behavior of Different Distance Relay Characteristic on Lines Fed From Type-1 and Type-2 WTGU Connected Radially to Grid: A Case Study <i>Sachin Srivastava¹, Abhinna Biswal¹, K.S.V. Phanindra², and U.J. Shenoy²</i>	India	103

¹Power Technologies, India Development Centre
 ABB GISL, Bangalore, India
²Department of Electrical Engineering
 Indian Institute of Science, Bangalore, India

S 11: Evaluation and Enhancement of Power Quality and Reliability in Smart Grid I

Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 11.1	Reliability Analysis of Modern Substations Considering Cyber Link Failures <i>Hangtian Lei, Chanan Singh and Alex Sprintson</i> Department of Electrical and Computer Engineering Texas A&M University, College Station, TX, USA	USA	013
S 11.2	Power Quality Disturbance Detection Based on Morphology Singular Entropy <i>Y. Chen, T.Y. Ji, M.S. Li, and Q.H. Wu</i> School of Electric Power Engineering South China University of Technology, Guangzhou, China	China	091
S 11.3	Economic Power Flow Adjustment Technique using Series Capacitor and Generator Output Adjustment for Generation Configuration Change <i>Fumihiko Nakatani¹, Yuta Mori¹, Takayuki Ito¹, Shinichi Iwamoto¹, Yo Suetsugu², and Tomoyuki Higashitani</i> ¹ Department of Electrical Engineering and Bioscience Waseda University, Tokyo, Japan ² Tokyo Electric Power Co., Inc., Tokyo, Japan	Japan	098
S 11.4	Power Disturbance Identification based on Transient Behaviors using Morphological Max-Lifting Scheme and Nonlinear Principal Component Analysis <i>Y. Zhang¹, T.Y. Ji¹, M.S. Li¹, and Q.H. Wu^{1,2}</i> ¹ School of Electrical Power Engineering South China University of Technology (SCUT), Guangzhou, China. ² Department of Electrical Engineering and Electronics The University of Liverpool, U.K.	China	169
S 11.5	A Probabilistic Approach for SVC Placement with Harmonic Control and Reactive Power Compensation <i>Hung-Lu Wang and Ming-Shan Lin</i> Bureau of Standards, Metrology and Inspection (BSMI) Ministry of Economic Affairs, Taiwan, R.O.C.	Taiwan	214
S 11.6	Placement of DSTATCOM in Radial Distribution Systems for the Compensation of Reactive Power <i>Joseph Sanam¹, A.K. Panda¹ and Sanjib Ganguly²</i> ¹ Department of Electrical Engineering National Institute of Technology, Rourkela, India ² Department of Electrical Engineering Indian Institute of Technology, Guwahati, India	India	206
S 11.7	Reliability Assessment of Smart Distribution Networks <i>Hui Guo, Victor Levi, and Muhammad Buhari</i> School of Electrical and Electronic Engineering The University of Manchester, United Kingdom	United Kingdom	188
S 11.8	LEACH-based Communication Network with a Modified Sleep Protocol <i>Jhoanna Rhodette I. Pedrasa and Gregorio L. Ortiz III</i> Electrical and Electronics Engineering Institute University of the Philippines Diliman, Philippines	Philippines	184
S 11.9	Implementation of Communication Model and Web Services for Cluster-Based Power System Operation in Smart Grids <i>S. Leksawat¹, A. Schmelter¹, E. Ortjohann¹, D. Holtschulte¹, J. Kortenbruck¹, and D. Morton²</i> ¹ South Westphalia University of Applied Science, Germany ² The University of Bolton, U.K.	Germany	197

S 12: Demand Side Management in Smart Grid I

Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 12.1	Multi-Objective Optimization Model for Energy Mangement of Household Micro-grids Participating in Demand Response <i>Wei Fan, Nian Liu, and Jianhua Zhang</i> School of Electrical and Electronic Engineering North China Electric Power University, Beijing, China	China	060
S 12.2	GIS as a Tool for Enhancing the Optimization of Demand Side Management in Residential Microgrid <i>Monika¹, Dipti Srinivasan¹, and Thomas Reindl²</i> ¹ Electrical and Computer Engineering	Singapore	298

S 12.3	<p>National University of Singapore ²Solar Energy Research Institute of Singapore The Study of Demand Response Participating in Spinning Reserve Coordinating Optimization Scheme <i>Zhou Xia¹, Zhang Chaohai¹, Lu Zhenzhen², and Dai Yuchen²</i> ¹Harbin Institute of Technology, Harbin, China ²Electrical Engineering School, Southeast University, Nanjing, China</p>	China	071
S 12.4	<p>Active Distribution Network Multiperiod Service Restoration Considering Flexible Load <i>Daogui Shi, Lanlan Xing, Qi Chen, Wenxia Liu, and Zongqi Liu</i> School of Electrical and Electronic Engineering North China Electric Power University, NCEPU, Beijing, China</p>	China	104
S 12.5	<p>Multi-tier Incentive Scheme for Residential Customer Participation in Demand Response Management Programs <i>Ali Shabbir¹, Naveed Ul Hassan¹, Chau Yuen², Ayaz Ahmad³, and Wayes Tushar²</i> ¹Pakistan, LUMS, Lahore, Pakistan ²Engineering Product Development Singapore University of Technology and Design (SUTD), Singapore ³COMSATS Institute of Information Technology, Pakistan</p>	Singapore	250
S 12.6	<p>Optimal DR through HVAC Loads in Distribution Systems Hosting Large Wind Generation <i>Mubbashir Ali¹, Muhammad Humayun¹, Merkebu Degefa¹, Amir Safdarian² and Matti Lehtonen¹</i> ¹Department of Electrical Engineering and Automation Aalto University, Espoo, Finland ²Department of Electrical Engineering, Sharif University, Tehran, Iran</p>	Finland	257
S 12.7	<p>A Framework for Activating Residential HVAC Demand Response for Wind Generation Balancing <i>Mubbashir Ali¹, Muhammad Humayun¹, Amir Safdarian², Merkebu Degefa¹, Antti Alahäivälä¹ and Matti Lehtonen¹</i> ¹Department of Electrical Engineering and Automation Aalto University, Espoo, Finland ²Department of Electrical Engineering, Sharif University, Tehran, Iran</p>	Finland	231
S 12.8	<p>Variable Bandwidth Control of Tap Changers in Distribution Grids <i>Eva-Maria Baerthlein¹, Marianne Hartung¹, Ara Panosyan¹, and Rolf Witzmann²</i> ¹GE Global Research, Munich, Germany ²Technische Universität München, Munich, Germany</p>	Germany	095
S 12.9	<p>Field Programmable Gate Array Based Speed Control of BLDC motor <i>Rajesh M Pindoriya¹, S. Rajendran² and P.J. Chauhan³</i> ¹Department of Electrical Engineering, Marwadi Education Foundation's Group of Institutions, Rajkot, Gujarat, India ²Department of Electrical Engineering Indian Institute of Technology Gandhinagar, Gujarat, India</p>	India	131

S 13: Micro Grid and Distributed Generation Management in Smart Grid II			
Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 13.1	Jointly Optimization and Distributed Control for Interconnected Operation of Autonomous Microgrids <i>Yansong Li, Nian Liu, and Jianhua Zhang</i> School of Electrical and Electronic Engineering North China Electric Power University, NCEPU	China	096
S 13.2	Effective Power Sharing Approach for Islanded Microgrids <i>M. I. Azim¹, M.A. Hossain¹, H.R. Pota¹, and M.J. Hossain²</i> ¹ School of Engineering and Information Technology The University of New South Wales, Canberra, Australia ² Griffith School of Engineering, Griffith University, Queensland, Australia	Australia	183
S 13.3	Efficiency Comparison of DC and AC Microgrid <i>Ujjal Manandhar, Abhisek Ukil, and Tan Keng Kiat Jonathan</i> School of EEE, Nanyang Technological University, Singapore	Singapore	114
S 13.4	Modeling and simulation Framework for Techno-Economic Analysis of Large City Low-Voltage Distribution Network <i>Zhongwei Jake Zhang¹, Nirmal-Kumar C. Nair¹, and Sean Cross²</i> ¹ Electrical and Computer Engineering Department University of Auckland, New Zealand ² Vector Limited Auckland, New Zealand	New Zealand	246
S 13.5	Optimal Sizing and Placement of Power-to-Gas Systems in Future Active Distribution Networks <i>Iker Diaz de Cerio Mendaza¹, Bishnu P. Bhattarai¹, Konstantinos Kouzelis¹, Jayakrishnan R. Pillai¹, Birgitte Bak-Jensen¹, and Allan Jensen²</i> ¹ Department of Energy Technology, Aalborg University, Denmark ² HEF Net A/S, Aalborg, Denmark	Denmark	247
S 13.6	Droop Control Incorporated Power Flow Method for Distribution and Microgrid Systems <i>Nimal Madhu M., Watcharakorn Pinthurat, Jai Govind Singh, and Weerakorn Ongsakul</i> Energy FoS, School of Environment Resources and Development Asian Institute of Technology, Pathumthani, Thailand	Thailand	274
S 13.7	Efficiency of DC Microgrid on DC Distribution System <i>Rohan Sirsi¹ and Yadnyesh Ambekar²</i> ¹ Dr. D.Y. Patil Institute of Engineering and Technology, Pune, India ² Trident Techlabs Pvt. Ltd., Pune, India	India	299
S 13.8	Optimal Spinning Reserve under Load and Intermittent Generation Uncertainty using Monte Carlo Simulation <i>Nit Petcharaks</i> Faculty of Engineering, Dhurakij Pundit University, Bangkok, Thailand	Thailand	331

S 14: Power System Protection and Fault Diaganosis in Smart Grid II			
Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 14.1	Reconfigurable Inverter: An Approach to Self-healing of Distributed Generation <i>Wu Chen¹, Bin Duan², Hui Li², and Zhi Li²</i> ¹ College of Information Engineering, Xiangtan University, China ² Collaborative Innovation Center of Wind Power Equipment and Energy Conversion, Xiangtan, China	China	149
S 14.2	A Generalised Fault Protection Structure for Unigrounded Low-Voltage AC Microgrids <i>Duong Minh Bui¹, Shi-Lin Chen¹, Keng-Yu Lien², and Jheng-Lun Jiang³</i> ¹ Department of Electrical Engineering Chung Yuan Christian University Chungli, Taiwan ² Department of Avionics China University of Science and Technology, Hsinchu, Taiwan ³ Institute of Nuclear Energy Research, Hsinchu, Taiwan	Taiwan	309
S 14.3	Influence of Burden of Current Transformer (IEC Standard) on the High Frequency Current Measurement <i>Komson Petcharaks and Oudom Siv</i> Department of Electrical Engineering Chulalongkorn University, Bangkok, Thailand	Thailand	334
S 14.4	Performance Analysis of Q-f droop Anti-Islanding Protection in the Presence of Mixed Types of DG <i>Ontrei Raipala, Sami Repo, and Pertti Järventausta</i> Department of Electrical Engineering Tampere University of Technology, Finland	Finland	357
S 14.5	Adaptive Overcurrent Protection Considering Critical Clearing Time	Thailand	118

	for a Microgrid System <i>N. Tummasit¹, S. Premrudeepreechacharn¹, and N. Tantichayakorn²</i> ¹ Department of Electrical Engineering, Faculty of Engineering, Chiang Mai University, Thailand ² Substation and Power System Maintenance Department Provincial Electricity Authority (PEA), Bangkok, Thailand		
S 14.6	Fault Detection and Classification on Transmission Line using Wavelet Based Alienation Algorithm <i>Bhuvnesh Rathore and Abdul Gafoor Shaik</i> Department of Electrical Engineering Indian Institute of Technology, Jodhpur, India	India	273
S 14.7	Protection Schemes for Distribution Lines In DC Power Grid <i>Zaibin Jiao¹, Zhao Wang¹, Xiaobing Wang¹, Jiliang Jin¹, Wu Xing¹, and Chongxi Jiang²</i> ¹ School of Electrical Engineering, Xi'an Jiaotong University, Xi'an, China ² Zhejiang University, Hangzhou, China	China	284
S 14.8	Fault Protection Solutions Appropriately Used for Ungrounded Low-Voltage AC Microgrids <i>Duong Minh Bui¹, Shi-Lin Chen¹, Keng-Yu Lien², and Jheng-Lun Jiang³</i> ¹ Department of Electrical Engineering Chung Yuan Christian University Chungli, Taiwan ² Department of Avionics China University of Science and Technology Hsinchu, Taiwan ³ Institute of Nuclear Energy Research, Hsinchu, Taiwan	Taiwan	307

S 15: Power Electronics and its Applications in Smart Grid I

Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 15.1	Simulation of DC/DC Converter for DC Nano Grid Integrated with Solar PV Generation <i>Rajesh M Pindoriya, N.M. Pindoriya and S. Rajendran</i> Department of Electrical Engineering Indian Institute of Technology Gandhinagar, Gujarat, India	India	055
S 15.2	Optimal Power Flow in VSC-HVDC Networks for DC-ISO: Constant Current Operation <i>F. González-Longatt</i> School of Electrical, Electronic and System Engineering Loughborough University, United Kingdom	United Kingdom	078
S 15.3	An Indirect Matrix Converter-based Unified Power Quality Conditioner for a PV inverter with enhanced Power Quality functionality <i>Thomas Geury^{1,2,3}, Sonia Pinto², Johan Gyselinck³, and Patrick Wheeler⁴</i> ¹ F.R.I.A. (scholarship student) ² INESC-ID Lisboa, IST – ULisbon, Lisbon, Portugal ³ BEAMS Energy, EPB – ULB, Brussels, Belgium ⁴ Department of Electrical and Electronic Engineering University of Nottingham, UK	Belgium	111
S 15.4	Design and Analysis of Current Controllers with Active Damped LCL Filter for Three-Phase Grid Connected Solar PV System <i>Jakshman Sorakka Arunagiri¹, Amit Jain², and B.S.Rajpurohit¹</i> ¹ School of Computing and Electrical Engineering Indian Institute of Technology Mandi ² Power Systems Division, CPRI	India	205
S 15.5	Five-Level Multiple-Pole Multilevel Diode-Clamped Inverter Scheme for Reactive Power Compensation <i>Pinkymol Harikrishna Raj, Ali I. Maswood, Gabriel H.P. Ooi, and Hossein Dehghani Tafti</i> School Electrical and Electronic Engineering Nanyang Technological University, Singapore	Singapore	142
S 15.6	Coordinated Operation of a Microgrid with a Distribution Network Device <i>T. John¹, Y. Wang¹, P.L. So¹, and K.T. Tan²</i> ¹ Nanyang Technological University ² Ngee Ann Polytechnic	Singapore	322
S 15.7	Performance Evaluation of Boost and Z-Source Converters for Fuel Cell Application <i>Muhammad M. Roomi, Ali I. Maswood and Hossein Dehghani Tafti</i> School of Electrical and Electronic Engineering Nanyang Technological University Singapore	Singapore	398
S 15.8	Active/Reactive Power Control of PV Grid-tied NPC Inverter Using 3-D Space Vector Modulation in abc Coordinate <i>Hossein Dehghani Tafti, Ali I. Maswood and Muhammad M. Roomi</i> School of Electrical and Electronic Engineering Nanyang Technological University, Singapore	Singapore	404

S 16: Battery and Energy Storage System in Smart Grid I			
Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 16.1	Load Levelling and Loss Reduction by ES in a Primary Distribution System with PV Units <i>Junainah Sardi¹, N. Mithulanathan¹, Duong Quoc Hung¹ and Krischonme Bhummkittipich²</i> ¹ School of Information Technology and Electrical Engineering University of Queensland, Brisbane, Australia ² Department of Electrical Engineering, Rajamangala University of Technology Thanyaburi, Thanyaburi, Thailand	Thailand	021
S 16.2	ANN based Optimized Battery Energy Storage System Size and Loss Analysis for Distributed Energy Storage Location in PV-Microgrid <i>Thongchart Kerdphol, Ravi N. Tripathi, Tsuyoshi Hanamoto, Khairudin, Yaser Qudaih, and Yasunori Mitani</i> Department of Electrical and Electronics Engineering Kyushu Institute of Technology, Fukuoka, Japan	Japan	061
S 16.3	Characteristics Evaluation of an LMI-Synthesis H[∞] Controller for a Superconducting Magnetic Energy Systems Applied in Power Systems <i>M.A. Chowdhury¹, M.A. Mahmud² and A.M.T. Oo²</i> ¹ Faculty of Engineering, Computing and Science Swinburne University of Technology Sarawak Campus, Malaysia ² Faculty of Science, Engineering and Built Environment, Deakin University, Waurn Ponds Campus, Victoria, Australia	Malaysia	094
S 16.4	Intelligent Energy Management of Distributed Energy Storage Systems in Microgrid <i>N. Azieroh Arman, T. Logenthiran and W.L. Woo</i> School of Electrical and Electronic Engineering Newcastle University	Singapore	128
S 16.5	Cost-Effectiveness Studies of the BESSs Participating in Frequency Regulation <i>Tian Zhang¹, Hoay Beng Gooi¹, Shuaixun Chen², and Terence Goh²</i> ¹ School of Electrical and Electronic Engineering Nanyang Technological University, Singapore ² DNV GL Energy (formerly KEMA), Singapore	Singapore	134
S 16.6	Application of HESS for PV System with Modified Control Strategy <i>Ujjal Manandhar, Abhisek Ukil, Sathish Kumar Kollimalla, H.B. Gooi</i> School of Electrical and Electronics Engineering Nanyang Technological University, Singapore	Singapore	262
S 16.7	Variable Two Stage Rate-Limit Control for Battery Energy Storage System <i>Sathish Kumar Kollimalla, Abhisek Ukil, H.B. Gooi and Ujjal Manandhar</i> School of Electrical Engineering Nanyang Technological University, Singapore	Singapore	312
S 16.8	Battery Storage and Hybrid Battery Supercapacitor Storage Systems: A Comparative Critical Review <i>Imran Chotia and Sunetra Chowdhury</i> Electrical Engineering Department University of Cape Town, South Africa	South Africa	140

S 17: Electricity Markets, Incentives, Regulation and Pricing II			
Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 17.1	A Canonical Coalitional Game Theoretic Approach for Energy Management for Nanogrids <i>Wayes Tushar¹, Chau Yuen¹, David B. Smith², Naveed Ul Hassan³, and H. Vincent Poor⁴</i> ¹ Singapore University of Technology and Design (SUTD), Singapore. ² NICTA and Australian National University, Canberra, Australia. ³ Electrical Engineering Department, LUMS, Lahore, Pakistan. ⁴ School of Engineering and Applied Science, Princeton University, NJ, USA	Singapore	249
S 17.2	Online Optimal Power Management Considering Electric Vehicles, Load Curtailment and Grid Trade in a Microgrid Energy Market <i>Vivek Mohan¹, Reshma Suresh M.P.¹, Jai Govind Singh¹, Weerakorn Ongsakul¹, and Boddeti Kalyan Kumar²</i> ¹ Energy FoS, School of Environment Resources and Development Asian Institute of Technology, Pathumthani, Thailand ² Department of Electrical Engineering Indian Institute of Technology Madras, Tamil Nadu, India	Thailand	275
S 17.3	Stochastic Optimal Regulation Service Strategy for a Wind Farm Participating in the Electricity Market <i>Baohua Zhang, Weihao Hu, and Zhe Chen</i> Department of Energy Technology	Denmark	342

S 17.4	Aalborg University, Aalborg, Denmark Operation Optimization of CCHP-Type Microgrid Considering Units' Part-Load Characteristics <i>Z.X. Yuan, Z.X. Jing, R.X. Hu, and Q.H. Wu</i>	China	182
S 17.5	South China University of Technology, Guangzhou, China Capacity Configuration Optimization for Island Microgrid with Wind/Solar/Pumped Storage Considering Demand Response <i>R. X. Hu, X.Y. He, Z. X. Jing, Z.X. Yuan and Q. H. Wu</i>	China	353
S 17.6	South China University of Technology, Guangzhou, China Case Study on the Feasibility of Renewable Integration in the Temburong Island of Brunei <i>Manikandan Padmanaban¹, Jagabondhu Hazra¹, Kalyan Dasgupta¹, Ashish Verma¹, Sathyajith Mathew², and Iskandar Petra²</i> ¹ IBM India Research Lab., Bangalore, India ² Universiti Brunei Darussalam, Brunei Darussalam.	India	191
S 17.7	Optimal Power Flow with Grid Scale Battery Storage <i>Jagabondhu Hazra¹, Kalyan Dasgupta¹, Manikandan Padmanaban¹, Ashish Verma¹, Sathyajith Mathew², and Iskandar Petra²</i> ¹ IBM India Research Lab., Bangalore, India ² Universiti Brunei Darussalam, Brunei Darussalam	India	199
S 17.8	Estimating Return on Investment for Grid Scale Storage within the Economic Dispatch Framework <i>Kalyan Dasgupta, Jagabondhu Hazra, Subendhu Rongali and Manikandan Padmanaban</i> IBM Research, India	India	279

S 18: Smart Grid: General Concepts I

Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 18.1	Analyses of Smart Grid Technologies and Solutions from a System Perspective <i>Sajeesh Babu, Jan Henning Jürgensen, Carl Johan Wallnerström, Lina Bertling Tjernberg, Patrik Hilber</i> School of Electrical Engineering KTH Royal Institute of Technology, Stockholm, Sweden	Sweden	135
S 18.2	Impact of Feedback Interventions on Residential Electricity Demand in Australia's First Large Scale Smart Grid Project <i>H. Fan¹, A.B. Sproul¹, and I.M. MacGill²</i> ¹ School of Photovoltaic and Renewable Energy Engineering University of New South Wales, Sydney, Australia ² Centre for Energy and Environmental Markets and School of Electrical Engineering and Telecommunications University of New South Wales, Sydney, NSW, Australia	Australia	313
S 18.3	Co-simulation Platform for Smart Grid Applications <i>Bhagya Amarasekara¹, Chathurika Ranaweera², Ampalavanapillai Nirmalathas², and Rob Evans²</i> ¹ NICTA Victoria Research Laboratory, Department of Electrical and Electronic Engineering, University of Melbourne, Australia ² Department of Electrical and Electronic Engineering University of Melbourne, Australia	Australia	340
S 18.4	Co-Simulation Framework based on Power System, AI and Communication Tools for Evaluating Smart Grid Applications <i>Ishtiaq Ahmad¹, Jawad Haider Kazmi¹, Mohsin Shahzad¹, Peter Palensky², and Wolfgang Gawlik³</i> ¹ Energy Department, Austrian Institute of Technology, Vienna, Austria ² Electrical Engineering, Mathematics and Computer Science TU Delft, Netherland ³ Institute of Energy Systems and Electrical Drives, TU Wien, Austria	Austria	381
S 18.5	SMART Centre of Excellence: A Tabletop Demonstration Kit <i>C.P.S. Chew, T. Logenthiran, and W.L. Woo</i> School of Electrical and Electronic Engineering Newcastle University, Singapore	Singapore	154
S 18.6	Alternative Power Source in Various Substation Applications <i>David Xu, Nicholas S. Powers, Mathew Paul, Worawut Sae-Kok, and Praditpong Suksirithawornkul</i> ABB	ABB	412
S 18.7	MEA Smart Grid Roadmap and Initiation of the Smart District Office Building Pilot Project <i>Att Phayomhom, Nattanont Chotiheerunyasakaya, Mutchimas Kheawkham, and Supakorn Songsit</i> Metropolitan Electricity Authority	Thailand	323
S 18.8	An Agent-based Open Source Platform for Building Energy Management <i>W. Khamphanchai, M. Pipattanasomporn, M. Kuzlu, and S. Rahman</i> Advanced Research Institute – Virginia Tech, Arlington, VA, USA	USA	112

S 19: Information, Communication and Metering Technologies in Smart Grid I			
Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 19.1	A Novel Zigbee-based Data Acquisition System for Distributed Photovoltaic Generation in Smart Grid <i>Syed Zahurul¹, Norman Mariun¹, Leong Kah¹, Hashim Hizam¹, Mohammad Lutfi Othman¹, Izham Zainal Abidin², and Yap Norman¹</i> ¹ Center for Advanced Power and Energy Research Faculty of Engineering, Universiti Putra Malaysia, Serdang, Malaysia. ² Electrical Power Engineering Universiti Tenaga Nasional, Kajang, Malaysia	Malaysia	219
S 19.2	New Security Features in DLMS/COSEM – a Comparison to the Smart Meter Gateway <i>Stefan G. Hoffmann, Robin Massink, and Gerd Bumiller</i> Germany, DNV GL, Hochschule Ruhr West	Germany	255
S 19.3	Combined Electricity and Mobile Network Situation Awareness System for Disturbance Management <i>Heidi Krohns-Välimäki¹, Jussi Haapanen¹, Pekka Verho¹, Joonas Sää², and Jukka Lempiäinen²</i> ¹ Department of Electrical Engineering Tampere University of Technology, Tampere, Finland ² Department of Electronics and Communications Engineering Tampere University of Technology, Tampere, Finland	Finland	296
S 19.4	Secure Communication of Smart Metering Data in the Smart Grid Secondary Substation <i>Peyman Jafary and Sami Repo</i> Department of Electrical Engineering Tampere University of Technology, Tampere, Finland	Finland	324
S 19.5	Review of Communication Technologies for Smart Homes/Building Applications <i>M. Kuzlu, M. Pipattanasomporn, and S. Rahman</i> Virginia Tech – Advanced Research Institute, Arlington, VA, USA	USA	230
S 19.6	The Static Security Analysis in Power System Based on Spark Cloud Computing Platform <i>Gang Zhou, Dapu Zhao, Kexu Zou, Weida Xu, Xinjie Lv, Qian Wang, and Wenjun Yin</i> IBM Research - China	China	345
S 19.7	Implementation of Rauch-Tung-Striebel Smoother for Power System Dynamic State Estimation in the Presence of PMU Measurements <i>J.G. Sreenath¹ and S. Chakrabarti¹ and Ankush Sharma²</i> ¹ Indian Institute of Technology Kanpur, India ² Utility Center of Excellence, Tata Consultancy Services, Pune, India	India	092

S 20: Power System Protection and Fault Diaganosis in Smart Grid III			
Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 20.1	Recloser-Fuse Coordination Tool for Distributed Generation Installed Capacity Enhancement <i>Autthaporn Supannon and Peerapol Jirapong</i> Department of Electrical Engineering, Faculty of Engineering Chiang Mai University, Chiang Mai, Thailand	Thailand	165
S 20.2	A Directional Protection Scheme Based on Non-periodic Current for Transmission lines <i>Y.K. Wang, M.S. Li, T.Y. Ji, and Q.H. Wu</i> School of Electrical Power Engineering South China University of Technology, Guangzhou, China	China	171
S 20.3	Current Transformer Saturation Segmentation Using Morphological Gradient-Based Detectors <i>L.L. Zhang, T.Y. Ji, M.S. Li, and Q.H. Wu</i> School of Electric Power Engineering South China University of Technology, Guangzhou, China	China	175
S 20.4	Application of Discrete Wavelet Transform for Identification of Induction Motor Stator Inter-Turn Short Circuit <i>Y. Zhang¹, T.Y. Ji, M.S. Li¹, and Q.H. Wu^{1,2}</i> ¹ School of Electrical Power Engineering South China University of Technology (SCUT), Guangzhou, China. ² Department of Electrical Engineering and Electronics The University of Liverpool, Liverpool, U.K.	China	180
S 20.5	A Phasor Measurement Algorithm Based on Mathematical Morphology and Instantaneous Reactive Power Theory <i>L.L. Zhang, M.S. Li, T.Y. Ji, and Q.H. Wu</i> School of Electric Power Engineering South China University of Technology, Guangzhou, China	China	213
S 20.6	Power Transformer Fault Classification by Combining Genetic Reduction with Optimized Multilayer Support Vector Machine	China	238

	<i>T. Qian¹, W.H. Tang¹, and Q.H. Wu¹, H.Z. Lia², and S.X. Chena²</i>		
	¹ School of Electric Power Engineering South China University of Technology, Guangzhou, China		
	² Foshan Power Supply, Bureau of Guangdong Province, China		
S 20.7	Evaluation of Fault Ride Through Capability Enhancement of DFIG-Based Wind Turbine with Bi-2212 Superconducting Fault Current Limiter	Thailand	106
	<i>Sillawat Romphochai and Komsan Hongesombut</i>		
	Department of Electrical Engineering Kasetsart University, Bangkok, Thailand		

S 21: Modeling, Integration and Management of Renewable Energy in Smart Grid III

Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 21.1	A Study of Wind Power Curtailment Using Frequency Sensitivity and Transient Stability <i>Toshiki Takayama, Takato Otani, Junnosuke Kobayashi and Shinichi Iwamoto</i>	Japan	036
	Department of Electrical Engineering and Bioscience Waseda University, Tokyo, Japan		
S 21.2	Evaluation of the Effects of Photovoltaic Inverter Controllers on Grid Injected Power with Local Dynamic Loads <i>Saidu Kumo Mohammed, Norman Mariun, Mohd Amran Mohd Radzi, Noor Izzri Abdul, Wahab, Sabo Mahmoud Lurwan</i>	Malaysia	129
	Department of Electrical and Electronics Engineering Faculty of Engineering, Universiti Putra Malaysia, Selangor, Malaysia		
S 21.3	Forecasting of Photovoltaic Power using Extreme Learning Machine <i>T. T. Teo, T. Logenthiran and W.L. Woo</i>	Singapore	130
	School of Electrical and Electronic Engineering Newcastle University, Singapore		
S 21.4	Voltage Sensorless Predictive Direct Power Control for Renewable Energy Integration Under Grid Fault Conditions <i>Y.K. Tao¹, Q.H. Wu², W.H. Tang¹, and L. Wang¹</i>	China	159
	¹ School of Electrical Power Engineering South China University of Technology, Guangzhou, China ² Department of Electrical Engineering and Electronics University of Liverpool, Liverpool, U.K		
S 21.5	Wind Power Forecasting Considering Wind Turbine Condition <i>Pei Yan¹, Qian Zheng¹, and Chen Niya²</i>	China	161
	¹ School of Instrument Science and Opto-electronics Engineering Beihang University, Beijing, China ² ABB Corporate Research Center, Beijing, China		
S 21.6	Economic Operation of Smart Grid Based on The Statistics of Renewable Energy <i>Munkhbayasgalan Enkhtuvshin, Kang-Zhi Liu, and Tadanao Zanma</i>	Japan	263
	Department of Electrical and Electronic Engineering, Chiba University		
S 21.7	Virtual Grid for Renewable Energy Society <i>Haruhisa Ichikawa¹, Yuusuke Kawakita¹, Kenji Sawada¹, Ashir Ahmed², Hiroshi Hanafusa³, Shinji Yokogawa⁴, Hirohide Mikami⁵, and Noriaki Yoshikawa⁵</i>	Japan	276
	¹ The University of Electro-Communications, Chofu, Tokyo, Japan. ² Kyushu University, Fukuoka, Fukuoka, Japan ³ NEC Corporation, Kawasaki, Kanagawa, Japan ⁴ Polytechnic University, Kodaira, Tokyo, Japan ⁵ Cyber Creative Institute, Shibuya, Tokyo, Japan		

S 22: Artificial Intelligence and Optimization in Smart Grid II

Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 22.1	A Statistical Energy Efficiency Optimization Method for Coal-fired Power Generation Systems <i>Ming Li, Fang Hou, and Qin Zhou</i>	China	271
	Accenture, Beijing, China		
S 22.2	Economic Dispatch Integrating Wind Power Generation Farms Using Cuckoo Search Algorithm <i>Duy C. Huynh¹ and Nirmal Nair²</i>	Vietnam	360
	¹ Electrical and Electronic Engineering Department Ho Chi Minh City University of Technology, Vietnam ² Electrical and Computer Engineering Department The University of Auckland, New Zealand		
S 22.3	Multi-objective Optimal Power Flow Using Stochastic Weight Trade-off Chaotic NSPSO <i>Anongpun Man-Im¹, Weerakorn Ongsakul¹, Jai Govind Singh¹, Chanwit</i>	Thailand	411

	<i>Boonchuay²</i> ¹ Energy FoS, SERD, Asian Institute of Technology, Thailand ² Department of Electrical Engineering Technology, Faculty of Industry and Technology, Rajamangala University of Technology Rattanakosin, Prachuap Khiri Khan, Thailand		
S 22.4	Optimal Wind Capacity Integration Considering the Possibilistic Uncertainty of Wind Resources <i>Can Sun¹, Min Xie¹, Zhaohong Bie², Jiangfeng Jiang², and Xiaobo Song³</i> ¹ City University of Hong Kong, Hong Kong ² Xi'an Jiaotong University, China ³ State Grid Tianjin Electric Power Company, China	China	328
S 22.5	Optimal Selection of Location, Sizing and Power factor for Solar PV Plants using Differential Evolution <i>Phung Dang Huy, Vigna K. Ramchandaramurthy and Mahmoud Pesaran H.A.</i> Universiti Tenaga Nasional	Malaysia	351
S 22.6	Feasibility Study of Photovoltaic (PV)-Diesel Hybrid Power Systems for Remote Networks <i>GM Shafiullah and Craig E. Carter</i> Murdoch University, Australia	Australia	217
S 22.7	Application of Improved GM(1,N) Models in Annual Electricity Demand Forecasting <i>Li Xiaobo, Jing Zhaoxia, and Wu Qinghua</i> South China University of Technology, Guangzhou, China	China	052

S 23: Power System Automation and Control in Smart Grid II

Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 23.1	Intelligent Distributed Smart Grid Network - Reconfiguration <i>C.H. Ng, T. Logenthiran and W.L. Woo</i> School of Electrical and Electronic Engineering Newcastle University, Singapore	Singapore	133
S 23.2	An Effective Phase Tracking Method for Controlling Multi-terminal High Voltage DC Grids under AC Grid Contingencies <i>Z. Xu and J. Zhu</i> ¹ Department of Electrical and Electronic Engineering The University of Nottingham China Campus, Ningbo, China ² State Grid Electric Power Research Institute (SGEPRI), Nanjing, China	China	216
S 23.3	A Novel Active Splitting Strategy Search Method With Modularity-Based Network Partition <i>Yifan Zhou¹, Wei Hu¹, Qiangming Zhou², Hongqiao Yu², and Jian Pu²</i> ¹ State Key Lab of Power Systems, Department of Electrical Engineering, Tsinghua University Beijing, China ² Hubei Electrical Power Company, Wuhan, China	China	399
S 23.4	Field Validation of a Weather-Based Dynamic Rating System for Transmission Line <i>Yuehao Yan¹, Weizheng Zhang¹, Hui Lin¹, Zhengrong Li², and Rui Tang²</i> ¹ State Grid Henan Electric Power Company Zhengzhou Power Supply Company, Zhengzhou, China ² Shanghai Haineng Information Technology Co., Ltd., Shanghai, China	China	102
S 23.5	The Development of the Automatic Power Flow Control Station in Distribution Electric Network of a Low Voltage <i>E.N. Sosnina, A.B. Loskutov, A.I. Chivenkov, and A.V. Shalukho</i> Nizhny Novgorod State Technical University	Russia	391
S 23.6	Active Power Control in an Islanded Microgrid using DC Link Voltage Status <i>M.A. Hossain¹, M.I. Azim¹, M.A. Mahmud² and H.R. Pota¹</i> ¹ The University of New South Wales ² Deakin University	Australia	338
S 23.7	Reducing User Discomfort in Direct Load Control of Domestic Water Heaters <i>Alexander Belov¹, Alexandr Vasenevy¹, Paul J.M. Havinga¹, Nirvana Meratnia¹, and Berend Jan van der Zwaag²</i> ¹ University of Twente ² Adaptive Systems, Hengelo (O)	The Netherlands	376

S 24: Integration and Management of Electric Vehicle in Smart Grid II

Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 24.1	Multi-objective Siting and Sizing of E Charging Stations in the Distribution System <i>Anupam Trivedi, Bharat Menon, Dipti Srinivasan, Anurag Sharma and Wong Fong Dong Nicholas</i> Department of Electrical and Computer Engineering National University of Singapore	Singapore	268

S 24.2	Optimal Day Ahead scheduling of distributed EVs in a Smart Distribution Network <i>Anand M.P, Vivek Mohan, Weerakorn Ongsakul, Reshma Suresh M.P.</i> School of Environment, Resources and Development Asian Institute of Technology, Pathumthani, Thailand	Thailand	305
S 24.3	Incentivizing Electric Vehicles to Provide Regulation While Recharging <i>Wenjing Shuai , Patrick Maillé, and Alexander Pelov</i> Institut Mines-Telecom/Telecom Bretagne, France	France	362
S 24.4	Optimal Electric Vehicle Scheduling in Smart Home with V2HV2G Regulation <i>Dalong Guo, Peizhong Yi, Chi Zhou, and Jia Wang</i> Electrical and Computer Engineering Department Illinois Institute of Technology, Chicago, Illinois	USA	332
S 24.5	Performance Analysis of Future PEA Distribution Network Under High Penetration of PEVs Home Charging <i>Thongchai Klayklung and Sanchai Dechanupaprittha</i> Kasetsart University, Bangkok, Thailand	Thailand	207
S 24.6			
S 24.7			

S 25: Micro Grid and Distributed Generation Management in Smart Grid III			
Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 25.1	Optimal Design of Stand-Alone Microgrid Resources Based on Proposed Monte-Carlo Simulation <i>Hamidreza Jahangir, Ali Ahmadian and Masoud Aliakbar Golkar</i> Faculty of Electrical Engineering K.N.Toosi University of Technology, Tehran, Iran	Iran	295
S 25.2	Multi-Objective Sizing of Grid-Connected Micro-Grid Using Pareto Front Solutions <i>Hamidreza Jahangir, Ali Ahmadian and Masoud Aliakbar Golkar</i> Faculty of Electrical Engineering K.N.Toosi University of Technology, Tehran, Iran	Iran	319
S 25.3	Grid Connected-Induction Generator StartUp Sequence Observation Using Laboratory Simulator <i>F. Danang Wijaya, EkaFirmansyah, Sarjiya, M. Isnaeni B.S.</i> Department of Electrical Engineering and Information Technology Faculty of Engineering, Universitas Gadjah Mada (UGM), Yogyakarta, Indonesia	Indonesia	368
S 25.4	The Development of Hybrid Power Source Based on SOFC for Distant Electricity Consumers' Power Supply <i>Alexey Loskutov, Elena Sosnina, Alexandr Chivenkov, Evgeny Kryukov</i> Nizhny Novgorod State Technical University	Russia	200
S 25.5	A Context Vector Regression based Approach for Demand Forecasting in District Heating Networks <i>Subendhu Rongali , Anamitra R. Choudhury, Vikas Chandan and Vijay Arya</i> IBM Research India	India	363

S 26: Power System Protection and Fault Diaganosis in Smart Grid IV			
Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 26.1	Circuit Representation of Voltage Unbalance Emission Due to Line Asymmetry <i>Diego Bellan and Sergio A. Pignari</i> Department of Electronics, Information and Bioengineering Politecnico di Milano, Italy	Italy	186
S 26.2	Overcurrent Protection of Distribution Network with Distributed Generation <i>Dinesh Kumar Jain, Pankaj Gupta, and Mohan Singh</i> Indira Gandhi Delhi Technical University For Women, Dcrust, Murthal	India	192
S 26.3	A Review of Active/Reactive Power Control Strategies for PV Power Plants under Unbalanced Grid Faults <i>Hossein Dehghani Tafti¹, Ali I. Maswood¹, Ziyou Lim², Gabriel H. P. Ooi¹, PinkymolHarikrishna Raj¹</i> ¹ School of Electrical and Electronic Engineering Nanyang Technological University, Singapore ² Energy Research Institute @ NTU (ERI@N), Interdisciplinary Graduate School, Nanyang Technological University, Singapore	Singapore	204
S 26.4	A New Fault Isolation and Automatic Energization Scheme for Inverter Interfaced Distributed Energy Resource using Autorecloser <i>M. P. Vinod, Durgesh Kumar Singh and Arinjai Gupta</i> ABB GISPL, Bangalore, INDIA	India	260
S 26.5	Method of Cable Incipient Faults Detection and Identification based on Wavelet Transform and Gray Correlation Analysis <i>Chuan Zhou¹, Niancheng Zhou¹, Shu Pan¹, Qianggang Wang¹, Tiyin Li², Jing Zhang³</i> ¹ State Key Laboratory of Power Transmission Equipment and System Safety and New Technology, Chongqing University, Chongqing, China ² Power Supply Bureau of Yuhang, Hangzhou, China ³ Zhejiang Qunli Electric Co., Ltd, Hangzhou, China	China	016

S 27: Modeling, Integration and Management of Renewable Energy in Smart Grid III			
Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 27.1	Battery Integrated Solar Photovoltaic Energy Management System for Micro-Grid <i>Kannan Thirugnanam¹, See Gim Kerk², Chau Yuen¹ and Balasubramaniam Thirunavukarasu¹</i> ¹ Engineering Product Development Pillar, SUTD, Singapore ² Power Automation, Singapore	Singapore	272
S 27.2	Using Renewables to Reduce Peak Demand: Lessons from an Australian Experience <i>Arun Vishwanath¹, Sunil Ghai¹, Vikas Chandan¹, Tanuja Ganu¹, Zainul Charbiwala¹, Shivkumar Kalyanaraman¹, Charles Blake²</i> ¹ IBM Research, India, Australia ² Townsville City Council, Australia	Australia	287
S 27.3	Understanding the Performance of Solar PV Systems Using Data-Driven Analytics <i>Sue A. Chen^{1,4}, Arun Vishwanath¹, Saket Sathe¹, Shivkumar Kalynaraman² and Siyuan Lu³</i> ¹ IBM Research - Australia ² IBM Research – India ³ IBM Thomas J. Watson Research Center ⁴ School of Mathematics and Statistics, University of Melbourne	Australia	289
S 27.4	An Enhancement to Cumulant-based Probabilistic Power Flow Methodologies <i>Duong D. Le¹, Kien V. Pham¹, Duong V. Ngo², Ky V. Huynh², Nhi T. A. Nguyen³, Alberto Berizzi³</i> ¹ Department of Electrical Engineering Danang University of Science and Technology ² The University of Danang, Danang, Vietnam ³ Department of Energy, Politecnico di Milano, Italy	Vietnam	160
S 27.5	Design, Simulation and Implementation of a Grid Tied Solar Power Controller Integrated with Instant Power Supply Technology <i>Masum Billah, Sanjoy Kumar Das, Md. Toriqul Islam, Md. Anamul Haque, Bishwajit Banik Pathik</i> Department of Electrical and Electronic Engineering American International University-Bangladesh (AIUB), Dhaka	Bangladesh	383

S 28: Battery and Energy Storage System in Smart Grid II			
Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 28.1	On-Line Lithium-Ion Battery State of Health Estimation Using Aging-Related Impedance Identification with Optimization <i>Sho Ohtani¹, Junichi Miyamoto¹, Hiroshi Kajitani¹, and Shingo Takahashi²</i> ¹ Smart Energy Research Laboratories NEC Corporation, Kawasaki, Japan ² NEC Laboratories Singapore, NEC Asia Pacific Pte. Ltd., Singapore	Japan	288
S 28.2	Optimal Dispatch Strategy of Hybrid Power Generation with Battery Energy Storage System in Islanding Mode <i>Noppasit Piphitpattanaprap and David Bangerdpongchai</i> Department of Electrical Engineering Faculty of Engineering, Chulalongkorn University, Bangkok, Thailand	Thailand	401
S 28.3	Sizing of Battery Energy Storage System for Sustainable Energy in a Remote Area <i>Kollawat Keskamol and Naebboon Hoonchareon</i> Department of Electrical Engineering Faculty of Engineering, Chulalongkorn University, Bangkok, Thailand	Thailand	410
S 28.4	Optimizing Energy Cost via Battery Sizing in Residential PV/Battery Systems <i>Elahe Doroudchi, Sudip Kumar Pal, Matti Lehtonen and Jorma Kyyrä</i> Aalto University, Finland	Finland	256
S 28.5	Smart Frequency Control in Power Transmission Systems Using a BESS <i>Jan Servotte¹, Enrique Acha² and Luis M. Castro³</i> ¹ Department of Electrical Energy Engineering, Systems and Automation, Ghent University, Gent, Belgium ² Department of Electrical Engineering, Tampere University of Technology (TUT), Tampere, Finland. ³ Electrical Engineering Department at the National Autonomous University of Mexico (UNAM), Mexico City, Mexico	Finland	379

S 29: Information, Communication and Metering Technologies in Smart Grid III

Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 29.1	A Versatile Solution for Continuous On-line PD Monitoring <i>Bashir Ahmed Siddiqui, Pertti Pakonen, Pekka Verho and Antti Hilden</i> Department of Electrical Engineering Tampere University of Technology, Tampere, Finland	Finland	301
S 29.2	On Possibilities of Using Smart Meters for Emergency Grid Management- Analysing the Effect on Power Quality <i>Yasir Arifat¹, Lina Bertling Tjernberg², and Per-Anders Gustafsson³</i> ¹ Division of Electric Power Engineering Chalmers University of Technology Gothenburg, Sweden ² School of Electrical Engineering, KTH Royal Institute of Technology Stockholm, Sweden ³ Göteborg EnergiNät AB Gothenburg, Sweden	Sweden	327
S 29.3	False Data Injection Attacks with Local Topology Information against Linear State Estimation <i>Ying Sun, Wen-tai Li, Wentu Song and Chau Yuen</i> Engineering Product Development Singapore University of Technology and Design, Singapore	Singapore	336
S 29.4	Robust Snapshot Algorithm for Power Consumption Monitoring in Computationally Constrained Micro-Grids <i>Pacome L. Ambassa¹, Stephen D. Wolthusen², Anne V.D.M. Kayem¹, and Christoph Meinel³</i> ¹ Department of Computer Science University of Cape Town, South Africa ² Norwegian Information Security Laboratory Gjøvik University College Gjøvik, Norway ³ Hasso Plattner Institute, University of Potsdam, Germany	South Africa	377
S 29.5	Real-Time Display of Data from a Smart Grid on Geographical Map Using a GIS Tool and its Role in Optimization of Game Theory <i>Monika¹, Dipti Srinivasan¹, and Thomas Reindl²</i> ¹ Electrical and Computer Engineering, National University of Singapore ² Solar Energy Research Institute of Singapore, Singapore	Singapore	297

S 30: Demand Side Management in Smart Grid III

Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 30.1	Control Strategies for Demand-side Management in Smart Grids Part 1: Assessment Methodology Based on Reliability <i>Franz M. Hanser</i> Institute for Energy Systems, The University of Edinburgh, UK	United Kingdom	211
S 30.2	Control Strategies for Demand-side Management in Smart Grids Part 2: Developing the Control Strategy <i>Franz M. Hanser</i> Institute for Energy Systems, The University of Edinburgh, UK	United Kingdom	212
S 30.3	The Value of Online Information for Demand Response in Walrasian Electricity Markets <i>Felix Claessen, Bart Liefers, Michael Kaisers, and Han La Poutré</i> CWI Netherlands	Netherlands	137
S 30.4	Real-Time Scheduling of Time-Shiftable Loads in Smart Grid with Dynamic Pricing and Photovoltaic Power Generation <i>Congmiao Li, Dipti Srinivasan, Thomas Reindl</i> Solar Energy Research Institute of Singapore National University of Singapore	Singapore	167
S 30.5	Demand Response Optimization of Power Generation and Consumption in Energy Intensive Enterprise <i>Zhen Hu¹, Bin Duan², Yunke Xu², and Nengxue Li²</i> ¹ College of Information Engineering Xiangtan University, Xiangtan, China ² Collaborative Innovation Center of Wind Power Equipment and Energy Conversion, Xiangtan, China	China	064

S 31: Stability and Security in Smart Grid II

Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 31.1	Distributed Security Constrained Economic Dispatch <i>M. Hadi Amini¹, Rupamathi Jaddivada¹, Orkun Karabasoglu¹ Sakshi Mishra²</i> ¹ Department of Electrical and Computer Engineering Carnegie Mellon University, Pittsburgh, PA, USA. ² Energy Science, Technology and Policy, CIT interdisciplinary Carnegie Mellon University, Pittsburgh, PA, USA.	USA	330
S 31.2	System Identification of an Interconnected Power System with an Energy Storage System for Robust Stability Improvement	Thailand	408

S 31.3	<i>Noowarat Tephiruk and Komsan Hongesombut</i> Department of Electrical Engineering Faculty of Engineering, Kasetsart University, Bangkok, Thailand	United Kingdom	177
S 31.4	Development of Distribution Networks with Low Carbon Technologies <i>Nurulafiqah Nadzirah Mansor and Victor Levi</i> Department of Electrical and Electronic Engineering The University of Manchester, United Kingdom	India	335
S 31.5	Forced Islanding and Restoration Scheme to Prevent Blackout for Improving Power System Security <i>Sumi Soman¹, Polly Thomas¹, Sherin Tom¹ and John George²</i> ¹ Saintgits College of Engineering, Kottayam, India ² College of Engineering Adoor, India	India	361
	Fast Decoupled State Estimation based on Current Equations <i>Noopura S.P.¹, James Ranjith Kumar R.¹, Amit Jain¹, and Jayan. M.V.</i> ¹ Central Power Research Institute, India ² Government Engineering College, Thrissur, India		

S 32: Power System Protection and Fault Diaganosis in Smart Grid V

Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 32.1	Preliminary Study on Adaptive Fast-tripping Current Protection for Microgrid <i>Wenchao Fan¹, Zaijun Wu¹, Xiaobo Dou¹, Ye Shi¹, Yang Wang¹ and Mingxing Zhou²</i> ¹ School of Electrical Engineering Southeast University Nanjing, China ² Yinchuan Power Supply Company	China	314
S 32.2	Designing and Research of a Novel Current Limiting DC Hybrid Circuit Breaker with the Combinatorial Electronic Switch <i>Huan Zheng, Hongyang Lin and Yi Du</i> Power Economic Technology Research Institute Fujian Electric Power Company, China	China	393
S 32.3	A Smart and Adaptive Scheme for Generator Out of Step Protection <i>Nitesh Kumar D.¹, R. Nagaraja¹, and H.P. Khincha²</i> ¹ Power Research and Development Consultant Pvt. Ltd, Bangalore, India ² Indian Institute of Science Bangalore, India	India	208
S 32.4	Adaptive Over Current Relay Coordination Algorithm for Changing Short Circuit Fault Levels <i>Manohar Singh and Vishnuvardhan Telukunta</i> Central Power Research Institute, Bangalore, India	India	229
S 32.5	Interface Flow Limit Identification Using Focused Time Delay Network for MEPS Transmission <i>N.B. Salim^{1,2}, Takao Tsuji¹, Tsutomu Oyama¹, and Kenko Uchida³</i> ¹ Yokohama National University, Japan ² Universiti Teknikal Malaysia Melaka, Malaysia ³ Waseda University, Japan	Japan	151

S 33: Modeling, Integration and Management of Renewable Energy in Smart Grid IV

Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 33.1	An Analytical Approach for Reliability Evaluation of Distribution Systems for Optimal Siting, Sizing and Type of Renewable Distributed Generators <i>Noppadol Kranjanaudom and Uthane Supatti</i> Faculty of Engineering at Sri Racha Kasetsart University, Sri Racha, Chonburi, Thailand	Thailand	321
S 33.2	Improving Resiliency in Renewable Energy Based Green Microgrids Using Virtual Synchronous Machines Controlled Inverter <i>Y.V. Pavan Kumar and Ravikumar Bhimasingu</i> Department of Electrical Engineering Indian Institute of Technology Hyderabad (IITH), India	India	347
S 33.3	Optimal Direct Voltage Control of MTDC Grids for Integration of Offshore Wind Power <i>Zhuang Xu¹ and C. Zhang²</i> ¹ Department of Electrical and Electronics Engineering The University of Nottingham Ningbo China ² State Grid Electric Power Reserch Intitute (SGEPRI) Nanjing, China	China	355
S 33.4	Forecasting of Solar Irradiance for Solar Power Plants by Artificial Neural Network <i>Siripong Watetakarn and Suttichai Premrudeepreechacharn</i> Department of Electrical Engineering, Faculty of Engineering Chiang Mai University, Chiang Mai, Thailand	Thailand	395

S 33.5	Impact of Variable Solar PV Generation in MEA's Power Distribution System <i>Att Phayomhom, Nattachote Rugthaicharoencheep, Surachai Chaitusaney, and B. Ainsuk</i> ¹ Department of Power System Planning Metropolitan Electricity Authority (MEA), Bangkok, Thailand. ² Department of Electrical Engineering, Faculty of Engineering Chulalongkorn University (CU), Bangkok, Thailand. ³ Department of Electrical Engineering, Faculty of Engineering Rajamangala University of Technology Phra Nakhon (RMUTP) ⁴ Special Project Department, Loxley Public Company Limited	Thailand	015
---------------	--	----------	-----

S 34: Building and Home Energy Management in Smart Grid II			
Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 34.1	Analysis of Different Scenarios for Residential Energy Management under Existing Retail Market Structure <i>M.N. Akter and M.A. Mahmud</i> School of Engineering, Deakin University, Australia	Australia	218
S 34.2	Decentralized Energy Management for a Group of Heterogenous Residential Customers <i>Batchu Rajasekhar and Naran Pindoriya</i> Electrical Engineering Indian Institute of Technology Gandhinagar, Ahmedabad, India	India	359
S 34.3	Smart Multi-Terminal DC μ-grids for Autonomous Zero-Net Energy Buildings: Implicit Concepts <i>Francisco Gonzalez Longatt¹, Bharat Singh Rajpurohit², and Sri Niwas Singh³</i> ¹ School of Electric, Electronic and Systems Engineering Loughborough University, United Kingdom. ² School of Electrical and Computer Science Indian Institute of Technology Mandi, Himanchal Pradesh, India. ³ Department of Electrical Engineering Indian Institute of Technology Kanpur, India	United Kingdom	059
S 34.4	Spatio-temporal Energy Profiling of Commercial Buildings <i>Rohit Chintala, Vikas Chandan, Sunil K. Ghai, Zainul M. Charbiwala, and Deva P. Seetharam</i> IBM Research - India	India	286
S 34.5	Response of Smart Residential Buildings with Energy Management Systems to Price Deviations <i>Sebastian Kochanek¹, Hartmut Schmeck¹, Ingo Mauser², and Birger Becker²</i> ¹ Karlsruhe Institute of Technology ² FZI Research Center for Information Technology	Germany	326

S 35: Evaluation and Enhancement of Power Quality and Reliability in Smart Grid II			
Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 35.1	An Hierarchical Control of AC Microgrid Composed of Distributed Power Resources Based on Voltage Source Converter <i>Bao Wei¹, Yan Yuehao¹, Chi Yuanhong¹, and Bao Weiyu²</i> ¹ Zhengzhou Electric Power Supply Company, Zhengzhou, China ² School of Electrical Engineering, Shandong University, Jinan, China	China	074
S 35.2	Improving Network Reliability Through Effective Asset Management <i>Paul Blackmore¹ and Nopbhorn Leeprechanon²</i> ¹ EA Technology Asset Management PTE Ltd., Singapore. ² Faculty of Engineering, Thammasat University, Thailand	Thailand	413
S 35.3	Design of a Transformer-less Single Switch-Mode Photovoltaic Grid-Connected Boost Inverter with Immittance Conversion Topology <i>Sajib Chakraborty¹, S. M. Salim Reza², Wahidul Hasan¹, M. Abdur Razzak¹</i> ¹ Department of Electrical and Electronic Engineering Independent University Bangladesh, Dhaka, Bangladesh ² Faculty of Science and Technology Bangladesh University of Professionals, Dhaka, Bangladesh	Bangladesh	195
S 35.4	Modeling and Control of Thyristor Controlled Phase Shifting Transformer <i>Yang Xiaonan¹, Chen Hongkun¹, Zhao Xiaochun², Wang Zhengfeng², Wu Xu², Song Yunting³, and Ding Jian</i> ¹ Wuhan University, Wuhan, China ² State Grid Anhui Electric Power Company, Anhui, China ³ China Electric Power Research Institute, Beijing, China	China	343
S 35.5	Analysis of Harmonics with Renewable Energy Integration into the Distribution Network	Australia	048

S 36: Smart Grid: General Concepts II

Ref. No.	Title, Authors, Affiliation	Country of Origin	ISGT Asia 2015 reference code
S 36.1	Short-Term Wind Speed Forecasting of Oak Park Weather Station By Using Different ANN Algorithms <i>Rohan Singh, Kishan Bhushan Sahay, and Shubhankar Aseet Srivastava</i> Madan Mohan Malaviya University of Technology, Gorakhpur, India	India	390
S 36.2	Performance Comparison of PI and PI-Fuzzy Controller for Grid-Connected Fuel Cell Inverter System <i>N.A. Zambri¹, M.N. Ismail¹ and Azah Mohamed²</i> ¹ Universiti Tun Hussein Onn Malaysia ² Universiti Kebangsaan Malaysia	Malaysia	280
S 36.3	Decentralized Hamiltonian Control of Isolated AC Microgrids: Theory & Design <i>Mohamed Toub¹, Ghassane Aniba¹, Mohamed Maaroufi¹, Rush D. Robinet III²</i> ¹ Mohammed V University of Rabat, Morocco ² Michigan Technological University, United States	Morocco	380