Paper Session and Title	Speaker	Institution	Authors
March 30th, 9:30am - 12:00pm **Room: Evergreen A** **Session #1 - Control of Distributed Energy Resources** **Session Chair: Farnaz Harirchi**			
Control of a Three Phase Inverter Mimicking Synchronous Machine with Fault Ride-through Capability	Vikram Chowdhury	Missouri Univ. Science and Tech.	Vikram Roy Chowdhury, Subhajyoti Mukherjee, Pourya Shamsi, Mehdi Ferdowsi
Double Integral Sliding Mode Control for Single-Stage Active FIBC-PFC in Smart Grid Applications	Farnaz Harirchi	Colorado School of Mines	Farnaz Harirchi, Hossein Sartipizadeh
Power Flow based Fault Analysis Method for Distribution Grid with Inverter-based DER	Dong-Eok Kim	Korea Electric Power Corporation	Dong-Eok Kim, Namhun Cho
Data-Driven Residential Load Modeling and Validation in	Peter Gotseff	NREL	Peter Gotseff, Blake Lundstrom
Power Metering: History and Future Trends	Fernando Garcia	S. Paulo State Univ (Unesp)	Fernando Deluno Garcia, Fernando Pinhabel Marafao, Wesley Angelino de Souza, Luiz Carlos Perei

March 30th, 1:00pm - 3:00pm **Room: Evergreen A** **Session #2 - Power Electronics for Microgrid Applications** **Session Chair: Anitha Sarah Subburaj**			
Model Predictive Control Analysis for the Battery Energy Storage System	Nimat Shamim	Texas Tech University	Nimat Shamim, Anitha Subburaj, Stephen Bayne
Stability Analysis of A.C and D.C Microgrids using OPAL- Real Time Digital Simulator	Anitha Subburaj	West Texas A & M University	Anitha Sarah Subburaj, Ankith Reddy Arra, Stephen Bayne
AC Microgrid Control using Adaptive Synchronous Reference Frame PLL	Osama Mohammed	Florida International University	Ahmed Sheikh, Tarek Yossef, Osama Mohammed
Control of Grid Connected PV Array using P&O MPPT Algorithm	Tasneim Aldhanhani	The Petroleum Institute	Muhammad Ibrahim Munir, Tasneim Aldhanhani, Khalifa Hasan Al Hosani

March 30th, 1:00pm - 3:00pm **Room: Evergreen C** **Session #3 - Interconnection, Capacity and Future of Renewable Energy** **Session Chair: Robert Cruickshank III**			
Capacity Value of Canadian Wind and the Effects of Decarbonization	Eduardo Ibanez	GE Energy Consulting	Eduardo Ibanez, Bahman Daryanian, Derek Stenclik, Richard Piwko, ,
PV Microgeneration Perspective in Brazil: Approaching interconnection procedures and equipment certification	Augusto Alonso	S. Paulo State Univ (Unesp)	Augusto Matheus dos Santos Alonso, Fernando Pinhabel MarafÃ£o, Flavio Alessandro SerrÃ£o GonÃ§alves, Helmo Kelis Morales Paredes, Danilo Iglesias BrandÃ£o
Empirical Investigations of the Opportunity Limits of Automatic Residential Electric Load Shaping	Robert Cruickshank III	University of Colorado	Robert Cruickshank III, Gregor Henze, Rajagopalan Balaji, Bri-Mathias Hodge, Anthony Florita
The New Vision and the Contribution of Solar Power in the Kingdom of Saudi Arabia Electricity Production	Yahya Alharthi	University of Missouri Kansas City	Yahya Z. Alharthi, Mahbube K. Siddiki, Ghulam M. Chaudhry

March 30th, 3:15pm - 5:45pm **Room: Evergreen A** **Session #4 - Power Electronics Control for Utility Integration** **Session Chair: Kerry McBee**			
IDA-Passivity-Based Control for Superconducting Magnetic Energy Storage with PWM-CSC	Oscar Giraldo	Univ. Tecnológica de Pereira	Oscar Giraldo, Walter Julian Gil Gonzalez, Alejandro Garces Ruiz, Gerardo Rene Espinosa Perez
Thermal Modeling for High Temperature Electrolysis of Lithium Carbonate With CO2 Sequestration	Jiaxin Peng	The George Washington Univ.	Jiaxin Peng, Vikram Narayana, Jason Lau, Matthew Lefler, Stuart Licht, Tarek El-Ghazawi
Islanding Detection with Data Mining methods - A Comparative Study	Rajesh Kavasseri	North Dakota State University	Hussein Al-Bataineh, Rajesh Kavasseri,
A novel generalized concept for three phase cascaded multilevel inverter topologies	Mubashwar Hasan	Curtin University	Md Mubashwar Hasan, A. Abu-Siada, Syed M. Islam, S. M. Muyeen
The Prediction of Electrical Cars' Growth Rate and Management of Electrical Energy Demand in Turkey	Musa Yilmaz	Batman University	Musa Yilmaz,

March 30th, 3:15pm - 5:45pm **Room: Evergreen C** **Session #5 - Energy Management and Power Quality** **Session Chair: Santosh Veda**			
Grid-price Dependent Optimal Energy Storage Management Strategy for Grid-connected Industrial Microgrids	Abinet Eseye	North China Elect Power Univ.	Abinet Tesfaye Eseye, Dehua Zheng, Han Li, Jianhua Zhang
Developing Use Cases for Evaluation of ADMS Applications to Accelerate Technology Adoption	Santosh Veda	NREL	Santosh Veda, Hongyu Wu, Maurice Martin, Murali Baggu
Back-to-back active power filter for current balancing in two-phase systems	Julio Viola	Universidad Politecnica Salesiana	Julio Viola, Marco Fajardo, Jose Restrepo, Jose Aller, Flavio Quizhpi, Antonio Ginart
Supervisory LMI-Based State-Feedback Control for Current Source Power Conditioning of SMES	Walter Gonzalez	Univ. Tecnológica de Pereira	Walter Gonzalez, Oscar Danilo Montoya Giraldo, Alejandro Graces Ruiz, Andres Escobar Mejia
Understanding the drivers of negative electricity price using decision tree	José Reston Filho	IDAAM Educação Superior	JosÈ Carlos Reston Filho, Ashutosh Tiwari, Chesta Dwivedi

March 31th, 9:30am - 12:00pm **Room: Evergreen A** **Session #6 - Renewable Energy Systems** **Session Chair : Kerry McBee**			
Analysis and Design of a Three Phase Photovoltaic System with Battery Back Up	Vikram Chowdhury	Missouri Univ. of Sci. and Technology	Vikram Roy Chowdhury, Subhajyoti Mukherjee, Pourya Shamsi, Mehdi Ferdowsi
Transformer Aging Due to High Penetrations of PV, EV Charging, and Energy Storage Applications	Kerry McBee	Fresno State University	Kerry McBee,
Power Quality Improvements for Integration of Hybrid AC/DC Nanogrids to Power Systems	Ahmed Ebrahim	Florida International University	AHMED EBRAHIM, Tarek Youssef, Osama Mohammed
Active Power and Flux Control of a Self-Excited Induction Generator for a Variable-Speed Wind Turbine Generation	Woonki Na	Cal St Univ-Fresno	Woonki Na, Edurad Muljadi, Bill Leighty,, Jonghoon Kim
Prioritization of Locations for PMU Placement	Amamihe Onwuachumba	RLC Eng., Hallowell, Maine	Amamihe Onwuachumba, Mohamad Musavi, Paul Lerley

March 31st, 9:30am - 12:00pm **Room: Evergreen C** **Session #7 - Emerging Power Systems and Real Time Dynamics** **Session Chair : Mohammad Babakmehr**			
IoT based Online Load Forecasting	Ahmed Saber	ETAP	Ahmed Yousuf Saber, Tanuj Khandelwal
Reflections about the Philosophy of Technology in the Emerging Smart Power Systems	Benedito Bonatto	Federal Univ. of Itajubá (UNIFEI)	Paulo Fernando Ribeiro, Antonio Carlos Zambroni de Souza, Benedito Donizeti Bonatto
Comparison of the Holomorphic Embedding Load Flow Method with Established Power Flow Algorithms and a New Hybrid Approach	Patrick S. Sauter	KIT/IRS	Patrick S. Sauter, Christian A. Braun, Mathias Kluwe, SÃ¶ren Hohmann
Characterization of Forward Electricity Market Price Variations and Price-Responsive Demands	Al-Motasem Aldaoudeyeh	North Dakota State University	Al-Motasem Aldaoudeyeh, Rajesh Kavasseri, Ivan Lima
Conversion and Validation of QSTS based Distribution System Model for Real-Time Dynamic Phasor Simulation	Manohar Chamana	NREL	Manohar Chamana, Kumarguru Prabakar, Bryan Palmintier, Murali Baggu

March 31st, 1:00pm - 3:00pm **Room: Evergreen A** **Session #8 - Advanced Renewable Energy Power Systems** **Session Chair : Benjamin Kroposki**			
Long-term Planning with Battery-based Energy Storage Transportation in Power System	Dan Lu	Illinois Institute of Technology	Dan Lu, Zuyi Li
Pico-Hydro Electric Power In The Nepal Himalayas	Rick Sturdivant	Azusa Pacific University	Rick Sturdivant, James (Hsi-Jen) Yeh, Mark Stambaugh, Alex Zahnd, Edwin K.P. Chong
Grid Modernization Laboratory Consortium Testing and Verification	Benjamin Kroposki	NREL	Benjamin Kroposki, Paul Skare , Robert Pratt, Thomas King, Abraham Ellis
Optimal Placement of A Heat Pump in An Integrated Power and Heat Energy System	Sergey Klyapovskiy	Technical University of Denmark	Sergey Klyapovskiy, Shi You, Henrik W. Bindner, Hanmin Cai

March 31st, 1:00pm - 3:00pm **Room: Evergreen B** **Session # 9 - Photovoltaics Power Systems** **Session Chair : Osama A. Mohammed**			
Coordinated Power Management for the Integration of Active Distribution Networks with High PV Penetration into the Medium Voltage Grid	Hassan H. Eldeeb	Florida International University	Hassan H. Eldeeb, Osama A. Mohammed
Forecasting of solar photovoltaic system power generation using wavelet decomposition and bias-compensated random forest	Po-Han Chiang	University of California, San Diego	Po-Han Chiang, Siva Prasad Varma Chiluvuri, Sujit Dey, Truong Q. Nguyen
Grey-Box Modeling for Photovoltaic Power Systems using Dynamic Neural Networks	Naji Al-Messabi	University of Glasgow	Naji Al-Messabi, Cindy Goh, Yun Li
Impact of PV Sources on the Overcurrent Relays in Medium Voltage Distribution Networks	Matin Meskin	University at Buffalo	Matin Meskin, Praveen Iyer, Alexander Domijan

March 31st, 1:00pm - 3:00pm **Room: Evergreen C** **Session #10 - Security and Critical Analysis of Power Distribution Systems** **Session Chair: Amamihe Onwuachumba**			
Enhancement of Voltage Profile in Unbalanced Distribution Systems	Matin Meskin	State University of New York at Buffalo	Tianjian Wang, Matin Meskin, Ilya Grinberg
Prior Detection of Explosives to Defeat Tragic Attacks using Knowledge Based Sensor Networks	Kishore Chidella	Wichita State University	Kishore Konda Chidella, Asaduzzaman Abu, Farshad Mashhadi
Identification of Critical Locations of Power Systems	Amamihe Onwuachumba	RLC Eng., Hallowell, Maine	Amamihe Onwuachumba, Mohamad Musavi, Paul Lerley
Throughput Comparison of Shuffle-Exchange Networks with Additional Stages due to Resource Scheduling	Farshad Mashhadi	Wichita State University	Farshad Mashhadi, Abu Asaduzzaman, Kishore Konda Chidella

March 31st, 3:15pm - 5:15pm **Room: Evergreen A** **Session #11 - Energy Storage for Distributed Generation** **Session Chair : Eduard Muljadi**			
Developing High PV Penetration Cases for Frequency Response Study of U.S. Western Interconnection	Jin Tan	NREL	Jin Tan, Yingchen Zhang, Santosh Veda, Tarek Elgindy, Yilu Liu
Flywheel Energy Storage Dynamic Modeling	Eduard Muljadi	NREL	Eduard Muljadi, Vahan Gevorgian
Robust Model Predictive Control of DC-DC Floating Interleaved Boost Converter under Uncertainty	Hossein Sartipizadeh	Colorado School of Mines	Hossein Sartipizadeh, Farnaz Harirchi
Optimal Joint Management of Charging and Battery Swapping Services for Electric Vehicles	Luhao Wang	University of Southern California	Luhao Wang, Shuang Chen, Massoud Pedram

March 31st, 3:15pm - 5:15pm **Room: Evergreen B** **Session #12 - Interconnection of Wind Energy Systems** **Session Chair: Enio Ribeiro**			
Mathematical Modeling, Stability, Bifurcation Analysis, and Simulations of a Type-3 DFIG Wind Turbine's Dynamics with Pitch Control	Sameh Eisa	New Mexico Tech	Sameh A. Eisa, William Stone, Kevin Wedeward
A Double-stage Hierarchical Hybrid PSO-ANFIS Model for Short-term Wind Power Forecasting	Abinet Eseye	North China Elect Power Univ.	Han Li, Abinet Tesfaye Eseye, Jianhua Zhang, Dehua Zheng
Time Domain Study of a Type-3 DFIG Wind Turbine's Dynamics: Q Drop Function Effect and Attraction VS Control Limits Analysis	Sameh Eisa	New Mexico Tech	Sameh Eisa, William Stone, Kevin Wedeward
Decentralized Multi-Agent System for Protection and Power Restoration Process in Microgrids	Hany Habib	Florida International University	Hany Habib, Osama Mohammed

March 31st, 3:15pm - 5:15pm **Room: Evergreen C** **Session #13 - Renewable Energy Interaction with Data, Wireless Communication and Future Trends** **Session Chair : Fernando Marafão**			
Pilot Back-up Protection based on Wireless Communication	Zhenmin Tang	Arizona State University	Zhenmin Tang, Qiushi Wang, George Karady
State Feedback Control to Damp Output LC Filter Resonance for Field Oriented Control of VSI fed Induction Motor Drives	Vikram Chowdhury	Missouri Univ. Science and Tech.	Vikram Roy Chowdhury, Subhajyoti Mukherjee, Pourya Shamsi, Mehdi Ferdowsi
Adaline and Recursive Least Square Error Based Techniques for Submodule Voltage Monitoring for the Cascaded High Frequency AC Link System	Nour Elsayad	Florida International University	Nour Elsayad, Osama A. Mohammed
Decentralized Power Agreement for Improved Frequency Response in Interconnected Power Systems	Muhammad Qureshi	Georgia Institute of Technology	Muhammad Umer Qureshi, Santiago Grijalva