



**2014 FESC Workshop  
AGENDA (DRAFT)  
May 12-13, 2014 Gainesville, FL**

**MONDAY, MAY 12**

**7:00 - 8:00 am REGISTRATION, HILTON, Gainesville FL  
POSTER SET-UP for Session I  
BREAKFAST**

**GENERAL SESSION: HILTON – ROOM A**

***MODERATOR: JENNIFER CURTIS***

**8:00 - 8:10 am WELCOME**

**David Norton, Chair, FESC Oversight Board, VP Research, University of Florida**

**8:10 - 8:20 am WELCOME**

**Patrick Sheehan  
Director, Florida Office of Energy**

**8:20 – 9:20 am SESSION I: BIOMASS AND SMART GRID PANEL SESSION**

***MODERATOR: TBD***

**Biomass: U.S. Biofuels - Technical, Economic, and Regulatory Status Update -  
Paul Bryan, Professor at UC Berkeley and former Program Manager for US-DOE  
Efficiency and Renewable Energy's Biomass Program**

**Smart Grid: Electric Energy Systems of the Future - Visions, Challenges, and  
Opportunities - Pramod P. Khargonekar, Head of Engineering Directorate,  
National Science Foundation**

**9:20 – 9:30 am BREAK**

**9:30 – 10:40 am SESSION I SHORT ORAL PRESENTATIONS (5 min each)**

**Track I : Biomass HILTON – ROOM B**

***Chair: TBD***

- *Potential for Oilseed Crops in the Southeast-David Wright, James Marois, Sheeja George, University of Florida - IFAS*
- *Pongamia - An Oilseed Tree Crop for Florida's Lost Citrus Acreage - David Harry, Claire Kinlaw, TomSchenk, Naveen Sikka, Terviva Inc.*
- *Evaluating eTuber and Energy beets as Feedstocks for Biofuels and Biogas in South*

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Florida-Brian Boman, Edward Evans Ann Wilkie, University of Florida- IFAS

- *Commercial Production of Terpene Biofuels from Existing Slash Pine Plantations-*Gary Peter, Jennifer Lauture, Alan Hodges, University of Florida- IFAS
- *Environmentally and economically sustainable production of fuels and chemicals from sweet sorghum-* Wilfred Vermerris, John Erickson, Lonnie Ingram, University of Florida- IFAS
- *Engineering Bacillus subtilis biocatalysts for production of biofuels and chemical feedstocks and biochemicals for pharmaceutical and nutraceutical applications-* James Preston, Mun Su Rhee, Lusha Wei, University of Florida- IFAS
- *Biomass Treatment with Supercritical Fluids for high throughput and yield to fuels-* Aydin Sunol, Kyle Cogswell, Aaron Driscoll, and Zachary Cerniga University of South Florida
- *Oxygen-blown Gasification for Efficient Conversion of Woody Biomass to Liquid Hydrocarbon Fuels-* Ali T-Raissi, Florida Solar Energy Center
- *Dual pretreatment Strategy for Enhanced Biomass Hydrolysis-* John Telotte, Subramanian Ramakrishnan, Florida State University
- *Harvest Power-*Christopher Balfe, Molly Bales, Harvest Power Inc.
- *Floating cultivation system for low-cost production of algae-* Dr. Ioannis Dogaris, Dr. George Philippidis, University of South Florida
- *Dealing with Heterogeneity: The Central Problem with Using Agroindustrial Waste as a Feedstock for Heterotrophic Algae-*Thomas Lyons, Eudes de Crecy, BioTork
- *Landfill Gas to Liquid Fuel -* Ryan Kent, Ali Gardezi, Dr. Babu Joseph, Dr. John Kuhn, University of South Florida
- *An experimental evaluation and thermochemical modeling of high temperature steam gasification of municipal solid waste (MSW)-*Uisung Lee, J.N. Chung, H.A. Ingley, University of Florida

### Track II: Smart Grid HILTON – ROOM C

**Chair: TBD**

- *Power Quality Impact Study For Interconnection of Heterogeneous Distributed Energy Resources-*Ali Hariri, Omar Faruque, FSU Center For Advanced Power Systems
- *Joint Operational Model for Smart grid with Community Microgrids under Carbon Emissions Control-*Felipe Feijoo, Tapas K. Das, University of South Florida
- *Recent Fuel Cell Research Activities at FSEC-*Ali T-Raissi, Florida Solar Energy Center
- *Ultra-Compact Portable Power: Direct Methanol Fuel Cell Open-Cathode System-* Fenner Colson, Matt Inman, University of Florida

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- *Microstructure effects on the capacity, power, and energy density of metal-air batteries for large grid storage applications- Petru Andrei, Vamsci Bevara, Florida State University*
- *Nanomaterials for enhancing electrochemical energy storage-Wolfgang Sigmund, Rui Qing, University of Florida*
- *The Effects of the Discharge Product on the Discharge Characteristics of Li-air Batteries-Vamsci V. Bevara, Petru Andrei, Florida State University*
- *Non-Destructive Testing and Quality Control Technologies. Ensuring High Quality, Safety and Reliability of New Generation Batteries-Volodymyr Redko, Elena Shembel, Enerize Corp.*
- *Power Quality Improvement of Electric Vehicle DC Charging Stations Utilizing UPQC and SFCL- M.H. Amini, Arif Sarwat, A.H. Moghadasi, M. Jamei, Florida International University*
- *Buildings as batteries: inexpensive ancillary service to the grid from HVAC systems- Yashen Lin, Prabir Barooah, Sean Meyn, University of Florida*
- *Hydrogen Energy Storage for On-Board Fuel Cells, Concentrated Solar Power and Secondary Batteries- Sesha Srinivasan, Tuskegee University, D. Yogi Goswami, Elias K. Stefanakos, Dervis Emre Demirocak, University of South Florida, Sarada Kuravi, Florida Institute of Technology, Ryan Integlia, Jorge Vargas, Florida Polytech University*
- *Development and characterization of novel metal chloride thermal storage media with enhanced heat transfer- Philip D. Myers, D. Yogi Goswami, Elias Stefanakos, University of South Florida*
- *Encapsulation of the Phase Change Materials and Its Application in Thermal Energy Storage System- Tanvir E Alam, Jaspreet Dhau, D. Y. Goswami , E. Stefanakos, University of South Florida*

**10:40 – 11:40 am SESSION I POSTER REVIEW AND DISCUSSIONS**

**11:40 - 12:45 BUFFET LUNCH**

**REMOVAL OF SESSION I POSTERS and SET-UP of SESSION II POSTERS**

**12:45 - 1:45 pm SESSION II: SOLAR ENERGY AND ENERGY EFFICIENCY PANEL SESSION**

**MODERATOR: TBD**

***Solar Energy: Solar Energy: What's Next? - Dr. Ryne Raffaele, Vice President for Research and Associate Provost, Rochester Institute of Technology***

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***Energy Efficiency: DOE Building Technologies Office: Energy Efficiency R&D - Patrick Phelan, Supervisor, Building Technologies Program, US-DOE, Energy Efficiency and Renewable Energy***

**1:45 - 2:00      BREAK**

**2:00 - 3:10 pm      SESSION II ORAL PRESENTATIONS (5 min each)**

**Track I : Solar Energy HILTON – ROOM B**

***Chair: TBD***

- *Advances in Micro-inverter Technologies-Issa Batarseh, Ahmadreza Amirahmadi, Lin Chen, University of Central Florida*
- *Photomechanics of Liquid Crystal Polymer Networks-William Oates, Florida State University*
- *Distributed & Mobile Solar Electricity Generation with Energy Storage Devices and Application to PrePaid (PPD) Technology for the Latin America marketplace-Albert Rodriguez, ATI Energia LLC ATI Companies Group*
- *Nanostructured Transparent Polymer for Encapsulation of PV Modules and Optical Devices. Breakthrough in Design and Properties of Solar Cells-Elena Shembel, Enerize Corporation*
- *Effective Doping of CdTe towards High Efficiency Thin Film Solar Cell- M. I. Khan, S. Collins and C. Ferekides, University of South Florida*
- *Cooling Channel Analysis to Enhance the Efficiency of Photovoltaic Panels- Obiechina Abakporo, Dr. Juan Ordonez, Dr. Alejandro Rivera, Florida A&M University*
- *Integration of Transparent Insulation Materials into Solar Collection Devices-Sam Yang, Alejandro Rivera, Juan Ordonez, FSU Center for Advanced Power Systems*
- *Air-Processed Polymer-Fullerene Bulk Heterojunction Solar Cells With Higher Than 6% Efficiency- Iordania Constantinou, John R. Reynolds, Franky So, University of Florida*
- *Development of Novel Water Splitting Materials for the Production of Renewable Hydrogen-Samantha Roberts, Helena E. Hagelin-Weaver, University of Florida*
- *Kinetic and Material Analysis for Solar Fuel Production-Michael Bobek, Nathan Rhodes, David Hahn, University of Florida*
- *Energy Glass - The Next Generation in Solar Energy Production with Enhanced Building Physical Security-Theron Colbert, TiRC Energy Engineering, International Professional LLC*
- *A Mathematical Model for Performance Prediction of a Hybrid PV/T Module for Hot and Humid Climates - Cheng-Xian Lin, Francisco Emilio Zevallos , Florida International University*

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- *Solar Water Heating as a Green House Gas Reduction and Energy Conservation Strategy-Thomas Lane, Colleen Kettles, ECS Solar and Florida Solar Energy Center/UCF*

### Track II : Energy Efficiency HILTON – ROOM C

**Chair: TBD**

- *Thermal Simulation of FSU's Off-Grid Zero Emissions Building-Juan Ordonez, Florida State University*
- *Low Cost Building Energy Efficiency Solution Based on Real-Time Occupancy Based Control-Prabir Barooah, University of Florida*
- *Moisture and Energy Consequences of a Tight Residential Envelope- Robin Vieira, Danny Parker, Philip Fairey III, John Sherwin, Chuck Withers, David Hoak, Florida Solar Energy Center/UCF*
- *An Overview of Building America Partnership for Improved Residential Construction (BA-PIRC) Activities in Hot Humid Climates-Eric Martin, Florida Solar Energy Center/UCF*
- *My Florida Home Energy Interactive Web tool- Lesly A. Jerome, Harold S. Knowles, III, Nicholas W. Taylor, University of Florida*
- *Florida Energy Efficiency Loan (FEEL): A New Residential Lifestyle Literacy and Leveraged Lending Program-Craig Miller, Hal Knowles, University of Florida - Program for Resource Efficient Communities*
- *Targeting Utility Customers To Improve Energy Savings From Conservation and Efficiency Programs - Nicholas W. Taylor, Pierce H. Jones, M. Jennison Searcy, University of Florida*
- *Exploring the Market for Multifamily Energy-Efficiency Retrofits in Florida- M. Jennison Searcy, Pierce H. Jones, Nicholas W. Taylor, University of Florida*
- *Side by Side Evaluation of Residential Hot Water Heating Systems in Florida-Carlos Colon, Florida Solar Energy Center/UCF*
- *A Program for Energy Efficient and Environmentally Sustainable Laboratories - Philip J. Wirdzek, International Institute for Sustainable Laboratories (I2SL)*
- *Permanent Magnet for Energy Efficiency Systems- Ke Han, FSU Mag Lab*
- *Energy Efficiency and NRCE: A Needed, Country, State and Industrial Policy/Program- Cristian Cardenas-Lailhacar, Universidad de Investigación de Tecnología Experimental YACHAY, Urcuquí, Ecuador*
- *Energy Efficient Transportation-John Nuszowski, University of North Florida*
- *Energy-Aware Database Disk Storage System- Yicheng Tu, Bo Zeng, Peyman Behzadnia, Wei Yuan, University of South Florida*

**3:10 – 4:10 pm SESSION II POSTER REVIEW AND DISCUSSIONS**

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**4:10 – 4:15 pm BREAK and REMOVAL of SESSION II POSTERS and SET-UP of  
ADDITIONAL POSTERS**

**4:15 – 5:15 pm ROUNDTABLE DISCUSSION – Rooms A, B, C, Dogwood and  
Hickory**

- 1- Energy Efficiency – Hickory Room
- 2- Biomass – Room A
  - Algae
  - Energy Crops
  - Biochemical Conversion
  - Thermo-chemical Conversion
  - Waste to Energy
- 3- Solar – Room B
  - Solar PV
  - Solar Thermal
- 4- Smart Grid and Storage – Room C
  - Grid
  - Energy Storage
- 5- Natural Gas – Room B
- 6- Education – Dogwood Room

**5:15 - 6:15 pm ADDITIONAL POSTER SESSION**

The list of posters is given at the end of the agenda.

**6:15 - 7:15 pm RECEPTION – Room A**

**7:15 pm REMOVAL OF ADDITIONAL POSTERS – SET-UP of SESSION III POSTERS**

**7:15 pm DINNER ON YOUR OWN**

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**TUESDAY, MAY 13**

**7:00 – 8:00 BREAKFAST**

**GENERAL SESSION: Hilton – Room A**

**8:00 – 9:00 am ROUNDTABLE REPORTS (5 min)**

**9:00 – 10:30 am SESSION III: NATURAL GAS, MARINE ENERGY, AND EDUCATION  
PANEL SESSION**

*MODERATOR: CHRIS FOUNTAS, PARTNER, ARSENAL VENTURE PARTNERS, FESC ADVISORY BOARD MEMBER*

**Natural Gas: Natural Gas: Serving Florida's Energy Needs Today and in the Future - John R. Mclelland, Director Gas Supply and Wholesale Origination, TECO Peoples Gas**

**Marine Energy: Blue Energy: The Southeast National Marine Renewable Energy Center - Camille Coley, Assistant Vice President for Research, Associate Director for the Southeast National Marine Renewable Energy Center, Florida Atlantic University**

**Education: Trends in Energy Education and Workforce Development - Dr. Dean Evasius, Vice President and Director of Science Education Programs, Oak Ridge Associated Universities**

**10:30 – 10:45 am BREAK**

**10:45– 11:25 am SESSION III ORAL PRESENTATIONS (5 min each)**

**Track I: Natural Gas and Marine Energy HILTON – ROOM B**

**Chair: TBD**

- *The Direct Use of Natural Gas - Scott Ranck, Florida Public Utilities Company*
- *Natural Gas As A Transportation Fuel - Mark Thompson, Florida Public Utilities Company*
- *So Natural Gas Motor Fuels are Cheaper than Oil: Does This Solve Our Energy Problem? - David E. Bruderly, Bruderly Engineering Associates, Inc.*

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- *Crew Member Training Standards for Natural Gas-Fueled Ships - Dennis L. Bryant, Bryant's Maritime Consulting*
- *Evaluation of Viability of Combined Heat and Power Projects in Florida - Mark Cutshaw, Florida Public Utilities Company*
- *Performance Evaluation and Field Testing of Gas Heat Pump - Rajeev Kamal, D. Yogi Goswami, University of South Florida*
- *Scaling Relations for the Model Scale Testing of Hydrokinetic Ocean Renewable Energy Systems- Karl Von Ellenrieder, Valentine W., Florida Atlantic University*
- *Water Energy for Florida and the USA-George Meyer, Engineer & Energy Invest. Consultants*

### Track II: Education HILTON – ROOM C

**Chair: JENNIFER CURTIS**

- *Renewable Energy Education Program at USF's Patel College of Global Sustainability- George Philippidis, University of South Florida*
- *“Buildings and Energy: Design and Operation Vs. Sustainability” An Energy Engineering Course for Florida-specific Building Design & Operation - Prabir Barooah, University of Florida*
- *Educating on Economic Realities of Sustainable Energy- Mark Jamison, University of Florida*
- *Introducing Specialization in “Sustainable Energy Systems” for Under-Graduate Students in Engineering at the University of West Florida.- Bhuvaneshwari Ramachandran, University of West Florida*
- *Industrial Energy Efficiency Education-Nina Stokes, M Barger, Dr. Richard Gilbert, FLATE at Hillsborough CC*
- *Sustainable Floridians Program - Strengthening Your Sense of Place-Kathleen C. Ruppert, University of Florida*
- *Two Alternative Fusion Energy Confinement Concepts: Spheromaks and Laser-Assisted Muon Catalyzed Fusion-Charles A. Weatherford, Florida A&M University*
- *Challenges in Quantifying Optimal CO<sub>2</sub> Emissions Policy-Theodore J. Kury, University of Florida- Public Utility Research Center*

**11:25 – 12:10 SESSION III POSTER REVIEW AND DISCUSSIONS**





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**GENERAL SESSION: HILTON – ROOM A**

**12:10 – 12:15 pm Patrick Sheehan, Director, Florida Office of Energy**

**12:15 – 12:20 pm Jennifer Curtis, Interim Director, FESC**

**12:20 REMOVAL OF POSTERS**

**12:20 BUFFET LUNCH**

**ADJOURN**

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## ADDITIONAL POSTER SESSION - List of Posters

### BIOMASS

1. Biodiesel Production from Waste Oils using Non Catalytic Supercritical Alcohols -*Zachary Cerniga, Dr. Aydin Sunol, Dr. George Philippidis*, University of South Florida
2. Supercritical Gasification of Wet Biomass - *Aydin K. Sunol*, University of South Florida
3. Intragenic Precision Breeding Supports Targeted Modification of Lignin Biosynthesis in Sugarcane - *Jung JH, Dermawan H, Altpeter F*, University of Florida -IFAS
4. Breeding Elephantgrass for Elevated Biomass Yield and Biosafety - *Baskaran Kannan, Marco Sinche, Carlos Corsato, Fredy Altpeter*, University of Florida-IFAS
5. Emulsion of Lignin-co-butyl Acrylate as a Biobased Polymer System - *Suguna Jairam, Zhaohui Tong, Fei Wang*, University of Florida - IFAS
6. Development and Management of Brassica carinata (Ethiopian Mustard) as a "Drop-in" Biofuel - *Ramdeo Seepaul, Sheeja George, Ed Coppola, David L. Wright, Jim J. Marois*, University of Florida - IFAS
7. Sunflower Genotype Evaluation for Bio-oil Production in Florida -*Fedenko, JR, Wilke, AC, Erickson, JE*, University of Florida - IFAS
8. Bioenergy Plant: Efficient Method For Disposing Biodegradable Materials - *Jose Sifontes, Sigarca*
9. Anaerobic Digestion of Food Waste from Alachua County Schools - *Ryan E. Graunke, Ann C. Wilkie*, University of Florida-IFAS
10. Renewable Energy Production through Organic Waste Recycling at Christianville, Haiti - *Reginald Toussaint, Ann C. Wilkie*, University of Florida-IFAS
11. Methane Productivity of Organic Waste Treatment by Two-Phase Anaerobic Digestion - *Victoria Cortés, Ann C. Wilkie*, Zamorano Agricultural University and university of Florida-IFAS
12. Co-production of Astaxanthin and Biofuels - *Alec. S. Shoelson, Ann C. Wilkie*, University of Florida-IFAS
13. Characterization of Cellulosic Ethanol Stillage and Use as an Algal Growth Medium - *Tommie B. Lovato, Ann C. Wilkie*, University of Florida-IFAS
14. Reuse of Cellulosic Bioethanol Residuals - *Jianru Shi, George O'Connor, Ann C. Wilkie*, University of Florida-IFAS
15. Evaluation of Energy Recovery Potential From Sweet Potato Stillage - *Wendy Mussoline, Ann C. Wilkie*, University of Florida-IFAS
16. Anaerobic Co-Digestion of Swine Manure and Microalgae for Biogas Production - *Meng Wang, Eunyong Lee, Qiong Zhang and Sarina Ergas*, University of South Florida
17. Bioprospecting for Oleaginous Microalgae and/or Cyanobacteria From Wastewater Holding Tanks - *Devin Alvarez, Lowell Collins, Ashvini Chauhan*, Florida A&M University

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18. Wastewater Nutrient Sequestration and Production of Lipid-biofuels from a Newly Isolated Cyanothecce sp. strain SGAC1 - *Lowell Collins, Devin Alvarez, Ashvini Chauhan*, Florida A&M University
19. A Kinetic Model for Microalgae Growth in Wastewater - *Eunyoung Lee & Qiong Zhang*, University of South Florida
20. Indigenous Algal Growth on Municipal Sludge Centrate and a Simple Irradiance-based Model for Predicting Biomass Production in the System - *Trina Halfhide, Kofi Dalrymple, Ann Wilkie, Sarina Ergas*, University of South Florida
21. Alternative Sources of Nutrients for Production of Microalgae Biomass - *Kassiana Ribeiro dos Santos, Juan C. Ordonez*, Florida State University
22. Searching for the Lipid Trigger in Biofuel Green Algae - *Elton Goncalves, Jin Kho, Bala Rathinasabapathi*, University of Florida
23. Development of a Production System for Natural Renewable Gas Using *Synechococcus* sp. BG0011, a Unique Cyanobacterium, as a Feedstock - *Bailey E. Trump, Cesar M. Moreira, Edward J. Philips, Pratap Pullammanappallil, Spyros A. Svoronos*, University of Florida -IFAS
24. Comparison of pretreatment methods to enhance methane production from microalgae *Nannochloropsis oculata* - *Pratap Pullammanappallil, Samridhhi Buxy, Robert Diltz, Tushar K. Goswami, Weihua Yang*, University of Florida

### SMART-GRID & STORAGE

25. Renewable Energy Investment and Operational Decision Model - *Alireza Ghalebani, Tapas K Das*, University of South Florida
26. Using Electrochemical Impedance Spectroscopy to Study the Reaction Rates and Diffusion Coefficients in Li Batteries - *Mohit Mehta, Petru Andrei*, Florida State University
27. Experimental Study of Heat Transfer Improvement in Phase Change Materials for Thermal Energy Storage - *Abhinav Bhardwaj, Elias Stefanakos, D.Y. Goswami*, Clean Energy Research Center, University of South Florida
28. Studying Stress Relaxation at Polymer Interfaces Using FTIR-ATR Spectroscopy - *Onyekachi Oparaji, Daniel Hallinan*, Florida State University
29. Designing Composite Polymer Electrolyte Interfaces for Stable Electrodes - *Guang Yang, Daniel Hallinan*, Florida State University
30. Optimal Dispatch of Energy Storage Systems in Real-time Digital Simulation - *Lingling Fan, Zhixin Miao*, University of South Florida

### SOLAR

31. *Laser Processing for the Formation of Ohmic Contacts to CdTe Solar Cells*-*Vasilios Palekis*, *Prasad Banel, Christos Ferekides*, University of South Florida

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32. Investigation of TiO<sub>2</sub> Annealing and TiCl<sub>4</sub> Treatment on the Performance of Dye-Sensitized Solar Cells - *Shamara Collins, Arash Takshi, Chris Ferekides*, University of South Florida
33. A New Solar Radiation Interpolation Technique- *Cristian Cardenas-Lailhacar*, Universidad de Investigación de Tecnología Experimental YACHAY, Urcuquí, Ecuador
34. Cost Effectiveness of Energy Generating Solar Plant Using Sea Water - *Sarah Rajkumari Jayasekaran, Essy Tari, Hamid Shoraka, Fazil T Najafi*, University of Florida

### **ENERGY EFFICIENCY**

35. Home Health & Energy Metabolism: Diagnosing Disease in Our Dwellings - *Hal Knowles, Mark Hostetler, Pierce Jones, and others*, University of Florida - Program for Resource Efficient Communities
36. Analysis and Optimization of Combined Flash Binary Cycle for Geothermal Power Generation - *Mehdi Zeyghami, Yagi D Goswami*, University of South Florida
37. Cryogenic Thermal Modeling of Helium Gas-Cooled Superconducting Cable System Components - *Nick Suttell*, Center for Advanced Power Systems
38. Flat Plate Fins Shape Optimization - *Julian Osorio*, Florida State University
39. Modeling and Simulation of a Vapor Compression Refrigeration System - *T. K. Nunes, J. C. Ordonez, and J. V. C. Vargas*, Florida State University - Center for Advance Power Systems

### **EDUCATION**

40. The Development of an Interactive Software as a Secondary Learning Tool for Undergraduate Fuel Cell Courses - *Amjad Aman, Yunjun Xu, Nina Orlovskaya, Haiyan Bai*, University of Central Florida

### **POLICY**

41. Key Factors Influencing Energy Intensity in Developed and Emerging Countries - *Priscila Delfino*, University of Florida -Public Utility Research Center

### **WIND**

42. A New Wind Power Forecasting Technique - *Cristián Cárdenas-Lailhacar*, Universidad de Investigación de Tecnología Experimental YACHAY, Urcuquí, Ecuador

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**OTHER**

43. Comparison of Emerging Ground Propulsion Systems for Electrified Aircraft Taxi Operations - *Rui Guo, Yu Zhang, Qing Wang*, University of South Florida
44. Organic Rankine Cycle (ORC) For Decentralized Applications - *Arun Kumar Narasimhan, Rajeev Kamal, D. Yogi Goswami*, University of South Florida
45. Stochastic Economic Dispatch via Point Estimation Method and Particle Swarm Optimization- *Luna Gloria, Thais Araújo, Wadaed Uturbey*, Florida Atlantic University.