Registration and Check In: 8:00am – 9:00am

Opening and Keynote: 9:00am – 10:15am
- Welcome and Introduction: Jian Sun, Director

Parallel Oral Sessions – Part 1 (10:30am – 12:00am)

**A1: Advanced Component Technologies for Electrified Transportation**
Room: Sage I
Session Chair: John Glaser, Efficient Power Conversion
a2. *Smart Power GaN Devices and ICs*, T. Paul Chow, RPI
a3. *SiC Devices and Modules for Aviation Applications*, Ljubisa Stevanovic, GE Global Research Center

**B1: New Materials and Designs for Solar and Wind Energy**
Room: Sage II
Session Chair: Clayton Besch, NYS Innovation VC Fund
b2. *III-V Semiconductor-Based High Efficiency PV Cell Designs*, Partha Dutta, RPI
b3. *New Materials and Designs for Advanced Solar Cells*, Oleg Sulima, Independent PV Consultant

**C1: Renewables, Offshore Wind and Smart Grid**
Room: Ferris Ballroom
Session Chair: Einar Larsen, GE Energy Consulting
C1. *Advanced Grid Innovation Laboratory for Energy*, George Stefopoulos, NYPA
c2. *Enabling Renewable Control Systems in Power Grids with High Renewable Penetration*, Joe Chow, RPI

c3. *Stability and Control of High-Voltage DC Transmission Systems for Offshore Wind*, Jian Sun, RPI

Luncheon (12:00pm – 1:00pm) – 1st Floor, Ferris Ballroom

Parallel Oral Sessions – Part 2 (1:00pm – 3:00pm)

**A2: Advanced Component Technologies for Electrified Transportation**
Room: Sage I
Session Chair: John Glaser, Efficient Power Conversion

a4. *Next Generation Energy Storage Materials: From Electric Mobility to Smart Grid*, Jagjit Nanda, Oak Ridge National Laboratory

a5. *High Energy Aqueous Li-ion Batteries*, Kang Xu, US Army Research Laboratory


a7. *Ion Conducting Polymer Electrolyte Membranes for Energy Conversion Technology*, Chulsung Bae, RPI

**B2: New Materials and Designs for Solar and Wind Energy**
Room: Sage II
Session Chair: Clayton Besch, NYS Innovation VC Fund

b4. *Advanced Gen-3 Concentration Solar Power Technologies and Analysis*, Emily Liu, RPI


b7. *Active Blade Tip for Wind Turbine Load Reduction*, Farhan Gandhi, RPI

**C2: Renewables, Offshore Wind and Smart Grid**
Room: Ferris Ballroom
Session Chair: Einar Larsen, GE Energy Consulting


c5. *Power System Data Quality and Privacy Enhancement*, Meng Wang, RPI

C6. *New Synchronphasor-Based Control Schemes for Autonomous Microgrid or Coordinated Transmission & Distribution Operation of DER*, Luigi Vanfretti, RPI

C7. *Improving Probabilistic Forecasting of Wind and Solar Generation and Electrical Load*, Daniel Kirk-Davidoff, UL Renewables
Poster, Industry Exhibition (3:00pm – 6:00pm) and Reception

Hors d’oeuvres, beer and wine will be served during the reception (4:00pm – 6:00pm).

**Student Poster Awards:** Four posters will be selected for the Best Student Poster Awards. Each award will consist of a certificate and a cash prize of $250. To qualify for this award, a poster must be prepared and presented by a student who is identified as the lead author. Selection of the awards will be by vote of the industry attendees. Voting will remain open until 5:00pm and winners will be announced before the conference closes.

**P1: Energy Storage and Fuel Cells**


p2. *Synthesis of Elastic Anionic Exchange Block Copolymers by Thiol-ene Click Reaction of Poly(styrene-b-butadiene-b-styrene),* Stefan Turan, Sungmin Park, Chang Ryu, Chulsung Bae


p7. *Preparation of Polystyrene-b-poly(ethylene-co-butylene)-b-polystyrene based Anion Exchange Membranes by Friedel-Crafts Bromoalkylation and Crosslinking,* Jong Yeob Jeon, Sungmin Park, Ding Tian, Chulsung Bae

p8. *Poly(1,1-diphenylethylene-alt-butadiene) based Ionic Polymers,* Musashi Briem, Sungmin Park, Chulsung Bae, Sangwoo Lee

**P2: Photovoltaics, CSP and Semiconductor Power Devices**


p10. *Design and Fabrication of Teepee Photonic Crystal for High-Efficiency Solar Cells,* Alex Kaiser, Ping Kuang, Shawn-Yu Lin

p11. *Selective Solar Absorber Based on Nickel-Pigmented Anodic Aluminum Oxide,* Xuanjie Wang, Mei-Li Hsieh, Shawn-Yu Lin, Shankar Narayanan


p14. *Development of In-Situ Corrosion Kinetics and Salt Property Measurements*, Kemal Ramic, Li Liu, Robert Hull, Jie Hou, Jinhua Feng, Prachi Pragnya, Venkata Siva Varun Sarbada


p18. *Integrable Quasi-vertical GaN UMOSFETs for Power and Optoelectronic ICs*, Zhibo Guo, Collin Hitchcock, Piao Guanxi, Yoshiki Yano, Shuuichi Koseki, Toshiya Tabuchi, Koh Matsumoto, Mayank Bulsara, T. Paul Chow


P3: Chemical and Biochemical Energy Conversion


26. Origin of Stress in SiO2 Optical Fibers, Bronson Hausmann, Paul Miller, Emily M. Aaldenberg, Terry Blanchet, Minoru Tomozawa

27. Morphology-Controlled Growth Of 2D Perovskite Nanowires for Polarized Light Detection, Debjit Ghoshal, Tianmeng Wang, Nikhil Koratkar, Su-Fei Shi

P4: Wind Turbine Technology and Offshore Wind

28. Load Alleviation on Wind Turbines using Camber Morphing Blade Tip, Etana Ferede, Farhan Gandhi

29. Smart Blades to Enhance Wind Turbine Performance, Thomas T. Rice, Alison Goldsmith, Michael Amitay

30. Improving Energy Efficiency in Air Separation Units and Steel-Manufacturing - A Smart-Manufacturing Solution, Shu Yang, Sambit Ghosh, Andreas Rebmann, B. Wayne Bequette

31. Wind Blade Recycling, Cecilia Briggi, Stephen Chan, Raymond Chien, Buhan Jiang, Joshua Ling, Cody Madigan, Jonathan Mazur, Yifan Yao

32. Small-Signal Characterization of Type-III Turbines for Wind Farm System Stability Studies, Ignacio Vieto, Jian Sun

33. Wind Farm System Stability and Resonance Analysis by Impedance Methods, Ignacio Vieto, Jian Sun

34. Offshore Wind with HVDC Transmission System Studies by Real-Time Simulation, Pengxiang Huang, Ignacio Vieto, Hamed Nademi, Jian Sun

P5: Power Systems and Smart Grids

35. Estimation of Generator Control System Performance Using Synchrophasor Data, Christoph Lackner, Joe H. Chow, F. Wilches-Bernal


37. A Reconfigurable Hardware Prototype for Pre-Compliance Testing of Phasor Measurement Units, Prottay M. Adhikari, Luigi Vanfretti, Hossein Hooshyar

38. Speeding Up the Dissipating Energy Flow Based Oscillation Source Detection, Stavros Konstantinopoulos, Christoph Lackner, Joe H. Chow

39. Overcurrent Relay Modeling Using Modelica with Cross-Verification Against a Validated Model, Manuel Navarro Catalan, Luigi Vanfretti

40. Modeling and Simulation of a Micro-grid with Photovoltaic Modules Connected to the Grid, Marcelo de Castro Fernandes, Luigi Vanfretti

41. Hybrid Islanding-Detection Method for PV Inverter, Mehmet Ali Ozcelik, Hamed Nademi, Jian Sun

42. Fault Transience and Stability Analysis of MMC-Based MVDC Systems, Yafang Tang, Hamed Nademi, Jian Sun

p44. **Evaluation of Utility Breaker Reclosing Impacts on Distribution System Voltages**, Hamed Nademi, Jian Sun, Michael Ruppert

p45. **Hardware-in-the-Loop Study of Islanding, 3V0 and 3I0 with DER Interconnection**, Huan Guo, Jian Sun, Ricardo Austria, Ketut Dartawan


p47. **Identifying Overlapping Successive Events Using a Shallow Convolutional Neural Network**, Wenting Li, Meng Wang

p48. **Simultaneous Achievement of Power Usage Data Privacy and Information Accuracy**, Ren Wang, Meng Wang, Jinjun Xiong

**P6: Energy Efficiency**


p50. **Clean Energy and Smart Manufacturing Innovation Institute - A New Paradigm in Manufacturing**, Sambit Ghosh, Andreas Rebmann, Shu Yang, B. Wayne Bequette


p52. **An Automated Place and Route Methodology for Asynchronous SFQ Circuit Design**, Sagnik Nath, Kurt English, Alexander Derrickson, Andrew Haslam, John F. McDonald


**Industry Exhibition**: The following companies and organizations will exhibit their technologies and collaboration with CFES at the conference.

- Advanced Polymer Sales, LLC
- Apex Solar Power
- Applied Power Systems, Inc.
- Armstrong Material Solutions, LLC
- BioChemInsights, Inc.
- Blasch Precision Ceramics, Inc.
- Center for Economic Growth (CEG)
- Chroma Systems Solutions, Inc.
- Combined Energies, LLC
- Custom Electronics, Inc.
- EcoCeramics, Inc.
- EnerMat Technologies Inc.
- Green Power Tower Energy, LLC
- MicrOrganic Technologies, Inc.
- Opal-RT Technologies, Inc.
- ORION Polymer, Inc.
- Peaker Services, Inc.
- Pterra, LLC
- ReWire Energy Group, LLC
- Self Array, Inc.
- StorEn Technologies, Inc.