



11th Annual SECA Workshop Pittsburgh, PA Sheraton Station Square



AGENDA

TUESDAY, JULY 27, 2010 - GRAND STATION I & II

7:30 - 9:00 a.m. **Registration - GRAND STATION FOYER**
Continental Breakfast - GRAND STATION III

OPENING SESSION - MODERATOR: HEATHER QUEDENFELD

9:00 - 9:15 a.m. **Welcome**
Heather Quedenfeld, Division Director, Power Systems
U.S. Department of Energy
National Energy Technology Laboratory

9:15 - 9:45 a.m. **Clean Coal Energy Research**
Samuel S. Tam, Director, Division of Clean Coal Energy Research
Office of Fossil Energy
U.S. Department of Energy

9:45 - 10:15 a.m. **SECA Program Accomplishments and Future Challenges**
Shailesh Vora, Technology Manager, Fuel Cells
U.S. Department of Energy
National Energy Technology Laboratory

10:15 - 10:45 a.m. **BREAK - GRAND STATION III**

10:45 - 11:15 a.m. **DOE Carbon Capture and Sequestration Program**
Sean Plasynski, Technology Manager, Sequestration
U.S. Department of Energy
National Energy Technology Laboratory

11:15 - 11:45 a.m. **Integrated Gasification Fuel Cell (IGFC) Systems**
Dale Keairns, Executive Advisor, Booz Allen Hamilton, Inc.

11:45 - 12:15 p.m. **Smart Grid Overview**
Ryan Egidi, Integrated Electric Power Systems Division
U.S. Department of Energy
National Energy Technology Laboratory

12:15 - 1:30 p.m. **LUNCH (on your own)**

INDUSTRY TEAMS - MODERATOR: TRAVIS SHULTZ

1:30 - 2:15 p.m. **Coal-Based SECA Program-FuelCell Energy**
Hossein Ghezel-Ayagh, FuelCell Energy, Inc.
Brian Borghum, Versa Power Systems

2:15 - 3:00 p.m. **SOFC Program Review**
David Brengel, UTC Power

TUESDAY, JULY 27, 2010 - GRAND STATION I & II

- 3:00 - 3:30 p.m. **BREAK - GRAND STATION III**
- 3:30 - 4:15 p.m. **Update on the Rolls Royce Coal-Based SECA Program**
Richard Goettler and Ted Ohrn, Rolls Royce Fuel Cell Systems
- 4:15 - 5:00 p.m. **The Siemens Energy Coal Based SECA Program**
Joseph Pierre, Siemens Energy Inc.
- 5:00 p.m. **ADJOURN**
- 5:30 - 7:30 p.m. **POSTER SESSION/RECEPTION - GRAND STATION III**

WEDNESDAY, JULY 28, 2010 - GRAND STATION I & II

- 7:00 - 8:00 a.m. **Registration- GRAND STATION FOYER**
Continental Breakfast - GRAND STATION III

SECA CORE TECHNOLOGY – GRAND STATION I & II

CATHODE R&D PANEL – MODERATOR: BRIGGS WHITE

- 8:00 - 8:10 a.m. **Cathode R&D Panel Introduction**
Briggs White
U.S. Department of Energy
National Energy Technology Laboratory
- 8:10 - 8:30 a.m. **Theory, Investigation, and Stability of Cathode Electrocatalytic Activity**
Meilin Liu, Georgia Tech Research Corporation
- 8:30 - 8:50 a.m. **SOFC Cathode Surface Chemistry and Optimization Studies**
Paul Salvador, Carnegie Mellon University
- 8:50 - 9:10 a.m. **Synchrotron X-Ray Studies of SOFC Cathodes**
Paul Fuoss, Argonne National Laboratory
- 9:10 - 9:30 a.m. **Correlations of Electronic and Chemical States on Dense Thin-Film Cathodes**
Bilge Yildiz, Massachusetts Institute of Technology
- 9:30 - 9:50 a.m. **Solid Oxide Fuel Cell Cathodes: Unraveling the Relationship Between Structure, Surface Chemistry and Oxygen Reduction**
Srikanth Gopalan, Boston University
- 9:50 - 10:20 a.m. **BREAK - GRAND STATION III**
- 10:20 - 10:40 a.m. **Soft X-Ray Studies of SOFC Materials**
Yves Idzerda, Montana State University
- 10:40 - 11:00 a.m. **Electronic Structure of Cathode Materials**
Walter Harrison, Stanford University
- 11:00 - 11:20 a.m. **Development of LSCF Cathodes**
John Hardy, Pacific Northwest National Laboratory

WEDNESDAY, JULY 28, 2010 - GRAND STATION I & II

11:20 - 12:15 p.m. **Panel Discussion (including Q&A)**

12:15 - 1:30 p.m. **LUNCH (on your own)**

CATHODE-INTERCONNECT CONTACT – MODERATOR: BRIGGS WHITE

1:30 - 2:00 p.m. **Development of Cathode Contact Materials**
Jeffry Stevenson, Pacific Northwest National Laboratory

2:00 - 2:30 p.m. **Cathode Contact Materials**
Michael Tucker, Lawrence Berkeley National Laboratory

SOFC INTERCONNECTS – MODERATOR: ROBIN AMES

2:30 - 3:00 p.m. **Development of SOFC Interconnects and Coatings**
Jeffry Stevenson, Pacific Northwest National Laboratory

3:00 - 3:30 p.m. **Evaluation of a Functional Interconnect System for Solid Oxide Fuel Cells**
Matt Bender, ATI Allegheny Ludlum

3:30 - 4:00 p.m. **BREAK - GRAND STATION III**

4:00 - 4:30 p.m. **Interconnect-Coating Interactions: Transition Metal Spinel Oxides**
Jeffrey Fergus, Auburn University

4:30 - 5:00 p.m. **Manufacturing Analysis of SOFC Interconnect Coating Processes**
Matthew Seabaugh, NexTech Materials Ltd.

5:00 p.m. **ADJOURN**

THURSDAY, JULY 29, 2010 - GRAND STATION I & II

7:00 - 8:00 a.m. **Registration- GRAND STATION FOYER**
Continental Breakfast - GRAND STATION III

SECA CORE TECHNOLOGY – GRAND STATION I & II

SEALS – MODERATOR: RIN BURKE

8:00 - 8:30 a.m. **Viscous Glass SOFC Sealants**
Scott Misture, Alfred University

8:30 - 9:00 a.m. **Compliant Glass Seal Development at PNNL**
Matt Chou, Pacific Northwest National Laboratory

9:00 - 9:30 a.m. **Reliability of Materials and Components for Solid Oxide Fuel Cells**
Amit Shyam, Oak Ridge National Laboratory

MODELING – MODERATOR: RIN BURKE

9:30 - 10:00 a.m. **Modeling and Simulation of SOFC**
Moe Khaleel, Pacific Northwest National Laboratory

THURSDAY, JULY 29, 2010 - GRAND STATION I & II

10:00 - 10:30 a.m. **BREAK - GRAND STATION III**

CONTAMINANTS – MODERATOR: JOSEPH STOFFA

- 10:30 - 11:00 a.m. **Exposure Limits of Higher Hydrocarbons for Anode Supported SOFC**
Kirk Gerdes
U.S. Department of Energy
National Energy Technology Laboratory
- 11:00 - 11:20 a.m. **SOFC Tolerance Limits for Phosphorous and Arsenic**
Jeffry Stevenson, Pacific Northwest National Laboratory
- 11:20 - 11:40 a.m. **Syngas Clean-up System to Remove Harmful Contaminants for SOFCs**
Gökhan Alptekin, TDA Research Inc.
- 11:40 - 12:00 p.m. **Perovskite Adsorbents for Warm-Gas Arsenic and Phosphorus Removal**
Erick J. Schutte, Eltron Research & Development, Inc.

12:00 - 1:30 p.m. **LUNCH (on your own)**

FUEL PROCESSING – MODERATOR: JOSEPH STOFFA

- 1:30 - 2:00 p.m. **Structured Oxide-Based Reforming Catalyst Development**
Dushyant Shekhawat
U.S. Department of Energy
National Energy Technology Laboratory
- 2:00 - 2:30 p.m. **Water Neutral Fuel Processing and Sulfur Cleanup**
Subir Roychoudhury, Precision Combustion, Inc.

BALANCE OF PLANT – MODERATOR: JOSEPH STOFFA

- 2:30 - 3:00 p.m. **Foil-Bearing Supported High Speed Blowers**
Giri Agrawal, R&D Dynamics Corp.

3:00 - 3:30 p.m. **BREAK - GRAND STATION III**

SECA INNOVATIVE CONCEPTS – MODERATOR: JOSEPH STOFFA

- 3:30 - 4:00 p.m. **Validation of Novel Planar Cell Design for Power Systems**
Michael Day, NexTech Materials, Ltd.
- 4:00 - 4:30 p.m. **Performance Degradation of LSCF Cathodes**
Matt Alinger, GE Global Research
- 4:30 - 5:00 p.m. **Novel Fuel Cells for Coal Based Systems**
Thomas Tao, CellTech Power
- 5:00 p.m. **Closing Comments/ADJOURN**
Shailesh Vora, Technology Manager, Fuel Cells
U.S. Department of Energy
National Energy Technology Laboratory