



HYDROGEN PRODUCTION, STORAGE, AND DELIVERY WEDNESDAY, NOVEMBER 6 - ROOM 103-C, 4:00 PM - 5:30 PM

- **Hydrogen Production from Liquid Fuels Using Solid Acid Membranes** - *Calum Chisholm, SAFCell, Inc.*
 - The high impurity tolerances of SAFC stacks enable them to be used as electrochemical hydrogen separation (EHS) systems with superior properties to those currently in existence. Initial testing has been done in EHS mode to show that simple liquid fuels like methanol can be converted into pure hydrogen in one, simple and cost-effective step. Moreover, these methanol-to-hydrogen stacks show good stability. EHS testing on ammonia shows that solid acid EHS cells are also able to convert ammonia directly into pure hydrogen.
- **Better Hydrogen Delivery through Alane-based Storage** - *Dr. Tibor Fabian, Ardica Technologies*
 - This presentation will discuss recent achievements in Alane-based fuel cell systems and the potential for Alane as an enabler for quicker, more widespread hydrogen adoption.
- **Enhanced Value of Renewable Energy via High Temperature Electrolysis** - *Jamie Holladay, Pacific Northwest National Laboratory*
 - This paper provides an overview of the development of Solid oxide electrolysis cells (SOEC) materials, cells and stacks at the Pacific Northwest National Laboratory (PNNL). Long-term electrochemical performance and degradation processes in the SOEC electrodes were investigated. This presentation will also provide an insight into SOEC stack manufacturing at PNNL and developing new approaches to mitigate factors limiting state-of-art SOEC commercialization.
- **Best Practices Benchmarking Framework Development for Low and High Temperature Electrolysis** - *Jamie Holladay, Pacific Northwest National Laboratory*
 - This presentation provides the status of the current materials standards, advanced characterization techniques, best practices and testing protocols development for both low and high temperature electrolysis technologies.
- **15 Years FLOX Steam Reformers – Hydrogen for PEM Fuel Cells and Fueling Stations** - *Nicole Schweizer, WS Reformer GmbH*
 - In this presentation, we introduce the production of hydrogen by catalytic steam reforming of natural gas, biogas and alcohols. Based on 15 years of experience and a variety of projects, WS Reformer offers a broad product portfolio of reformers for PEM-fuel cells and fueling stations in the range of 0,1 Kg/h up to 40 Kg/h. In this context, several technological pathways to produce hydrogen based on our reformer process are presented. Examples of SOFC, LT-PEM, HT-PEM fuel cell systems and on-site hydrogen generation illustrate our broad product portfolio.