FUEL CELL SEMINAR & ENERGY EXPOSITION

OVERCOMING TRANSPORTATION CHALLENGES
WEDNESDAY, NOVEMBER 6 - ROOM 102-A/B, 4:00 PM - 5:30 PM

- **Challenges in the Development of Fuel Cell Systems for Passenger Cars and Commercial Vehicles -** *Alexander Schenk, AVL List GmbH*

  - AVL is strongly engaged in optimizing fuel cell powertrains and will present recent innovative fuel cell development and product solutions including fuel cell stack and system development, advanced operating strategies, control software and hardware, high voltage boost converters with integrated real-time on-board diagnostics as well as all necessary simulation and testing environments.

- **Cost and Durability Tradeoff Analysis of Hybrid Fuel Cell Electric Vehicles -** *Cassidy Houchins, Strategic Analysis, Inc.*

  - In this presentation, we will present recent analysis of several hybridization schemes from fuel cell dominant to fuel cell range extender. Cost, fuel economy, weight, and durability tradeoffs as functions of battery, fuel cell power plant, and onboard hydrogen storage size will be compared to identify potential strategies to address the DOE technical barriers and increase fuel cell adoption.

- **Commercial Fuel Cell Electric Bus Operation and Material Selection for Durability -** *Peter Bach, Ballard Power Systems*

  - Today fuel cell technology offers an attractive zero emission powertrain alternative for transit buses. Deployment of fuel cell electric buses is gaining momentum worldwide with over 1000 new buses on road by 2020. With a decade of experience and millions of kilometers in service, zero emission fuel cell electrical buses have proven their reliability and competitive operating costs while vehicle cost has drastically been reduced. Ballard's extensive design and operational experience provide guidance into material optimization for durability, as exemplified by more than 30,000 hours of demonstrated on-road service.

- **Integrated Cathode Air Flow Management for Fuel Cell Electric Vehicles -** *Michael Harenbrock, MANN+HUMMEL GmbH*

  - Highly efficient Cathode Air Filters are required to achieve the Fuel Cell System´s expected lifetime, but additional components like water separators, compressors, air ducts, coolers, humidifiers, sensors etc. are needed to supply the air to the Cathode at the right cleanliness, pressure, and temperature. The presentation will be focused on Cathode Air flow management on the stack inlet and outlet side. The approach to system design is holistic, meaning that not individual components are optimized independently, but based on the complete system requirements.

- **Hydrogen Fuel Cell Passenger Trains: OCS-Free, Zero-Emissions, Range and** Performance Like Diesel - *James Varney, Alstom Group*

    - Focusing on the iLint project in Lower Saxony, Germany, this presentation will provide an overview of the process taken to develop, test and certify a Hydrogen Fuel Cell Passenger Train, and highlights the turnkey iLint solution that includes infrastructure for train refueling and hydrogen supply/production, plus maintenance. Learn how the iLint provides a zero-emissions alternative to electrification and diesel vehicles while maintaining excellent range and performance.