

# Hydrogen Expo 2008 – Exhibitor Forum Schedule



as of March 20, 2008

	Monday, March 31	Tuesday, April 1
11:30-12:00	<b>Hydrogen and Fuel Cell Development at Fraunhofer ISE</b> – Dr. Christopher Hebling, Head of Energy Technology Dept., Fraunhofer Institute for Solar Energy Systems (ISE)	<b>Update on the California Hydrogen Highway Network (CaH2Net)</b> – Analisa Bevan/Gerhard Achtelik, California Air Resources Board
12:00-12:30	<b>New Strategies for Funding Renewable H2 Generation</b> – Keith Frame, Associate Director, New Technologies, Connecticut Clean Energy Fund	<b>An Introduction to the California Stationary Fuel Cell Collaborative</b> – Kathy Haq, Chair, Outreach Committee, California Stationary Fuel Cell Collaborative
12:30-01:00		<b>An Introduction to H2 and You: What does it mean to You?</b> – Patrick Serfass/Bob Hayden, National Hydrogen Association
01:00-01:30	<b>Apply the Codes and Standards Systematically</b> – Paul Buehler, Customer Operations Manager, Hydrogen Codes and Logistics, Plug Power	<b>Pdc Machines: Leading the Market in the Packaging of Hydrogen Infrastructure Equipment and Technologies</b> – Kareem Afzal, Project Engineer, Pdc Machines
01:30-02:00	<b>Fuel Cell Grade Hydrogen from Existing Fuels</b> – Albert B. Stubbmann, Vice President Sales and Marketing, Power + Energy, Inc.	<b>Latest Advances in High Pressure PEM Electrolyzer Capability</b> – Mark Schiller, Vice President Business Development, Distributed Energy Systems
02:00-02:30	<b>Biohydrogen and Electricity Production from Waste Water</b> – William A. Hartman, C.O.O., NanoLogix, Inc.	<b>The PBMR: A safe and carbon-free energy source for making hydrogen</b> – Charles O. Bolthrunis, Shaw Stone & Webster Process
02:30-03:00	<b>Commercializing Hydrogen Specific Sensors for Industrial Applications</b> – Prabhu Soundarajan, Senior Research Scientist, H2scan Corporation	<b>High Temperature Electrolysis using Nuclear Heat and Electricity</b> – Dr. Steve Herring, Technical Director, THE, Nuclear Hydrogen Initiative
03:00-03:30	<b>An overview of Australian Hydrogen and Fuel Cell Projects</b> – Luigi Bonado, Vice Chairman, Hydrogen Division, Australian Institute of Energy	
03:30-04:00	<b>An Introduction to the National Hydrogen Association</b> – Jeff Serfass, President, NHA	

# Presentation details

March 31

**11:30-12:00 Hydrogen and Fuel Cell Development at Fraunhofer ISE**  
Dr. Christopher Hebling, Head of Energy Technology Dept., Fraunhofer Institute for Solar Energy Systems (ISE)

**12:00-12:30 New Strategies for Funding Renewable H2 Generation**  
Keith Frame, Associate Director, New Technologies, Connecticut Clean Energy Fund  
The Hydrogen energy economy is projected to be decades away, however, industrial hydrogen production is very important to the economy. Renewable means of hydrogen production continues to be more expensive steam reforming. CCEF has identified several Connecticut companies that are attempting to bridge the gap by synergizing hydrogen production with point-of-use generation, beneficial coproduction of high quality oxygen and high-pressure hydrogen generation that obviates the need and cost for mechanical compression. Each of these methods can lower the delivered cost of H2 to current customers of specialty H2 until the market develops for hydrogen as a cost-effective energy storage medium.

**01:00-01:30 Apply the Codes and Standards Systematically**  
Paul Buehler, Customer Operations Manager, Hydrogen Codes and Logistics, Plug Power  
This presentation discusses the systematic use of the ICC family of codes: how the building code refers one to the fuel gas, mechanical and fire codes. By following this methodology permits for fuel cells and stored hydrogen can be quickly and easily obtained. Furthermore, the engineering dovetails with the applicable codes so that the AHJ will be confident that the design is both safe and meets the requirements of the model codes.

**01:30-02:00 Fuel Cell Grade Hydrogen from Existing Fuels**  
Albert B. Stubbmann, Vice President Sales and Marketing, Power + Energy, Inc  
Power+Energy is developing and demonstrating a range of hydrogen processing technologies for converting liquid fuels to fuel cell hydrogen on demand. Pd Alloy hydrogen separators are currently in use for a range of fuels. Membrane reactors and integrated fuel processors have been demonstrated and are being commercialized.

**02:00-02:30 Biohydrogen and Electricity Production from Waste Water**  
William A. Hartman, C.O.O., NanoLogix, Inc.  
NanoLogix has unique Hydrogen bioreactor prototype at Welch's Foods, extracting hydrogen from sugar wastewater stream with plans for 2008 commercial installation. - 2008 modified bioreactor prototype installation planned at wastewater treatment facility utilizing photobacteria to extract hydrogen from activated sludge. - Successful conversion of IC generators to economically run on hydrogen.

**02:30-03:00 Commercializing Hydrogen Specific Sensors for Industrial Applications**  
Prabhu Soundarajan, Senior Research Scientist, H2scan Corporation  
H2scan has developed and tested a process harden hydrogen specific solid state sensor that can be installed at multiple points in a process plant and directly linked to the DCS. The solid state technology was developed at Sandia National Labs and has now been commercialized by H2scan Corporation. The sensor employs palladium-nickel alloy as the hydrogen specific sensing element on a patented flex circuit. The sensor element is manufactured with semiconductor techniques, suitable for a high throughput and consistent quality. The patented "chip on a flex" sensor has a broad range of temperature control and is uniquely coated to enable continuous operation in harsh process gas streams.

**03:00-03.30 An overview of Australian Hydrogen and Fuel Cell Projects**  
Luigi Bonado, Vice Chairman, Hydrogen Division, Australian Institute of Energy/  
Principal and Senior Consultant, Luigi Bonadio & Associates  
An overview of Australian Hydrogen and Fuel Cell projects and other initiatives will be presented including the Hydrogen Technology Roadmap for Australia, the National Hydrogen Materials Alliance and the CUTE

Fuel Cell Bus Trial (Perth). The 17th World Hydrogen Energy Conference and the inaugural International Hydrogen and Fuel Cells Education Forum will be held in Brisbane, Australia (June 15-19, 2008 Web: [www.whec2008.com](http://www.whec2008.com)).

**03:30-04:00 An Introduction to the National Hydrogen Association**

Jeff Serfass, President, NHA

The National Hydrogen Association welcomes you to come find out about the association from staff as well as a panel of current members. Our mission, activities, member benefits and more will be discussed during this session, and will provide attendees with a chance to interact directly with NHA members to find out how the NHA is helping their business - come find out what you are missing!

## April 1

**11:30-12:00 Update on the California Hydrogen Highway Network (CaH2Net)**

Analisa Bevan/Gerhard Ahtelik, California Air Resources Board

The Air Resources Board's (ARB) role in the CaH2Net is to accelerate and enhance hydrogen vehicle deployments and fueling infrastructure by helping to remove barriers associated with this new technology. The ARB is doing this by developing permitting templates, by working with the California Fuel Cell Partnership on station access and liability, by fostering communication between hydrogen station operators with the CaH2Net membership process, by working with the Office of the State Fire Marshal and by funding the development of emergency responder training. The ARB would like to present the latest developments and challenges with the CaH2Net as well as how the ZEV regulation plays a role with future fuel cell vehicle placements.

**12:00-12:30 An Introduction to the California Stationary Fuel Cell Collaborative**

Kathy Haq, Chair, Outreach Committee, California Stationary Fuel Cell Collaborative and Director, Outreach and Communications, National Fuel Cell Research Center

The California Stationary Fuel Cell Collaborative is a public-private partnership working to advance the commercialization of stationary fuel cells for distributed generation throughout the state of California. Learn about the Collaborative and how it is working with other organizations throughout the state to advance the hydrogen economy.

**12:30-01:00 An Introduction to H2 and You: What does it mean to You?**

Patrick Serfass/Bob Hayden, National Hydrogen Association

**01:00-01:30 Pdc Machines: Leading the Market in the Packaging of Hydrogen Infrastructure Equipment and Technologies**

Kareem Afzal, Pdc Machines

Come see the examples of how PDC leads the way in innovation and industry support towards the commercialization of the hydrogen economy.

**01:30-02:00 Latest Advances in High Pressure PEM Electrolyzer Capability**

Mark Schiller, Vice President Business Development, Distributed Energy Systems

Distributed high pressure hydrogen generation from PEM electrolysis can facilitate overall increases in energy storage system efficiency, energy density, and reliability. For larger electrolyzers operating at 30 bar, compressor energy requirements and drying losses can be reduced. For smaller electrolyzers, with 165 bar generation, mechanical compression can be omitted altogether. We will discuss the latest developments in high pressure PEM electrolysis technology.

**02:00-02:30 The PBMR: A safe and carbon-free energy source for making hydrogen**

Charles O. Bolthrunis, Shaw Stone & Webster Process

This presentation will describe the inherent safety and other advantages of the Pebble Bed Modular Reactor (a nuclear reactor) and why it is an appropriate energy source for hydrogen production combined with both advanced, carbon-free as well as more conventional, near-term bulk production methods.

**02:30-03:00 High Temperature Electrolysis using Nuclear Heat and Electricity**

Dr. Steve Herring, Technical Director, THE, Nuclear Hydrogen Initiative

A team led by the Idaho National Laboratory have been developing the use of high temperature solid-oxide cells for the efficient electrolytic production of hydrogen using the heat and electricity of a nuclear reactor. This team, which includes Ceramatec, Inc. of Salt Lake City, Argonne National Laboratory, UNLV and MIT, has been conducting experiments at progressively larger sizes and longer durations over the last five years. The initial tests of the Integrated Laboratory Scale experiment produced a maximum of 2.0 normal m<sup>3</sup>/hr and an average of ~0.85 Nm<sup>3</sup>/hr for 420 hours in Sept-Oct, 2007.