HAI Newsletter

Hydrogen Association of India

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Quote:

If the human condition were the periodic table, maybe love would be hydrogen at No. 1. Death would be helium at No. 2. Power, I reckon, would be where oxygen is.

David Mitchell

Honda and GM pioneer new fuel-cell manufacturing venture

The first time General Motors' global product development chief Mark Reuss got an up-close look at Honda technology was as a kid when he tore apart his QA-50 minibike in the family garage. The little Honda's 50-cc engine contained infinitely more parts than are in the hydrogen fuel cell stack GM plans to manufacture (ironically) with joint-venture partner Honda beginning in 2020.

Now Reuss, along with the GM Global Propulsion team and their Honda R&D colleagues, are preparing to bring the fuel-cell program into the manufacturing stage. After three years of co-developing a new-generation fuel cell stack aimed at light vehicles, military, aerospace and other applications, the companies announce the establishment of Fuel Cell System Manufacturing LLC—the industry's first joint venture for fuel-cell production.

Nel Hydrogen Solutions Receives purchase order from Uno-X Hydrogen for additional H2Station® in Bergen

Nel Hydrogen Solutions, a division of Nel ASA (Nel, OSE:NEL), has received a purchase order from Uno-X Hydrogen AS (Uno-X Hydrogen) for equipment to build a second H2Station® in Bergen, Norway. The purchase order has a total value of approximately EUR 1 million, and the H2Station® is planned for installation in Bergen during 2017. Uno-X Hydrogen is a joint venture between Uno-X, Praxair and Nel, aiming at building a nationwide network of 20 hydrogen fueling stations covering the major cities in Norway by 2020.

Hydrogen: AREVA H2 discloses the concept of a high-capacity production plant

Germany's Transport Ministry will invest 250 million euros ($265 million) by 2019 in making hydrogen-fuelled cars suitable for mass production, German newspaper Die Welt has said, without citing its sources.

Some of the money will be used for research and development with the aim of making such cars competitive and some of it will be used to develop infrastructure such as fuelling stations, the report said.

It said the German government had agreed on a support programme for fuel-cell cars that would run until 2026.

"With electromobility and automated and connected driving, the biggest mobility revolution since the invention of the car is ahead of us," Transport Minister Alexander Dobrindt told the newspaper.

Toyota starts trial of a Hybrid Power Generation System

Toyota Motor Corporation has begun trial operations of the pressurized combined power generation system (hereafter, hybrid power generation system) which has been installed at Motomachi Plant in Toyota City, Aichi Prefecture.

The hybrid power generation system combines the use of solid oxide fuel cells (SOFC)1 (hereafter, "fuel cells") and micro gas turbines2. The trial operations will utilize the system as an internal power generation facility, with the aim of testing and evaluating the system's energy efficiency, performance, and durability.

The hybrid power generation system uses hydrogen and carbon monoxide which have been extracted by reforming natural gas, and employs fuel cell technology and micro gas turbine in its two-stage power generation mechanism, with a rated output of 250 kW.
This hybrid system achieves high generating efficiency (55%3) with its two-stage power generation system, and also increases overall efficiency (65%) by using the cogeneration system.

University of Bayreuth Researchers increase energy production in microbial fuel cells

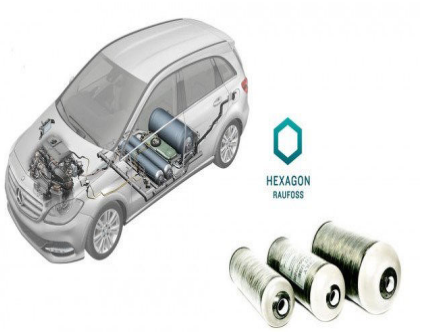
Microbial fuel cells exploit the metabolism of bacteria in order to generate electricity. A new type of biofilm developed in Bayreuth could soon make this relatively young technology considerably more effective, more stable, and easier to use. A research team at the University of Bayreuth has succeeded in producing a material that is far better suited for energy production in fuel cells than natural biofilms.

The material developed by the research group led by Prof. Dr. Ruth Freitag (Process Biotechnology) and Prof. Dr. Andreas Greiner (Macromolecular Chemistry) is a biocomposite: a hydrogel, to be exact. It is a network of tiny polymer fibres containing a single type of bacteria, the metabolisms of which can continue generating power without interruption. However, the amount of power produced is considerably higher: “Our biofilm contains only one type of bacteria, namely Shewanella oneidensis. The electrical performance of a fuel cell with this film is twice as high as when bacteria of this species produce a natural biofilm.

UQM Technologies Receives $2.2 Million Fuel Cell Compressor System Order for China Market

UQM Technologies, Inc. (NYSE MKT: UQM) today announced a significant purchase order from a major Chinese OEM for delivery of its R340 fuel cell compressor systems. The purchase order is valued at $2.2 million. Shipments are expected to begin in the summer of 2017 and be completed by fall of 2017. These compressor modules are a key component in hydrogen powered fuel cell systems. UQM has seen much success with its unique R340 fuel cell compressor system, which is designed for light-duty automotive applications for up to 75kW fuel cell stacks.

Hexagon Composites enters into joint venture agreement with Nel ASA and PowerCell Sweden AB



Hexagon Composites ASA (OSE:HEX) has finalized the joint venture agreement with Nel ASA and PowerCell Sweden AB for the development of integrated hydrogen projects. The equally owned joint venture will initially focus on opportunities in the maritime and marine segments as well as projects to capture stranded renewable energy.

SunLine Transit Agency announces $12.5 million grant for five hydrogen-powered buses & hydrogen-generating station in Coachella Valley

At a pre-Earth Day ceremony Friday, Senator Jeff Stone, Assemblyman Eduardo Garcia and other officials will celebrate a $12.5 million grant from California Climate Investments for five new zero-emission New Flyer fuel cell buses. The grant also supports the development of the largest hydrogen fueling station in the U.S. of its kind, from Hydrogenics, using electricity and renewable energy to generate clean hydrogen.

Hydrogenics Awarded Funding to Build Two Hydrogen Fueling Stations for the Greater Toronto Area (GTA)

The Honourable Navdeep Bains, Minister of Innovation, Science and Economic Development, made the announcement during a news conference at Hydrogenics' headquarters in Mississauga, Ontario on Thursday, April 6th. The Minister announced an award of $1.6 million for the GTA Hydrogen Beachhead project — including two hydrogen fueling stations — to be built in the GTA area, establishing a new Canadian market for fuel-cell vehicles. The Minister also announced that Canada will boost the growth of clean technology in 2017 by making available more equity finance, working capital and project financing to promising firms in the sector. Nearly $1.4 billion in new financing will be set aside to help Canada's clean technology firms grow and expand.

Upcoming Events

1) **231st Electrochemical Society Meeting, including Symposia on Fuel Cells, Electrolyzers, and Energy Conversion, 28 May-2 June 2017 New Orleans, Louisiana (USA)**

3) **International Hydrogen + Fuel Cells 2017 Summit, HFC 2017 - 5-6 June 2017 Vancouver, BC (Canada)**

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