

# The Canadian Hydrogen Conference 2003

By Tapan K. Bose, President, CHA

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## Introduction:

After a very successful [World Hydrogen Energy Conference](#) (June 9-13, 2002) in Montreal, organized by the [Canadian Hydrogen Association](#) (CHA) jointly with the [National Hydrogen Association](#) (NHA) of the United States, the CHA board decided to move West for this year's conference. The 2003 CHA annual meeting will thus be held in Vancouver from June 8 to 11 at the Westin Bayshore hotel. The conference is organized jointly with Fuel Cells Canada (FCC).

Since the announcement of President Bush to spend 1.2 billion dollars over five years for hydrogen research, hydrogen conferences are attracting a lot of public attention. At this year's NHA conference in Washington (March 4-6, 2003), the participation increased by twofold. We expect the same to happen for the Vancouver meeting. Early registration for the hotel will therefore be prudent.

## The Conference Program:

The conference will have six plenary sessions, two keynote addresses and six parallel sessions for contributed papers. There will also be poster presentations on June 8 and 9. CHA-FCC will grant three prizes for the best poster presenters. The details of the program are shown below.

## Technical Program

The Technical Committee of the Hydrogen and Fuel Cells 2003 Conference, under the co-chairmanship of Dr. Ron Venter and Dr. Rod McMillan, has developed an outstanding program, complete with a distinguished array of keynote and plenary speakers. The sessions will address a comprehensive range of issues of significance and insights into the future of hydrogen, the tools, the infrastructure and the implementation.

## Keynote Sessions

There are two keynote addresses. The topics selected for these keynote addresses, materials and investment opportunities, are central to the technical and business success of the industry. An understanding of materials, as well as their development and the assessment of their reliability, is of fundamental importance to modern technologies, and this is no different for fuel cells and other hydrogen related technologies. Equally important are the investment opportunities that will drive the transformation of materials knowledge, good design and engineering to produce the competitive green products of the future.

The two keynote addresses will be given by the presidents of two pioneering Canadian companies, both of whom have distinguished themselves in their respective areas of expertise.

Keynote 1      Tuesday, June 10      08:00am

## Materials & Micro Fuel Cells

Dr. Ged McLean      President, Angstrom Power

Keynote 2      Wednesday, June 11    08:00am

**Financing Hydrogen & Fuel Cell Developments in Today's Investment Climate**

Dr. Wal van Lierop      President, Chrysalix Energy

**Plenary Sessions**

The six invited plenary talks, together with the two keynote addresses, focus on the important themes within the conference, which include Hydrogen Infrastructure, Environment, Economics & Education, Materials & Innovative Technologies, Hydrogen Storage Systems & Applications and Fuel Cells. Two Plenary Talks are scheduled for each morning of the Conference as noted below. These invited presentations will serve as the introductory gateway to the planned parallel sessions on the themes already identified.

**Monday Morning:**

Plenary 1      June 9 at 08:50am

**Canadian Strategies and Opportunities**

Stephen Owen , Secretary of State, Western Economic Diversification

Plenary 2      June 9 at 9:25am

**Societal Benefits of a Hydrogen Economy**

Allan Lloyd, Chairman, California Air Resource Board

**Tuesday Morning:**

Plenary 3      June 10 at 08:50am

**Hydrogen and Nuclear Power: Engines of a Clean-Energy Future**

John Ritch, Director General, World Nuclear Association

Plenary 4      June 10 at 9:25am

**Fuel Cells in Transition**

Dennis Campbell, President and Chief Operating Officer, Ballard Power Systems Inc.

**Wednesday Morning:**

Plenary 5      June 11 at 08:50am

## **Fuel Cells & Fuel Processing**

Greg Romney Vice-President, Fuel Cells and Fuel Processing, Chevron Texaco

Plenary 6 June 11 at 09:25am

### **A Profitable Route to the Hydrogen Economy**

Amory Lovins Chief Executive Officer, Rocky Mountain Institute, Colorado

### **International & National Trends in Hydrogen Development & Infrastructure**

In addition to these six plenary talks, senior representatives from four Pacific Rim countries, Canada, Japan, USA and China, will provide useful insights and a focused perspective of technical developments and planning approaches within these countries.

### **Parallel Sessions**

During the Conference a total of thirty parallel sessions, representing some 150 presentations, is planned. Excellent submissions were received in response to the call for abstracts. These have been reviewed and assembled into a comprehensive and informative program. A listing of these Parallel Sessions within each of the theme area is summarized below.

The Conference website, [www.hydrogenfuelcells2003.com](http://www.hydrogenfuelcells2003.com), will update this information and will shortly also include all authors, titles of the presentations and the detailed schedule of each parallel session.

#### **Monday: Parallel Sessions**

#### **Environment, Economics & Education**

##### **Hydrogen Infrastructure**

M1.1 Codes & Standards

M 2.1 Hydrogen Economy

M 1.1 Reforming Systems I

M1.4 Production: Bio-Hydrogen,  
Wind & Geothermal

M 2.3 Hydrogen Fueling

M 2.4 Implementation & Distribution

#### **Materials & Innovative Technologies**

#### **Hydrogen Storage Systems & Applications**

M 1.5 Fuel Cell Membranes I  
&MM 2.5 Fuel Cell membranes II

M 1.6 Compressed Gas, Liquid Hydrogen  
Modeling of Systems

M 2.6 Compressed Gases

#### **Fuel Cells**

M 1.2 Fuel Cell Fundamentals

M 2.2 Fuel Cells Systems

#### **Tuesday: Parallel Sessions**

#### **Environment, Economics & Education**

T 1.2 Investment Communication

## **Hydrogen Infrastructure**

T 1.1 Hydrogen Highways

T 3.3 Nuclear, Coal & Electrolysis

T 3.4 Reforming Systems II

## **Materials & Innovative Technologies**

T 1.3 Nano Materials I

T 3.5 Fuel Cell Materials & DMFC

## **Fuel Cells**

T 2.3 Fuel Cell Applications

T 3.2 Applications & Balance of Plant

## **Wednesday: Parallel Sessions**

### **Hydrogen Infrastructure**

W 1.5 Hydrogen Distribution

W 1.6 Hydrogen Systems

### **Materials & Innovative Technologies**

W 1.1 Fuel Cells Materials & Innovative Technologies

### **Fuel Cells**

W 1.2 Balance of Plant & SOFC

## **Special Sessions:**

Within the parallel sessions, four special sessions have been planned. The pertinent information on each of these unique sessions is summarized below.

## **Tuesday June 10th, 2003**

*Session T1.1 Hydrogen Highways, June 10 at 10:20am*

Dominique Kluyskens, Director of Fuel Cell Market Development within Methanex, will chair this informative session on hydrogen pathways. The business strategies of Methanex and other industry partners, together with government agencies and research organizations, will be integrated so as to plan the required hydrogen infrastructure corridors for both vehicular and stationary applications. The infrastructure involves fuelling stations /electrolysis and hydrogen dispensing, methanol reforming to hydrogen and methanol and hydrogen dispensing, all directed to the infrastructure that is necessary to make a greener environment possible.

Session T1.2 Communicating Effectively With the News Media, June 10 at 10:20am

Strategies

T. 2.1 Canadian Strategies

T 2.2 International Perspectives & Investments

T 3.1 International Perspectives & Policy

## **Hydrogen Storage Systems & Applications**

T1.4 Hydrides

## **Environment, Economics & Education**

W 1.1 Educations & Environment

W 1.4 Arctic Fuel Cells

There's a world of difference between communicating and communicating effectively. Jim Hoggan, President of James Hoggan & Associates Inc., a leading Canadian public relations company and specialist in the hydrogen and fuel cell industry, says the challenge is to rise above the noise of the sector. He will lead a panel of journalists and an industry executive to discuss how to achieve this.

*Session T2.1 Canadian Strategies, June 10 at 1:30pm*

This special session will provide delegates with an opportunity to learn how various governmental organizations are advancing the fuel cell industry for Canada. There will be an opportunity to ask questions of the presenters and to participate in a forum discussion on the strategic direction necessary to effect early fuel cell adoption within a vibrant Canadian industry. Presentations and forum participants will represent NRCan, Industry Canada, the Government of Manitoba, NRC and Fuel Cells Canada.

**Wednesday June 11th, 2003**

Session W1.4 Arctic Fuel Cells Initiative [AFCI], June 11 at 10:20am

Bak Chauhan of the Aurora Research Institute, Inuvik, will chair this informative session on the Arctic Fuel Cells Initiative [AFCI]. The AFCI is an effort of the circumpolar world to promote hydrogen economy in the Arctic, and to cooperate for further research, development, demonstration and installation of fuel cell technologies. Extremely cold conditions in the Arctic demand greater energy requirements. Remote and widely dispersed communities make it much more costly to produce and distribute power. Invited speakers from the circumpolar world will address the challenges and opportunities.

**Poster Session**

Many papers are best presented as a poster where intimate dialogue between the presenter and the other interested delegates can take place and is beneficial to the exchange of information. To facilitate this interaction, two poster sessions are scheduled for Sunday evening and Monday evening. In each of these open dialogue sessions some 60 posters covering the defined themes of the Conference will be displayed. Presenters will be in attendance during these defined times to answer questions and to present their work.

**Program Discussion**

A quick look at the program will clearly identify the areas where hydrogen and fuel cells have the best chance for niche applications. Hydrogen-fuel cell companies should pay particular attention to the Arctic. Fuel cells have several advantages over other methods of power generation in very cold and isolated areas. The arctic environment is very sensitive and any large scale fossil fuel leaks could have incalculable risk on the Arctic atmosphere. Hydrogen production from renewable sources such as sun, wind and water make lot of sense both for the Arctic and the Antarctic. The electricity produced from the renewable sources could be used directly and the excess electricity could go towards the production of hydrogen for use in cars, buses and snowmobiles.

Another topic that will be discussed at this conference is the infrastructure required for building a hydrogen economy. Renewable sources may not be sufficient for total replacement of fossil fuel in urban centers. A possible alternative may be hydrogen production from nuclear energy and coal. These topics will be discussed at this conference in plenary as well as parallel sessions.

The discussion on education will also be of great interest. We need to increase the awareness of the public at large to the benefits of the hydrogen economy.

Introduction of hydrogen and fuel cell topics in elementary and high school curricula is of great importance. The hydrogen economy will be hastened if the younger generation becomes more knowledgeable about the benefits of hydrogen.

There is also a session on international and national trends in hydrogen development and infrastructure. The hydrogen program from the four Pacific Rim countries will be presented. We hope all the PATH members and associates will join the conference and participate in the discussion. The PATH board will meet on June 11, 2003 at the end of this conference.