international association for hydrogen energy
Clean and Abundant Energy for Sustainability

E-Newsletter

Spring 2009 Volume 1 Issue 1

The **objective** of the IAHE is to advance the day when hydrogen energy will become the principal means by which the world will achieve its long-sought goal of abundant clean energy for mankind. Toward this end, the IAHE stimulates the exchange of information in the hydrogen energy field though its publications and sponsorship of international workshops, short courses, symposia, and conferences. In addition, the IAHE endeavors to inform the general public of the important role of hydrogen energy in the planning of an inexhaustible and clean energy system.

**CONTACT US:**

**IAHE**
**5794 SW 40 St. #303**
**Miami, FL 33155, USA**
**info@iahe.org**

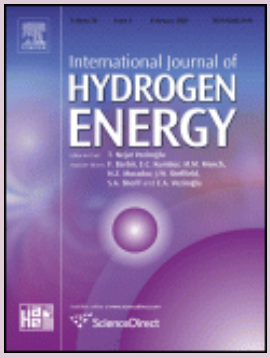
**Any questions on the Newsletter or IAHE?**
**E-mail: mmm124@psu.edu**

## INSIDE THIS ISSUE



**Solar Panel Installation in Bozca island, Turkey as Part of UNIDO-ICHET Hydrogen Island Project. Photo Courtesy of UNIDO-ICHET**

# INTERNATIONAL JOURNAL OF HYDROGEN ENERGY HIGHLIGHTS




The *International Journal of Hydrogen Energy* provides scientists and engineers throughout the world with a central vehicle for the exchange and dissemination of basic ideas in the field of hydrogen energy. The emphasis is placed on original research, both analytical and experimental, which is of permanent interest to engineers and scientists, covering all aspects of hydrogen energy, including production, storage, transmission, utilization, as well as the economical, environmental and international aspects. When outstanding new advances are made, or when new areas have been developed to a definitive stage, special review articles will be considered. As a service to readers, an international bibliography of recent publications in hydrogen energy is published quarterly.


## *Highlights from Articles Published in the IJHE*

The IJHE article: **From hydrocarbon to hydrogen-carbon to hydrogen economy** by N. Z. Muradov and T. N. Veziroglu, Vol. 30, Issue 3, pp. 225-237, 2005 has been identified by Thomson Reuters' Essential Science Indicators to be one of the most cited papers in the research area of "Hydrogen Economy".
A Q&A with lead author Nazim Muradov is featured on the sciencewatch.com Fast Moving Article website at:
http://sciencewatch.com/sciencewatch/dr/fmf/2009/09mayfmf/09mayfmfMura/

## MOST HIGHLY CITED IJHE ARTICLES

1. **Hydrogen production by biological processes: A survey of literature** Vol. 26, Issue 1, 2001, pp. 13-28 , Das, D., Veziroglu, T.N.
2. **Hydrogen from hydrocarbon fuels for fuel cells** Vol. 26, Issue 4, 2001, pp. 291-301 Ahmed, S., Krumpelt, M.
3. **Biohydrogen production: Prospects and limitations to practical application** Vol. 29, Issue 2, 2004, pp. 173-185 , Levin, D.B. , Pitt, L., Love, M.
4. **A comparative study of fuels for on-board hydrogen production for fuel-cell-powered automobiles** Vol. 26, Issue 4, 2001, pp. 381-397, Brown, L.F.
5. **Sustainable fermentative hydrogen production: Challenges for process optimisation** Vol. 27, Issue 11-12, 2002, pp. 1339-1347, Hawkes, F.R., Dinsdale, R., Hawkes, D.L., Hussy, I.

## RECENTLY PUBLISHED IJHE ARTICLES

1. **Hydrogen production from biomass combining pyrolysis and the secondary decomposition**, Baofeng Zhao, Xiaodong Zhang, Li Sun, Guangfan Meng Lei Chen, and Yi Xiaolu
2. **Durability of a Ni based monolithic catalyst in the autothermal reforming of biogas**, Sadao, Araki , Naoe, Hino , Takuma, Mori , Susumu, Hikazudani
3. **A density functional study of small Li–B and Li–B–H clusters ,** E.K., Yildirim , Z.B., Güvenç
4. **Structural evolution of Pd-capped Mg thin films under H2 absorption and desorption cycles**, G. Siviero, V. Bello, G. Mattei, P. Mazzoldi, G. Battaglin, N. Bazzanella, R. Checchetto and A. Miotello
5. **Evaluation of the influence of CO2 on hydrogen production by Caldicellulosiruptor saccharolyticus**, Karin, Willquist , Pieternel A.M., Claassen , Ed W.J., van Niel

## TOP IJHE DOWNLOADS (OCT.-DEC. 2008)

1. **Comparing the hydrogen storage alloys-TiCrV and vanadium-rich TiCrMnV** Volume 32, Issue 16, Pages 3959-3964.
2. **'Green''path from fossil-based to hydrogen economy: An overview of carbon-neutral technologies**, Volume 33, Issue 23, Pages 6804-6839.
3. **Advances in biological hydrogen production processes** Volume 33, Issue 21, Pages 6046-6057.
4. **Photovoltaic hydrogen generation** Volume 33, Issue 21, Pages 5911-5930.
5. **Potential importance of hydrogen as a future solution to environmental and transportation problems** Volume 33, Issue 15, Pages 4013-4029.

# NEWS FROM IAHE AFFILIATES

## CALL FOR NEW STUDENT CHAPTERS

The IAHE is presently calling for the development of student chapters all over the world. To begin a chapter at your school, a faculty leader and interested students are needed. Student membership in IAHE is free, and the IAHE can support chapter start-up costs. Students and faculty all over the world will be electronically linked as part of a connected network through this activity. The IAHE will be offering video-based webinars for the chapters, a student hydrogen design competition, collected and shared information, student and faculty service awards, and other unique networking and educational opportunities. If you have interest, please contact Prof. Matthew Mench at mmm124@psu.edu for information. Already, student chapters are in the planning stages at over a dozen Universities in the United States, Canada, South Korea, Turkey, and elsewhere! Join us.

## NEWS FROM STUDENT CHAPTERS

The IAHE recently added a Student Chapter at Penn State University. The first official meeting took place March 26. Over 55 undergraduate and graduate students from various departments across the campus have become student members of the IAHE so far. Students with interests or research work in microbial fuel cells, hydrogen storage, hydrogen combustion, energy economics, and others areas have joined. During the Fall term, the student chapter will participate in a hydrogen design competition, sponsor various social events, host guest speakers, and network with the other IAHE student chapters worldwide. For more information, contact Chapter President A. K. Srouji at ams808@psu.edu


**Students at the Penn State IAHE Student Chapter Inaugural Meeting**

**IAHE Affiliates**

The IAHE has organizational affiliate organizations worldwide. To see a complete listing, please go to: www.iahe.org

The IAHE also seeks to further develop and promote hydrogen-based organizations worldwide. For more information on collaboration opportunities, please contact Matthew Mench at mmm124@psu.edu

# MEETINGS, WORKSHOPS, AND ACTIVITIES

## *News of Meetings, Activities and Workshops*

### Report on 2009 National Hydrogen Association Meeting

The 2009 National Hydrogen Association (NHA) Conference and Hydrogen Expo took place in Columbia, South Carolina March 30-April 3 with almost 700 registered attendees. Please see http://www.nationalhydrogenassociation.org/ for details. One of the most interesting outcomes of the conference related to a report prepared for the hydrogen community entitled "The Energy Evolution- *an analysis of alternative vehicles and fuels to 2100"* available at http://www.hydrogenassociation.org/general/evolution.asp.

In this report, the NHA compared the future economic, imported oil requirements, and net pollution outcomes for several types of alternative transportation, including plug-in hybrids, hybrids, hydrogen internal combustion engines, and fuel cells. The results were quite convincing: Only hydrogen fuel cells offer the greatest cost and pollution benefits to society in the long term, and can provide near energy independence for the US by 2060.

The report concluded that a automotive market dominated by fuel cells would:

- Reduce greenhouse gases to 80 percent below 1990 levels.
- Allow the USA to achieve energy quasi-independence by 2060.
- Save the USA more than $600 billion per year by 2100 through a reduction in the societal costs associated with passenger vehicle transportation system.

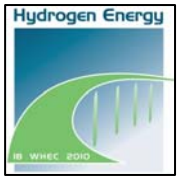
### IAHE MEETINGS

The 3rd World Hydrogen Technology Conference (WHTC)

August 26-29, 2009
New Delhi, India


Conference Web Site:
http://www.whtc2009.org/whtc2009/

The 18th World Hydrogen Energy Conference (WHEC)




May 16-21, 2010
Essen, Germany

Conference Web Site:
http://www.18whec2010-germany.de/

### OTHER H2 MEETINGS

Hydrogen + Fuel Cells 2009: International Conference and Trade Show
May 31st-June 3, Vancouver, Canada
http://www.hfc2009.com/

10th Chinese H2 Energy Conference
September 18-20, 2009
Nankai University Tianjin (China)

European Fuel Cell Forum 2009
June 28-July 2, 2009
http://www.efcf.com/

6th International Hydrogen and Fuel Cell Expo—FC EXPO 2010
March 3-5 2010
Tokyo, Japan
http://www.fcexpo.jp

For information on other conferences and events, please see www.iahe.org.

Know of a hydrogen-related meeting you would like to advertise?

Send a short description and web links to:
mmm124@psu.edu

Be sure to reference in the subject line of the email "IAHE Newsletter"

# COMMENTARY

***MATTHTEW M. MENCH, PENN STATE UNIVERSITY***

## *Recent Growth at the IAHE*

Thank you for reading the first issue of the new IAHE newsletter, I hope you find it useful! In the future, this page will be devoted to commentary from a researcher, industrial leader or politician on topical subjects related to hydrogen. In these times of economic turmoil in the United States and abroad, many organizations are suffering cutbacks or simply dying off. The IAHE, however, sees tremendous opportunity in these times to finally make the inevitable pivot toward real change in the way the world produces, stores, and utilizes energy. As the first international organization dedicated to promoting hydrogen energy, the IAHE is experiencing a phase of renewed growth, and as part of that effort this newsletter was developed.

The objective of the IAHE is to advance the day when hydrogen energy will become the principal means by which the world will finally achieve its goal of abundant clean energy. In order to help achieve that goal, the IAHE publishes the highly rated International Journal of Hydrogen Energy, and holds World Hydrogen Energy Conference and a World Hydrogen Technology Conferences in alternating years. Besides these events, which have been a core of the IAHE activities since its founding in 1974, several new activities are being advanced as part of the renewed pace of development of the IAHE:

1) A new network of student chapters of the IAHE is being developed, and special benefits and considerations to bring more students into the IAHE are under way. In April alone, over 55 new graduate and undergraduate students joined the IAHE chapter at Penn State, and many other chapters are in the planning stages or have already had their inaugural meeting!
2) IAHE student membership is now free. Interested students can apply online at www.iahe.org or by sending me an email.
3) The IAHE is actively seeking to work with and promote existing national hydrogen associations. We can help plan, sponsor, and promote events across a wide distribution platform. We also seek to link the new student chapters in local countries with their national hydrogen association.

Whether you are a student, a professional in industry or a faculty member, if you have an interest in promotion of hydrogen technologies, there is a role for you in the IAHE. I welcome the opportunity to speak with you about ways in which we can meet the needs of our members and grow our global impact toward promotion of hydrogen. If you are already working within a national hydrogen association, we encourage you to also work with the IAHE to see how we can help. The more voices and collective shared experience we have, the more we can accomplish together.

With warm regards,

Please give me a call at 814-865-0060 or email me at mmm124@psu.edu.
I welcome a visit if you are in the State College area.

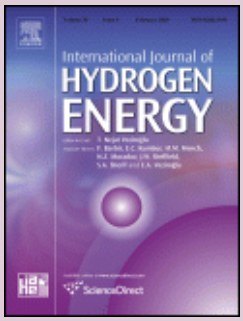
Matthew Mench is an Associate Professor of Mechanical Engineering at Penn State University, and Founding Director of the Penn State Fuel Cell Dynamics and Diagnostics Laboratory. He is also the author of the textbook: *Fuel Cell Engines*, now adopted at Universities around the world. He serves as the Vice President for Development of the IAHE and can be reached at 814-865-0060 and by email at: mmm124@psu.edu

# *Contacts and Information*

## BOARD OF DIRECTORS



## ON THE WEB

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**International Journal of Hydrogen Energy (IJHE)**
**The Official Journal of the IAHE**
**http://www.elsevier.com/locate/he**

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