

March 2005 Event

ASME St. Louis Section dinner and presentation on **HYDROGEN AND FUEL CELLS FOR CLEAN CITIES**

Wednesday March 16, 2005
Tom Mull, Event Captain (636-938-6173)

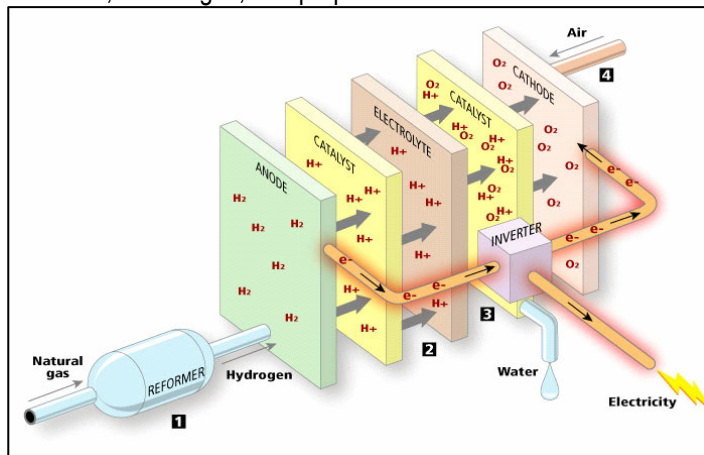
An overview of hydrogen, fuel cells and infrastructure technologies toward generation of clean and efficient power for transportation and stationary applications will be presented.

Hydrogen and fuel cells have the potential to solve several major challenges: dependence on petroleum imports, poor air quality, and greenhouse gas emissions. Hydrogen can be produced cleanly and cost-effectively from renewables such as biomass, water, and fossil fuels using advanced technologies to ensure that any carbon released in the process does not escape into the atmosphere; and nuclear energy. Hydrogen can be delivered and stored routinely and safely.

Fuel cells are an important enabling technology for the Hydrogen Future and offer cleaner, more-efficient alternatives to the combustion of gasoline and other fossil fuels. Although the potential benefits of hydrogen and fuel cells are significant, many challenges, technical and otherwise, must be overcome before hydrogen and fuel cells will offer a competitive alternative for consumers. These challenges include hydrogen production and delivery, hydrogen storage, fuel cell cost and durability, safety and public acceptance.

A fuel cell produces electricity directly from the reaction between hydrogen (derived from a hydrogen-containing fuel or produced from the electrolysis of water) and oxygen from the air. In a conventional car with a combustion engine, the fuel combines with oxygen and, as a result, produces energy in the form of heat and mechanical motion. In a fuel cell, the fuel is also oxidized, but the resulting energy takes the form of electricity. What's more, when powered by pure hydrogen, the only by-products of the reaction are heat and water. Fuel cell vehicles are expected to achieve overall energy conversion throughput efficiencies around twice that of today's typical gasoline internal combustion engines. The fuel cell system is being targeted by DOE to achieve 60% efficiency by 2010. Fuel cell vehicles can run on any hydrogen-rich liquid or gas, as long

as it is suitably processed. Gasoline is one possibility, but in addition to pure hydrogen, alternative fuels such as ethanol, methanol, natural gas, and propane can also be used.



Using pure hydrogen to power fuel cell vehicles offers the distinct advantage of zero emissions, but only on the vehicle, not at the hydrogen production source. However, emissions created at a single point of production are often easier to control than those produced by a moving vehicle. A fuel cell vehicle that runs on pure hydrogen produces only water vapor—using any other fuel will produce some carbon dioxide and other emissions, but far less than what is produced by a conventional vehicle.



Stationary power is the most mature application for fuel cells. Stationary fuel cell units are used for backup power, power for remote locations, stand-alone power plants for towns and cities, distributed generation for buildings, and co-generation (in which excess thermal energy from electricity generation is used for heat). Technology validation of stationary and distributed

generation systems will help to understand the issues associated with integrating fuel cells with the electrical grid and using fuel cells for combined heat and power for buildings.



Speaker: **Dr. Fatih Dogan** is a professor in the Materials Science and Engineering Dept. at the University of Missouri-Rolla. His research covers electronic materials for energy conversion systems including dielectrics and ferroelectrics, high temperature superconductors, thermophotovoltaics and solid oxide fuel cells. Dr. Dogan is director of the Center for Dielectric Studies at UMR.

Date: Wednesday evening March 16, 2005

Time: 5:30 to 6:00 pm: cash bar and social reception.

6:00 to 6:30pm: dinner, 6:30 pm: program presentation.

Location: C.J. Muggs Restaurant, 101 W. Lockwood, Webster Groves, MO 63119, (314) 963-1976.

Cost: \$20.00 for members and guests, \$10.00 for students.

Reservations: Req'd by 5:00pm Friday March 11, 2005. Call the ASME Reservation Service at (314) 353-2463. For more info, call or email Tom Mull (mullt@att.net).

Directions: Take I-44 to Elm Avenue in Webster Groves. Take Elm Ave. north approximately one mile to Lockwood. Turn left on Lockwood and go about one block west to C.J. Muggs Restaurant which is on the corner of Lockwood and Gore. There is public parking in back of the building, enter from Lockwood. There is an entrance to C.J. Muggs on the lower level of the parking garage. Parking is also available behind the bank on Lockwood and you can enter C.J. Muggs from the corner of Lockwood and Gore. See map on last page.

Message from the Chair

Thanks to those who participated in the celebration of Engineers Week as well as 125th Anniversary of ASME Founder's Day. The anniversary video featured our distinguished St. Louis member, Ms. Betty Bowersox singing, "Happy Birthday to ASME". The students from SLU and SIUE showcased their capstone design projects with poster display. Dr. David A. Peters, McDonnell Douglas Professor of Engineering from Washington University in St. Louis gave an excellent presentation on "Boomers, Bloomers, and Zoomers". It was a great journey to travel back in time and experience the speaker's reflection on space exploration.

March is an important month for Mechanical Engineers. It is the 90th anniversary of Boiler Code Day. It was first accepted as an ASME document on March 12, 1915. In recognition of this day, the national theme for this month is "STANDARDS".

To celebrate this event, we have scheduled a dinner meeting with a presentation on Fuel Cell technology of the future.

Last month, we honored the members with 20 & 15 years of membership service. This month we will be honoring the members with 10 & 5 years of membership service. The eligible members are encouraged to participate in this event. Also, these members would receive an e-mail invitation. For any unforeseen reason, if you did not get the invitation and if you think that you are eligible please register and let us know so that we can recognize you at the meeting.

Region VII is hosting the MEGA Regional Administrative Conference (RAC), jointly with Region V and VI. The conference is scheduled during March 18-20, 2005 at Westin O'Hare Hotel, Rosemont, Illinois. The new organizational structure of ASME would be addressed in this conference. Those who interested are encouraged to participate in this event. Professional development seminars are also featured. They are Intellectual Property Seminar on Business & Career Protection (3-PDH), and Spring Design (4-PDH). Details can be found at <http://regions.asme.org/mwro/mrindex.htm>

Swami Karunamoorthy

St. Louis Section Chair

Nominations For STL Section Officers

Upcoming election

The nominating committee has nominated several persons for potential election as officers of our St. Louis section for the upcoming 2004/2005 year. The nominees are:

Chairman - **Jim Campbell**

Vice Chair - **Dr. Sridhar Condoor**

Secretary - **Angela Berring**

Treasurer - **Mary Hammond**

No other additional nominations have yet been received by the Secretary of ASME St. Louis Section (condoor@slu.edu)
Phone: (314) 977-8444

At the upcoming Section meeting on April 21st, if only one nomination has been made for each office and if no further nominations have been made by petition signed by not less than 15 members, the Chairman shall direct the Secretary to cast a ballot for the unanimous election for the nominees. If there is more than one nominee for any office, through the selections of the Committee or by petition, the Chairman shall direct the Secretary to submit a letter ballot, containing the names of all nominees and blank spaces for the write-in of choices, to the membership. Said ballot shall be submitted within ten days and shall be counted following the 10th day after mailing to the membership. The candidate receiving the highest number of votes for each office shall be declared elected. All St. Louis section members are urged to attend the April election meeting.

Stl. Section Members With 10 Years Service:

Scott Ashwell, Patrick Burd, David Crawford, Jaime Garzon, David Henkelmann, Ta -Chung Hsia, Antony Okafor, Herman Rusche, Steven Schmidt, Greg Sisk, Richard Speraneo, Stavros Thomopoulos, James Wonders.

Stl. Section Members With 5 Years Service:

Jeffrey Abernathy, Eric Anderson, Ryan Bare, Eric Borrowman, Douglas Brown, Michael Brunjes, James Campbell, Barbara Carrow, K. Chandrashekar, April Cochran, Evren Erturan, Kurt Geschwend, Steve Haberberger, Lou Helleny, Robert Hollis, Jeff Imhoff, Steven Jones, William Kinder, Joshua Kreutner, Fred Kutilek, David Lauver, Eric Lundequum, Brian Malin, Brian Mann, Matthew Markham, James Martin, Robert Masterson, Kurt McClellan, Brad Miller, Daniel Muntges, Andrew Nachtrab, Kenneth O'Brien, Alan Orban, James Parker, Peter Parker, Steve Perry, Andrea Peters, Jeffrey Pleus, Raymond Reardon, David Richter, Eric Rogers, Matthew Rutherford, Michael Schinsky, George Sciuto, Brian Smith, John Solodar, Donald Strohbeck, C. Stumpf, Steven Waring, Brandon Wieschhaus.

Message from the Program Chair

We have a list of programs for this year. A brief overview of this year's coming programs is given below.

April - 4/21/05 - Nanotechnology, dinner meeting and election of officers, Location of meeting: SLU Busch Student Center.

May - 5/17/05 - Professional Tour, Airport Expansion
Location: St. Louis Airport.

Jim Campbell, St. Louis Section Vice Chair & Program Chair,
Office: (618) 283-4700 ext.260
Mobile: (618) 920-1207
Fax: (618) 283-4810
jmcampbell@johncrane.com

Upcoming Event

Thursday April 21, 2005

Recent Developments in NANOTECHNOLOGY

Location: Saint Louis University, Busch Student Center
Program Captain: Swami Karunamoorthy

Bigger and Better has become the thing of past. Smaller and Smarter is where the future belongs. April meeting is the Distinguished Lecturers Program event and the speaker, Dr. Meyya Meyyappan is from NASA Ames, in Moffett Field, CA. He is the director of the Center for Nanotechnology. We all know that Mechanical Engineering is the widest branch of all engineering. This new technology made the widest branch even wider. It integrates Physics, Chemistry, Biology, Mechanical Engineering, Electrical Engineering, and Biomedical Engineering. It is truly an interdisciplinary engineering. If you like to know how this technology would

impact the mechanical engineers in future, please mark your calendar and register for this meeting. More details about election of officers will follow in the April newsletter.

ASME STL Section meeting with UMR Student Section

The St. Louis Section of ASME is scheduled to meet with University of Missouri -Rolla mechanical engineering students on Wednesday evening, March 23. This will be an informal discussion of what to expect in an engineering career. If there was ever anything you wished someone would have told you before you started your career, this is a great opportunity to pass that advice on to the next generation of engineers. If you are interested in attending or would like additional information, please contact:

Angela Berring
(618) 258-2214
acberring@olin.com

**Please join us at the next ASME
St. Louis Section Board Meeting
6:00 p.m. Tuesday, March 22nd
at Laclede Street Bar and Grille
3818 Laclede Avenue
near Saint Louis University Campus**

Regions V, VI, VII Mega-RAC March 18-20, 2005

Dear Member,
In an effort to bring together the entire ASME Mid-Western Geographical Community, Regions V, VI and VII are planning a Mega-RAC for March 18-20, 2005. We are writing to extend an invitation for you to join us. Regions V, VI and VII comprise nearly 25 percent of ASME's membership, nearly 27,000 Members. Sessions regarding topics as Nanotechnology and the Petroleum Institute being featured. We have also planned the following presentations:

- "Application of Quality Concepts to Engineering Processes" will be the keynote presentation, given by Distinguished Lecturer, Dr. Amos Holt .
- "From Engineer to Manager" presented by John Bozewicz .
- "Structural Integrity in Marketing: A Solid Foundation for Promoting Your Business" presented by Brian Pelletier, Green Cardinal Communications .

The Mega-RAC is highlighting two Professional Development Courses: "Spring Design" facilitated Thomas Pimmler and "Career and Business Protection" with Richard Beem and Mark Partridge.

Registration for any activity and all conference information may be found online at: <http://regions.asme.org/mwro/mrindex.htm>. We hope to see you in Rosemont, IL.

Respectfully,
Leonard A. Anderson PE, Howard E. Conlon PE, Brian D. Erbstoesser PE

ASME Continuity and Change Sectors Reviewing Lists of Future Programs

The next step will combine seven separate lists into a single list prioritized for potential continuance under the new ASME organization:

CENTERS:

Engineering Management Certification International
Professional Development
Early Career Engineer Development
Diversity and Outreach
Research & Graduate Education
Public Awareness Initiatives
Department Head Development
Student Development
ABET Accreditation & Undergraduate Education
Pre College Education
Student Advisor and Faculty Development
Volunteer Training and Leadership Development
Ethics Program
Professional Licensure
History and Heritage
Leadership Development Initiative
Distinguished Lecturer Program
American Association of Engineering Societies
Student Financial Aid

CODES AND STANDARDS:

Boilers and Pressure Vessels
Piping
Boiler & Pressure Vessel Codes
Elevators & Escalators
Nuclear Codes and Standards
Drafting, Limits and Fits, and Symbols
Development (New Technology, Globalization, Etc)
Valves, Fittings Flanges and Gaskets
Performance Test Codes
Process Industries
Dimensional Standards
Other Lifting Devices
Measurement
Operator Qualification and Certification
Drafting Y14 Certification
ISO 9000 Registration
Plumbing
Turbines
Elevator (QEI , AECO)
Process Industries (RTP, BPE)
Compressors
Machine Guarding
Pallets
Industrial trucks

ENTERPRISE-WIDE:

IMECE Technical Program
Membership Development
Mechanical Engineering Magazine
IMECE Exhibit Program
International Agreements of Cooperation
Field Services
Corporate Communications
IMECE. & S AM Governance
ASME News
IMECE Honors & Keynote Program

GOVERNANCE:

Committee on Finance and Investment
BOG Meetings
Summit Team
Balanced Scorecard Nominating Committee
The Nominating Committee
Committee on Legal Affairs
Committee on Honors
Committee of Past Presidents
Committee on Organization and Rules
Committee on Staff
Pension Plan Trustees

INSTITUTES:

IGTI - Turbo Expo
IPTI - Offshore Technology Conference
IPTI - Technical Programs and Specialty Confer.
IGTI - Gas Turbine User Symposium
IGTI - Specialty Conferences
CEI - Distance Learning and Educational Prod.
ATP - Nanotechnology
ATP - Fuel Cells
CEI - Technology Seminars
CEI - AICHE Continuing Education Programs
CEI- Short Courses
CEI - In-Company Courses
IGTI - Education Courses and Workshops

KNOWLEDGE AND COMMUNITY:

IPC Conference & Exhibition - Pipeline Division
Division Journals
Pressure Vessels & Piping Conference
International Conference on Environmental Remediation
International Conference on Nuclear Engineering
National Manufacturing Week Conference
Technical Community (Divisions) Operations
ASME International Design Engineering Technical Conferences
ASME InterPACK Conference
ASME Power
Fluid Engineering Division (FED) Conference
Center for Research & Technology Development
ASME Press

Conference Proceedings
 Heat Transfer Division (HTD) Conference
 Handbooks & Manuals
 ASME / IEEE Joint Rail Conference
 K & C Governing Board and Board Admin
 Tribology (Trib) Conference
 International Solar Energy Conference
 International Combustion Engine Division Fall Technical Conf.
 North American Waste-to-Energy Conference
 VP and District Group Leader Administrative Costs
 International Combustion Engine Division Spring Tech Conf.
 Section and Student Section Allocations
 International Conference on Fluidized Bed Combustion
 Joint ASME IEEE Journals
 JSME International Journal (Japan)
 Applied Mechanics Review Journal
 Student Sections Committee
 Ingersoll Rand Student Section Competition
 Journal - Chinese ME

STRATEGIC MANAGEMENT:

Strategic Initiatives and New Products
 Strategic Issues, Opportunities and Knowledge
 Federal Government Relations
 Industry Advisory Board
 Federal Government Fellowships
 Government Relations State Programs

For more information, visit the ASME Continuity and Change website at www.asme.org.



Map to CJ Muggs restaurant for Fuel Cells presentation.

ASME STL Mail / Return Address

ASME St. Louis Section.
 c/o Engineer's Club of St. Louis
 4359 Lindell Blvd.
 St. Louis, MO 63108

Update your E-mail for newsletter issue

The St. Louis section downloads your address from ASME National to make our E-mailing and paper mailing. Update your E-mail and regular mail at website, www.asme.org under "Members only." Your sign-in ID is your ASME number. If you do not have E-mail or if you have preference for a paper version of the newsletter, please contact Sridhar Condoor at 314-977-8444 or condoor@slu.com. You can also view ASME St. Louis Section news at www.siu.edu/engineer/me/asme.

ASME 2004/2005 St. Louis Section Board

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