
FUEL CHEMISTRY NEWS

Newsletter of the ACS Division of Fuel Chemistry

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Fall 2009

Message from the Chair: Charles Taylor

Dear Members and Colleagues



I am a man who believes in keeping things short and to the point. As I near the midpoint of my term as Chair of the Division of Fuel Chemistry, I would like to take this opportunity to thank everyone who has

made this year a memorable one for me. I extend my thanks to the Executive Board for all their hard work through out the year. These people work hard to insure that Fuel is one of the premier Divisions within the ACS and receive very little recognition for their work. Without them, the Division would not function. I want to mention the outstanding work done by Andy Herring, the 2009 Program Chair, for making 2009 one of the most prolific years for papers presented at the National Meetings by the Division. Fuel had 196 papers at the Salt Lake City meeting, with less than 10 withdrawn. As a first, Fuel organized an experimental poster session at Salt Lake City. Globalization is the theme for Washington, DC, and there will be a high level fuel symposium co-sponsored by the Fuel and Petroleum Divisions.

Professor Akira Tomita of Tohoku University is the recipient of the 2009 Henry H. Storch Award in Fuel Chemistry sponsored by the

Division of Fuel Chemistry, ACS and by Elsevier Ltd. Henry H. Storch Award is given annually to an individual who has made outstanding contributions to research in the field of fuel science. Prof. Tomita's illustrious research career has been exemplified with 197 original peer reviewed papers, 37 review papers, 13 book contributions, and 23 patents. His lucid presentations and great generosity in sharing his knowledge have inspired many researchers.

The 2008 Spring Glen Award was presented at the joint Fuel/Petroleum Diner at Salt Lake City. The winning paper was "*Pulling it all together: Fuel chemistry modeling across the scales from individual molecules to engine simulations*" by Sandeep Sharma, C. Franklin Goldsmith, Teppei Ogura, Michael R. Harper, Gregory R. Magoon, Huzeifa Ismail, John P. Angelos, and William H. Green Jr. The paper was presented on Monday, April 7, 2008 during the 10:05-10:45 Symposium: *Computational Methods and Molecular Modeling in Fuel Chemistry*.

I also want to congratulate Randy Winans, who has been elected as an inaugural ACS Fellow. This is a great honor for Randy and he is definitely deserving of this award.

Membership as of the 2009 Spring National Meeting was 1373, a record high. The Division has significant international

membership, focused predominantly in Japan, Canada, and UK. We have 333 members in common with the Petroleum Division, 172 with the I&EC division, and 110 in common with the Environmental Division.

In these times of economic troubles, I want the membership to know that the Executive Board is well aware of the financial situation and we are taking steps to reduce spending without impacting the quality and quantity of our programs. As with most investments, we were not immune to the down-turn in the market. However, Fuel is still solvent and thanks to our Trustees investment strategies, we plan to stay solvent.

The Fuel Division is a living organization, and as such, changes to keep up with the times. Some of these changes are already under discussion such as the need for Preprints. Others will be coming. I want to assure everyone that these changes are intended to keep Fuel as a top notch Division and are not undertaken without the input from the Fuel membership. I encourage members to attend the Business Meetings and take an active interest in the Division.

Thank you,



Charles E. Taylor
2009 Chair, Division of Fuel Chemistry

Awards



Akira Tomita wins the 2009 Henry H. Storch Award

Professor Akira Tomita of Tohoku University is the recipient of the 2009 Henry H. Storch Award in Fuel Chemistry sponsored by the Division of Fuel Chemistry, ACS and by Elsevier Ltd. Henry H. Storch Award is given annually to an individual who has made outstanding contributions to research in the field of fuel science. Special consideration is given to innovation and novelty in the use of fuels, characterization of fuels, and advances in fuel chemistry that benefit the public welfare or the environment. Prof. Tomita has made outstanding contributions to fuel chemistry research with admirable innovations that have impacted several fields including catalysis, adsorption, coal and carbon gasification, coal pyrolysis, microscopic and spectroscopic characterizations of coals and related materials, synthesis of carbon materials, and environmental impact of fuel utilization. He has been a pillar of strength in integrity, quality, and elegant methodology for scientific research in fuel chemistry.

Over the last decade, Prof. Tomita has conducted innovative research programs on the synthesis of microporous carbons with

nanostructures and NO_x reduction by carbons. His earlier pioneering contributions to fuel chemistry research include understanding the role of coulombic interactions in adsorption, the understanding of the carbon-hydrogen reaction, and the scientific and engineering aspects of catalytic coal and carbon gasification. More recently he has been a pioneer in advancing the understanding of gasification mechanisms by tandem use of the most advanced experimental and theoretical techniques, combining thermal desorption and transient kinetics with *ab initio* computational chemistry. His contributions to unraveling the intricacies of coal pyrolysis have also been of great importance. In a series of important papers over many years, Prof. Tomita has demonstrated how powerful techniques (especially HRTEM) can be used for meaningful and insightful fuel characterization.

Prof. Tomita's service on the editorial boards of *Fuel*, *Carbon* and *Fuel Processing Technology*, his leadership role in the *Institute of Energy of Japan*, his most recent distinguished responsibility as a Principal Editor of *Fuel*, as well as his active participation at and/or organization of many symposia of the *Fuel Chemistry Division* and the *Gordon Conference on Hydrocarbon Resources*, are a clear testimony of his commitment to the authoritative dissemination and archiving of fuel chemistry knowledge for the benefit of the American Chemical Society and the international scientific and engineering community.

Prof. Tomita's illustrious research career has been exemplified with 197 original peer reviewed papers, 37 review papers, 13 book contributions, and 23 patents. His lucid presentations and great generosity in sharing his knowledge have inspired many researchers. With his openness and his

exceeding modesty, Professor Tomita has inspired many other scientists and engineers in their research.

Glen Award: The Glen Award for the best paper from the Spring meeting in New Orleans (2008): 'Fuel chemistry modeling across the scales from individual molecules of engine simulations' by Sandeep Sarma, C. Franklin Goldsmith, Teppei Ogura, Michael R. Harper, Gregory R. Magoon, Huzeifa Ismail, John P. Angelos, and William H. Green Jr.

ACS Fellow: Randy Winans was elected to the 2009 class of Fellows of the American Chemical Society. The 2009 ACS Fellows will be honored at a special ceremony during the ACS National Meeting in Washington, D.C. on Monday, August 17, 2009.

Upcoming ACS Meeting Multidisciplinary Programming themes

- Fall 2009, Washington, D. C.: Chemistry and Global Security: Challenges and Opportunities
- Spring 2010, San Francisco: Green chemistry for a sustainable world
- Fall 2010, Boston: Chemistry to combat and prevent disease

If you would like to have an announcement added to the Fuel Newsletter, please contact Michelle Kidder, kidderm@ornl.gov
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2010 Fuel Division Program of American Chemical Society (ACS)

239th ACS National Meeting & Exposition, March 21-25, 2010, San Francisco, CA
Online submission of abstract (200 word) and preprint paper (2 Pages) via ACS Website <http://oasys.acs.org/> started from August 24, 2009. Instruction for preprint papers available online at <http://www.anl.gov/PCS/acsfuels>. Deadline for abstract and preprint submission is Oct. 19, 2009

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240th ACS National Meeting & Exposition, August 22-26, 2010, Boston, MA

Online submission of abstract (200 word) and preprint paper (2 Pages) via ACS Website <http://oasys.acs.org/> started from January 25, 2010. Instruction for preprint papers available online at <http://www.anl.gov/PCS/acsfuels>. Deadline for abstract and preprint is **March 22, 2010**

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Storch Award Symposium – to be organized by the winner

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2011 Fuel Division Program of the American Chemical Society (ACS)

241st ACS National Meeting & Exposition. March 27-31, 2011, Anaheim, California

ACS Theme: Chemistry of Natural Resources: Feeding a Hungry World

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Gas Hydrates, Clathrates and Alternative Energy Sources: Production and Processing Chemistry - Prof. Amadeu K. Sum, Center for Hydrate Research, Department of Chemical Engineering, Colorado School of Mines, Golden, CO 80401-1887; E-mail: asum@mines.edu; Phone: 303.273-3873 / Fax: 303.273-3730
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Heavy Oils, Resids and Bitumen: Upgrading Chemistry and Process - Dr. John F. Schabron, Western Research Institute, University of Wyoming Research Corporation, 365 North 9th Street, Laramie, WY 82072. 307-721-2445, E-mail: JFSchabr@uwyo.edu

Solar Energy Conversion and Utilization for Fuels and Energy Production - Prof. Ranjit T. Koodali, Department of Chemistry University of South Dakota Vermillion, SD 57069 USA, E-mail: Ranjit.Koodali@usd.edu. Tel.: 1-605-677-6189; Fax: 1-605-677-6397.
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CO₂ Capture, Sequestration, Conversion and Utilization - Prof. Chunshan Song,
Department of Energy & Mineral Engineering, and Chemical Engineering, The
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Ultraclean Fuels Production and Utilization for Sustainable Transportation - Dr. Elise B. Fox, Savannah River National Lab, Materials Science & Technology, Aiken, SC 29808,
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Carbon Nanomaterials and Nanotechnology in Fuels and Energy Production - Prof. Liming Dai, Materials Engineering and Chemistry, Wright Brothers Institute
Endowed Chair in Nanomaterials, Department of Chemical and Materials Engineering,
School of Engineering, Department of Chemistry, College of Arts and Sciences, University
of Dayton, 300 College Park, Dayton, Ohio 45469-0240, Tel. 937-229-2670 (direct); 937-
229-2679 (secretary); Fax. 937-229-3433, Email: ldai@udayton.edu.

Spectroscopic Techniques to Elucidate Reaction Mechanisms and Structure-Activity Relationships in Fuel and Energy Science

Advances in Membranes and Separation Science and Technology for Fuels and Energy Production Dr. Lora Toy, RTI International, Center for Energy Technology, 3040
Cornwallis Road, Research Triangle Park, NC 27709-2194, Tel.: (919) 316-3393, Fax:
(919) 541-8002, E-mail: ltoy@rti.org

Advances in Analytical Characterization of Hydrocarbon Resources - (Tentative) Dr. Sam Hsu, BP Products North America Inc., Refining Technology, 150
West Warrenville Road, Naperville, IL 60563, USA, *Voice: 630 420-543; E-mail:*
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Chemistry of Nuclear Fuels in Energy Production

General papers in Chemistry of Fuels and Energy - Velu Subramani, BP Products
North America Inc., Refining Technology, West Warrenville Road, Naperville, IL 60563,
USA, *Voice: 630-420-5583, E-mail: velu.subramani@bp.com*

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Fall 2011 Fuel Division Program

Program Chair: Dr. Velu Subramani, BP Products North America, Inc. 150 West Warrenville Road Naperville, IL 60563. E-mail: velu.subramani@bp.com Phone: 630-420-5583 (Desk)

Contaminant, Air Toxics and Emission Control Technologies for Clean Fuels and Energy Production and Utilization

Water and Renewable Fuels for Clean and Sustainable Energy Production

Coal and Alternative Hydrocarbon Sources for Clean Fuels, Chemicals and Energy Production

Greenhouse Gas Emissions: Control, Conversion and Utilization for Fuels and Energy Production

Hydrogen and Syngas: Production and Conversion Technologies for Fuels, Chemicals and Energy Production - Dr. Velu Subramani, BP Products North America Inc., Refining Technology, 150 West Warrenville Road, Naperville, IL 60563, USA, *Voice:* 630-420-5583, *E-mail:* velu.subramani@bp.com

Computational Methods and Modeling in Fuel Science

Advances in Hydrotreating and Hydrocracking technologies

Hydrogen Storage: Advances and Future Challenges

Fuel Cells: Current Status and Future Challenge - Dr. Elise B. Fox, Savannah River National Lab, Materials Science & Technology, Aiken, SC 29808, E-mail: elise.fox@srl.doe.gov. Phone: (803)507-8560 or 725-3240.

Chemistry of Coke and Carbon Deposition in Fuel Production and Processing

General Papers in Chemistry of Fuels and Energy - Dr. Velu Subramani, BP Products North America Inc., Refining Technology, 150 West Warrenville Road, Naperville, IL 60563, USA, *Voice:* 630-420-5583, *E-mail:* velu.subramani@bp.com

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