

The  
**North American Catalysis Society**



## NEWSLETTER

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### Application for NSF Sponsored Kokes Awards

Besides the funds that the NACS donates for Kokes Awards (student travel awards), the NSF has now added additional funds. A grant to assist student attendance at the North American Catalysis Society (NACS) Meeting in Cancun, Mexico has been awarded by The National Science Foundation. The date of the meeting is from June 1-6th, 2003. These particular funds will be administered by Tulane University, New Orleans, La. Those who already sent their application to the NAM organizers in Cancun should not have to send another one to Professor Gonzalez. Successful awardees for this NSF money must meet the following criteria: (i) they should be graduate students in good standing at an academic institution in the United States, (ii) preference will be given to students with an accepted oral or poster paper and, (iii) students will be expected to participate in as many technical sessions as possible. Interested candidates for these awards should submit an application to Professor Richard D. Gonzalez, Department of Chemical Engineering, Tulane University, New Orleans, La 70118. Tulane University is an Affirmative Action Employer and is committed to ethnic diversity including minority applicants. If awarded, these grants may be used only for transportation to and from Cancun and for hotel occupancy. The deadline date for receipt of any new NSF supported applications is April 30, 2003; this deadline is a little later than the NAM sponsored Kokes Award dates for the same purpose, which was based on earlier funding by the North American Catalysis Society. The award panels for both the NSF and NACS sponsored Kokes awards will be working together.

### Alex Bell Awarded 2003 Robert Burwell Lectureship in Catalysis

Professor Alexis T. Bell has been awarded the 2003 Robert Burwell Lectureship in Catalysis by the North American Catalysis Society. The Lectureship is sponsored by Johnson Matthey PLC's Catalysts and Chemicals Division and is given in recognition of substantial contributions to one or more areas in the field of catalysis with emphasis on discovery and understanding of catalytic phenomena, catalytic reaction mechanisms and identification and description of catalytic sites and species. His research activities have led to more than 400 publications in the most prestigious journals in catalysis, chemistry and chemical engineering. Over many years he has applied cutting-edge spectroscopy and theory to study surfaces before and after catalytic reactions. His nominators offered some of the following remarks. His earlier work with Professor Doros Theodorou pioneered the application of statistical mechanics and molecular dynamics for predicting the adsorption and diffusion of molecules in zeolites. This represented one of the first quantitative applications of theoretical methods to systems of direct catalytic relevance. Later his work with Professor Arup Chakraborty succeeded in using quantum mechanical calculations to determine the siting and stability of metal cations exchanged into zeolites. In the area of Fischer-Tropsch synthesis, his elegant use of in situ infrared methods, surface science techniques, and isotopic switch methods led to a mechanistic picture of "unprecedented clarity and relevance." Rate constants for elementary steps and the identity and reactivity of specific adsorbed intermediates were measured and ultimately used to elucidate the underlying structure-function relations for chain growth as well as the operative basis for widely reported strong meta-supported interactions. His studies have led to demonstration of a novel bifunctional mechanism for methanol synthesis and leads to strong effects of Lewis acidity and basicity of ZrO<sub>2</sub> on activity and selectivity.

He has also made significant contributions in the area of zeolite catalysis by elucidating the mechanism of both the synthesis and function of these heterogeneous catalysts. Together with Professor Clay Radke, the application of NMR methods led to the direct observation of the structure-directing role of organic and inorganic cations

during synthesis and to a clear mechanistic picture of their self-assembly in complex solutions and gels. A combination of kinetic, infrared, isotopic and theoretical studies also led to a clearer mechanistic and structural picture of the nature of exchanged cations in zeolites and their involvement in forming and stabilizing reactive intermediates in the reduction of NO by hydrocarbons.

In the area of metal oxides, Alex pioneered the use of Raman spectroscopy for the structural characterization of dispersed structures. His applications of these methods to the characterization of oxidative dehydrogenation catalysts led to specific assignments of site reactivity and to a comprehensive picture of the mechanism and site requirements for desired and undesired reactions of alkanes on dispersed oxides. More recently, working in collaboration with Professor Enrique Iglesia, he has also explored the use of in situ UV-visible and X-ray absorption spectroscopy in measuring the number of active sites and reduced centers during alkane oxidation reactions.

Throughout all this work, Alex has repeatedly demonstrated a natural talent that allows him to translate his research on catalytic phenomena, catalytic reaction mechanisms, and the identification and description of catalytic sites for a wide range of chemistries into understandable terms for his audience. The lectureship comes with an honorarium and travel stipend that will allow him to visit many of the local clubs of the North American Catalysis Society in order to stimulate both young and old minds to the marvels of catalysis.

## Changes Proposed to NACS Bylaws

The Board of Directors of the North American Catalysis Society has discussed, edited, and accepted the proposed changes to the bylaws. Our bylaws also require that any changes to them be voted on by the membership of the NACS, which we shall do at the beginning of the Cancun meeting. These changes are mainly proposed to reflect modest changes in the operations of the NACS since the last bylaws were adopted (1995). The Board of Directors is responsible for the management of the NACS and the President of the NACS is the CEO of the NACS. Provisions exist for making procedural changes to the way the NACS operates, but these often don't get added to the bylaws; this new set of bylaws reflects the way the Society is currently operating. The entire set of bylaws (10 pages with 25 Articles) is posted on the web site for all to review; I will only discuss the procedural changes made to the 1995 bylaws. – John Armor

**Article II, section 6** describes the status of Associate (non-voting) members.

**Article II, section 7 and Article XI, section 3** defines the legal and tax status of the NACS and its clubs.

**Article VII**, describes financial bonding of the officers and the trustees.

**Article VIII, section 1** extends the number of voting members of the Board of Directors, while Article XV, sections 2 and 3 define voting procedures at the Board meetings.

**Article XIII, section 1 and Article XVII, section 1** describe the appointment of a Nominating Committee for election of officers. **Section 5** elaborates the line of ascension in the event the President can no longer serve.

**Article XVII, sections 3 and 4** describes the composition and operation of the Executive Committee.

**Article XVII, section 5 and Article XXII** describes the composition and selection of the Awards Committee.

**Article XXIII** describes the Keith Hall Educational Fund.

**Articles XXIV and XXV** are added at the suggestion of our attorney to meet laws of incorporation.

## Local Clubs Articles of Incorporation

Working with the law firm of Polsinelli, Shalton & Welte, we've made progress on the Board approved action to provide generic documentation to our US based local clubs/societies to help them prepare their own articles of incorporation/by-laws and apply for tax exempt status. The Chicago Club has been incorporated and is in the final steps of preparing the necessary documents for tax exempt status. The New York Society's Articles of Incorporation/By-laws are now complete pending review of final changes. The plan is then to use New York's articles/by-laws as the template for all other clubs/societies wishing to incorporate under tax exempt status. In order to streamline the process and to keep the costs within budget, only those minor changes necessary to "personalize" this generic document re: differences in each local organizational structure will be made. At present, the only other club/society expressing interest is the Philadelphia Club. Any other clubs/societies

interested in incorporating under tax exempt status should contact John Byrne (john.byrne@engelhard.com or 732-205-5153) for further information.

## The 18th North American Catalysis Society Meeting

The 18th North American Catalysis Society Meeting will be held at the Fiesta Americana Grand Coral Beach Hotel in Cancún, México, on June 1-6, 2003. The early registration period will run from February 3 until March 31, 2003. Details of the registration process are posted on the Cancun meeting web site. The Richard J. Kokes Student Travel Award will provide financial assistance to a limited number of eligible full time graduate students, who are co-authors of accepted papers. Details for application are posted on the web site. For the full technical program, on-line hotel and meeting registration and additional travel information is on the web site: [www.18nam.org](http://www.18nam.org). For special inquiries about the meeting: [18nam@fisica.unam.mx](mailto:18nam@fisica.unam.mx). **Remember to check the web site for additional updates and tips on travel in the Cancun area.**

## International Catalysis Award

The International Catalysis Award is sponsored by the International Association of Catalysis Societies. It will be awarded once every four years, in the year before the next International of Catalysis, which occurs every leap year. It consists of a certificate and financial reward, which will be presented to the recipient during the ICC following the awarding year. The financial remuneration shall be equal to ten times the registration fee of that International Congress of Catalysis. The purpose of this Award is to recognise and encourage individual contributions by a young person in the field of Catalysis, such as the discovery of the significant improvement of a catalytic process, or an important contribution to the understanding of catalytic phenomena.

Selection of the recipient will be made by an International Committee composed of renowned scientists or engineers, appointed by the President of the International Association of Catalysis Societies, subsequent to proposals from the Executive Committee of the International Association of Catalysis Societies. Selection will be made without regard to nationality or affiliation. The recipient must not have passed her/his 45th birthday by May 1 of the award year. Posthumous awards will be made only when knowledge of the winner's death is received after the announcement of the International Committee's decision.

Nomination of the award should be made before September 1 in the year preceding an International Congress on Catalysis (i.e. September 1, 2003 for the 13th ICC Award), and should include a critical evaluation of the significance of the nominee's published work, as well as a statement about the particular contribution on which the nomination is based. Nominations should also include the nominee's qualifications, accomplishments and biography. Nomination documents, along with no more than two letters of support, should be submitted in seven copies to the President of the International Association of Catalysis Societies. The recipient will be required to give a lecture on her/his research as part of the International Congress on Catalysis at which the award is conferred (i.e. 13th ICC, July 11-16, 2004). -Michel Che, President of the International Association of Catalysis Societies, Laboratoire de Réactivité de Surface et Structure, Université Pierre et Marie Curie 4, place Jussieu Tour 54-55, 2e Etage, F-75252 PARIS Cedex 05, France, [che@ccr.jussieu.fr](mailto:che@ccr.jussieu.fr), [president@iacs-icc.org](mailto:president@iacs-icc.org)  
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## Club/Society News

**Organic Reactions Catalysis Society.** The 20th Conference on Catalysis of Organic Reactions will be held on March 21 - 25, 2004 in Hilton Head Island, South Carolina. Abstracts are requested for paper and poster presentations. One-page abstracts should include title, presenting author contact information and description/

illustrations of research. Submit abstracts directly to Professor John R. Sowa, Jr., Department of Chemistry and Biochemistry, 400 South Orange Ave., South Orange, NJ 07079, [sowajohn@shu.edu](mailto:sowajohn@shu.edu) or FAX: 973-761-9772. Deadline for abstracts is July 1st, 2003. Please consult the ORCS web-site for additional information:

[www.orcs.org](http://www.orcs.org). The Society invites its members to make nominations for the Paul Rylander Award and the Murray Raney Award. For additional information and a list of previous award winners, please see [www.orcs.org/html/call\\_for\\_awards.html](http://www.orcs.org/html/call_for_awards.html).

**The Catalysis Club of Philadelphia**  
The club resumes its speaker

schedule: April 10, Peter Stair, Northwestern University; May 22, Spring Symposium, University of Delaware. Student poster award winners at the January meeting were Neetha Khan, University of Delaware, first place; Joseph E. Remias, Penn State, second place, and John Kitchin, University of Delaware, third place. **The Spring Symposium** will be held on May 22, 2003 at Clayton Hall, University of Delaware. Eight invited speakers will present (Leo Manzer, Dupont; Prakash Balan, Mixing and Mass Transfer Technologies; Yongkui Sun, Merck; Neetha Khan, University of Delaware; Jinguang Chen, University of Delaware; Gary McVicker, ExxonMobil; Steve Schmidt, Grace; Allan Russel, University of Pittsburgh). Contact Hasan Dindi; hasan.dindi@usa.dupont.com

**The Catalysis Society of Metropolitan New York.** The remaining speaker schedule is: April 16, 2003, **Mark Davis**, Caltech; May 21, 2003, **Excellence in Catalysis Award** Lecture. The Society held its Spring Symposium on March 21 at IMBT Laboratory Auditorium Lehigh University, (Mountaintop Campus) Bethlehem, Pennsylvania. Ten presentations were made including the Keynote Address by Bala Subramaniam, Department of Chemical and Petroleum Engineering, University of Kansas, "Exploiting Near-Critical

Carbon Dioxide in Catalysis". In addition 22 posters were presented.

**The Catalysis Club of Chicago** is pleased to announce that the 2002 **Herman Pines Award** in Catalysis is presented to **Professor James Dumesic**, University of Wisconsin. First Call for Abstracts - Spring Symposium May 20, 2003 Norris Center - Northwestern University (DEADLINE for ABSTRACTS - May 5, 2002). The **2003 Spring Symposium** of the Catalysis Club of Chicago will be held on May 20, 2003 at the Norris Center Northwestern University. The two keynote addresses are: 1. by **James A. Dumesic** (University of Wisconsin), recipient of the 2003 **Herman Pines Award**, and 2. Kenneth N. Raymond (University of California, Berkeley). Abstracts will be considered for both oral and poster presentations. There will also be a student poster competition with 2 cash awards of \$100 (sorry, post-docs are not eligible). To encourage multiple entries by research groups, each student/post-doc presenter (oral or poster, first author only) will receive free admittance to the Symposium. Send (email only please: chunahn@northwestern.edu) a one page abstract by May 5, 2003 to: Professor Kenneth Poepfelmeier Program Chair, Catalysis Club of Chicago Attn: Ms. Chun Ahn, Northwestern University.

May 16-19, 2004, **18th Canadian Symposium on Catalysis**, Montreal, Quebec, Canada, Hôtel Wyndham

Montreal. Dedicated to all aspects of catalysis, the biennial Canadian Symposia on Catalysis serve as forums for showcasing the latest developments in the field of catalysis, promoting exchange of interdisciplinary ideas, and stimulating new directions. The 18th CSC will focus, but won't be limited to, the following topics: Application of surface science in catalysis, polymerization catalysis, the role of catalysis in green chemistry, fuel cells and fuel processors, unsteady catalytic processes, environmental catalysis, photocatalysis, hydroprocessing and refining, and oxidation reactions. contact: Dr. Jitka Kirchnerova, Chair, 18th CSC Organizing Committee, Ecole Polytechnique, Montreal, Quebec, Canada, (514) 340-4711 ext. 3359, e-mail: jitka.kirchnerova@polymtl.ca, or 18csc2004@polymtl.ca. www.polymtl.ca/18CSC2004

**Tri-State Catalysis Society** - Spring Symposium May 12 - 13, 2003, Lexington, KY, Four Point Sheraton 1938 Stanton Way. Key Note Speakers: John Gobey -TORIAL (Combinatorial Chemistry, Joint Venture by UOP and SINTEF), Frank Lomax - H2Gen (Fuel Cells) Stephen Pennycook - Oak Ridge National Laboratory (Advanced TEM for Catalysis). Contact Uschi Graham: graham@caer.uky.edu

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This Newsletter is a publication of The North American Catalysis Society, President: Dr. John N. Armor, Air Products & Chemicals; V. President: Dr. Gary McVicker, ExxonMobil; Secretary: Dr. Umit S. Ozkan, Chemical Engineering Dept, Ohio State University, Columbus, Ohio 43210, ozkan.1@osu.edu; Treasurer: Dr. John W. Byrne, Engelhard; Past President: Dr. M. Albert Vannice, Penn State Univ.; Directors-at-Large: Dr. Bruce Gates, UC, Davis, Dr. John Armor, Air Products & Chemicals, Dr. Gary McVicker, Exxon, Dr. Kathleen Taylor. Club Representatives: California-Dr. E. Iglesia; Canada-Dr. C. A. Mims; Chicago-Dr. G. Antos; Mexico-Dr. M. Viniegra; Michigan-Dr. G. Fisher; New England-Dr. W.C. Conner; New York-Dr. J. Byrne; Philadelphia-Dr. A. Gaffney; Pittsburgh/Cleveland-Dr. D. Dadyburjor; Organic Reactions-Dr. S. E. Jacobson; Southwest-Dr. B. D. Murray; Tri-State-Dr. P. Doolin; Western States-Dr. A. Datye. Contributions for the Newsletter should be directed to the Editor, Dr. Michael B. D'Amore, DuPont Company, P.O. Box 80262, Experimental Station, Wilmington DE 19880-0262, Ph: (302) 695-2488, Fax: (302) 695-8347, E-mail: michael.b.damore@usa.dupont.com. Society Web address [www.nacatsoc.org](http://www.nacatsoc.org).