

The
North American Catalysis Society

NEWSLETTER

June, 2002

<http://www.nacatsoc.org>

Vol. XXXVI No. 1

Message from President Armor

From our recent Board of Director's meeting in Orlando (April 2002), it is clear that the NACS is a strong and dynamic organization. We continue focused on supporting educational activities for catalysis in North America. We provided a group of student travel awards to the recent Organic Reactions Catalysis biennial meeting this Spring. Early this year it was announced that John Monnier of Eastman Chemicals received the Ciapetta Lecture Award, and he is prepared to give lectures at the local clubs as part of that award. We continue preparing for the next biennial meeting of NACS which will be in sunny Cancun, Mexico in June of 2003. Progress is also occurring on the organization of the following NAM meeting in Philadelphia in 2005, under the leadership of Anne Gaffney (Rohm & Haas). The Society is funding an attorney to provide templates for the local clubs to get a US Federal tax free exemption. Interested clubs should contact our treasurer, John Byrne.

Other actions at the Board meeting included: adoption by the Board of amended By-Laws which will be voted upon at the Cancun meeting by the entire membership. Members will receive more information on this in the coming months. We also received the concluding financials report of the last NAM meeting in Toronto. This was an extremely successful meeting which also generated unexpected proceeds which have been placed in the Keith Hall Educational Fund for advancing the educational purposes of the Society. The volunteers from Canada put in a great deal of effort into the operation of this meeting and they all deserve a big vote of thanks from the membership.

Pat Doolin has completed her very successful term as Lead Trustee of the Keith Hall Educational Trust. She asked to step down with the end of her 6-year term. The Society owes her a debt of thanks for her years of diligent work in building the corpus of this fund. John Byrne has agreed to assume her role and will work closely with the other trustees: Dick Gonzalez and Bob Garten.

Let me update you on our new web site. The activity, as measured by hits to the site (nacatsoc.org) has been remarkable. We are continuing to see increases in the monthly number of queries to the site (now at over 1000/month). Quite a few of these are requests by others new to the Society asking about joining as members. The web site also offers a wide variety of background information about the Society, catalysis, and the organization of the NACS. It also offers an up-to-date calendar of future professional meetings to serve the educational needs of the membership and to aide organizers planning new meetings in the hopes of avoiding conflicts in scheduling.

In the next few months, the Society will be receiving nominations for 3 other prominent professional and educational awards: Emmett Award, Houdry Award and the Burwell Lectureship. One can learn more about these awards from the folder on the web site. Consider nominating a deserving colleague; instructions are on the web site.

I welcome your suggestions and participation in the operation of OUR Society. Drop me an email message anytime at armorjn@apci.com or cbarmor@enter.net.

John Armor, President
May 24, 2002

Gordon Research Conference on Catalysis

June 23-28, 2002

Colby-Sawyer College

New London, NH

<http://www.grc.org/programs/2002/catal.htm>

Chair: Jingguang Chen

Vice-Chair: Peter Stair

Sunday Evening

Prof. Hans-Joachim Freund: Model Systems for Catalysis: The Atomic Dimension

Monday Morning

Prof. Enrique Iglesia: Acid and Redox Catalysis on Oxide Nanostructures
Prof. Ted Oyama: Highly Active Hydrotreating Phosphide Catalysts
Prof. Jackie Ying: Nanostructure Processing of Advanced Catalytic Materials

Monday Evening

Prof. Tobin Marks: Homogeneous Meets Heterogeneous Catalysis: The Case of Single Site and Multiple Site Olefin Polymerization Catalysis

Poster session

Tuesday Morning

Prof. Cynthia Friend: Hydrocarbon Reactions on Metals and Metal Oxides: Radical Clocks as a Probe of Mechanism
Prof. Jens Norskov: Universality in Heterogeneous Catalysis
Prof. Suzanne Harris: Transition Metal Carbides and Nitrides: Relating Structure, Bonding and Catalytic Activity

Tuesday Evening

Prof. Bruce Gates: Catalysts in Action: Ligand Effects of Supports and Reaction Intermediates in Catalysis by Metal Clusters

Poster session

Wednesday Morning

Prof. Andrew Gellman: Enantioselectivity Chemistry on Naturally Chiral Surfaces
Dr. Yongkui Sun: Some Recent Trends in Heterogeneous Catalysis for Organic Synthesis
Dr. Dino Kourtakis: Electrocatalyst Design for Fuel Cell Applications

Wednesday Evening

Dr. Galen Fisher: Novel Technology for NO_x Removal

Poster Session

Thursday Morning

Dr. Jeffrey Dysard: Distillate Quality Upgrading
Prof. Fabio Ribeiro: Hydrodechlorination on Palladium Catalysts
Prof. Charles Mims: Life on a Crowded Surface: Isotopic Transient Studies of Cobalt Catalyzed F-T Synthesis Under Elevated Pressure Conditions

Thursday Evening

Prof. Gabor Somorjai: The Evolution of Catalysis and Surface Chemistry from the Times of Taylor and Langmuir to the 21st Century

John Monnier is Ciapetta Lecturer

Dr. John Monnier [jmonnier@eastman.com] of Eastman Chemical Company, Kingsport, TN has been awarded the 2002 F.G. Ciapetta Lectureship in Catalysis. This is one of 4 major awards for technical excellence the North American Catalysis Society provides every 2 years, and this award is cosponsored by the Davison Chemical Division of W.R. Grace & Company and The North American Catalysis Society. Dr. Monnier is being recognized for his pioneering work in catalysis research and process development on the epoxidation of butadiene and other non-allylic olefins with supported silver catalysts. This research has led to the identification of over 100 new applications for epoxybutene and its derivatives. In 1996, Eastman Chemical brought on line a 3 million lbs/yr plant to supply 5 new epoxybutene derivatives to the pharmaceutical and agricultural markets.

The Society administers this Lectureship. It is awarded biennially in even numbered years, and the Award consists of a plaque and an honorarium of \$5,000. An additional \$4,500 is available from the Society to cover traveling expenses. The honorarium is provided completely by Davison. Dr. Monnier is invited to (1) visit and lecture to each of the affiliated Clubs/Societies with which mutually satisfactory arrangements can be made and (2) prepare a review paper(s) for publication covering these Lectures.

Burt Davis Recipient of the 2002 Henry H. Storch Award

The University of Kentucky Center for Applied Energy Research is pleased to announce that Associate Director Dr. Burtron H. Davis is the recipient of the American Chemical Society's 2002 Henry H. Storch Award in Fuel Chemistry. The award recognizes distinguished contributions to fundamental or engineering research on the chemistry and utilization of coal or related materials, over the previous five years. The presentation was made at the ACS National Meeting in Orlando, FL.

Burt Davis graduated with a B.S. in chemistry from West Virginia University in 1959 followed by a M.S., from St. Joseph's College (Philadelphia) and a Ph.D. from the University of Florida. He did his postdoctoral work under Paul Emmett at Johns Hopkins from 1965-66. This was followed by a period of research with Mobil R&D Corporation, where he worked on naphtha reforming and aromatics hydrogenation. After working for Mobil, he returned to academia where he held the appointment of Associate Professor of Chemistry, Potomac State College, WVA from 1970-77. In 1977 he joined the staff of the Center for Applied Energy Research.

At the CAER he is responsible for developing a program in catalysis, Fischer-Tropsch synthesis, surface science studies, clean gasoline reforming with superacid catalysts, upgrading naphthas and direct coal liquefaction. This program involves both academic research and cooperative research with industry. He has developed a laboratory with extensive capabilities using radioactive and stable isotopes in reaction mechanism studies and materials characterization. Dr. Davis is an active member of several divisions of the American Chemical Society: Fuel, Colloid and Surface Chemistry, Petroleum and History of Chemistry. Apart from his wide interests in direct and indirect coal liquefaction, catalysis in coal conversion, and synfuels production, he is responsible for videotaping about 2,000 historical figures in science. This 'hobby' has documented some of the greatest scientists of the last century, thus securing a lasting archive of valuable information that would have otherwise been lost. Dr. Davis is the author or coauthor of more than 400 publications.

Gabor Somorjai Receives National Medal of Science

Gabor Somorjai, Professor of Chemistry at the University of California, Berkeley was among a group of 15 recipients of the US National Medal of Science. This is the highest award for science and is presented by President Bush. As Rita Colwell, director of the National Science Foundation, said in 1998 "These are superstars in their respective fields. They've contributed a lifetime of stunning discoveries. We can only recognize them once with a science medal, but we applaud them daily for their continual contributions to humankind, to the reservoir of scientific knowledge and for the impact they have on the students they mentor and educate along the way." He has also been named University Professor at Berkeley. He becomes only the 23rd individual in the

entire University of California system to be honored with this prestigious title. Previous holders of this distinction include Glenn T. Seaborg and Melvin Calvin.

Israel Wachs Receives 2001 Clean Air Excellence Award

Professor Israel Wachs of Lehigh University's Chemical Engineering Department has received a 2001 Clean Air Excellence Award. The EPA 2001 Clean Air Excellence Awards program honors outstanding, innovative efforts that help to make progress in achieving cleaner air. The research, sponsored by Georgia-Pacific Corp., has provided the pulp industry with a potentially profitable and innovative third alternative method of processing their waste gases. Using a new process and catalyst developed at Lehigh, the methyl alcohol and mercaptans can be converted to formaldehyde, a building-block chemical used for the adhesives, which find application in the plywood industry. [See www.pollutionengineering.com or N. Moretti's article in *Pollution Engineering*, Jan. 2002, pp 24-28]. The waste gases are simply processed through a plant, which is similar in design to a conventional formaldehyde plant that utilizes commercial-grade methyl alcohol as a feed material. The novel environmentally benign process was conceptually developed and experimentally proven on a laboratory scale (see US Patent Nos. 5,907,066 and 6,198,005 B1 to I.E. Wachs/Lehigh University). The pilot plant studies were performed at Georgia-Pacific's Brunswick, GA pulp mill on the real industrial waste streams.

Your Input is Needed!

Catalyst Discussion-Room/Bulletin-Board... Our new website has many new features, including a place for all members of the catalytic community to exchange ideas and request information. If you follow the links to the DISCUSSION ROOM off the first page you will be able to leave questions or comments about catalysis, search for information (references) as well as to post/view employment/postdoctoral opportunities. There is also a place to provide your input and suggestions as to the whole website as well as the topics or organization of the Bulletin Board itself.

Information for the Website.... Our website can also provide general information about catalysis for the public. The purpose is to increase understanding of its significance and needs for support. This include the history of our science/engineering as well as information and news. We welcome input from all sources. Do you have a short write up about a topic in catalysis (maybe from a course in catalysis) ? Do you have a biography of a noted catalytic scientist? Do you have a picture/micrograph relevant to catalytic science/engineering? Pictures are particularly appreciated as they add considerably to the presentation !!! Please let us know through the Bulletin Board or by email: nacs@chief.ecs.umass.edu.

Club/Society News

The Michigan Catalysis Society announces that **Thomas J. Pinnavaia**, the University Distinguished Professor, Michigan State University, has been selected as the winner of the 2002 Giuseppe Parravano Memorial Awards. Professor Pinnavaia gave the award lecture at the 24th annual spring symposium of the Michigan Catalysis Society: "Mesostructured Aluminosilicate Catalysts with Improved Accessibility, Acidity and Hydrothermal Stability". The 24th annual spring symposium organized by the Michigan Catalysis Society was held on Wednesday,

May 15 at the Kettering University in Flint, Michigan. The symposium featured the Parravano award and the F.G. Ciapetta Lectureship in Catalysis Award Lecture by Dr. John Monnier, Research Fellow, Eastman Chemical Company, on the "Roles of Alkali and Halide Promoters for the Ag-Catalyzed Epoxidation of Butadiene". Presentations on the fundamentals of catalytic materials preparation, characterization, and mechanistic studies were given by students from Michigan State University, The University of Michigan, as well as researchers at the Dow Chemical

Company. Another featured topic in this symposium was the lean NO_x treatment for vehicles using plasma catalytic process. Researchers from Ford Research Labs and Delphi Research Labs discussed their recent findings on this challenging problem.

The Pittsburgh-Cleveland Catalysis Society held its 40th Spring Symposium on May 10, 2002 in Monroeville, PA. Featured speakers were Professor Israel E. Wachs (Lehigh University), winner of an EPA 2001 Clean Air Excellence Award; and Dr. Andrei Boronin

from the Institute of Catalysis in Novosibirsk. Winners of the student paper awards were Joshua D. Horvath from Carnegie Mellon University and Yelda Hangun-Balkir, also from Carnegie Mellon. Officers elected for 2002-2003 are Professor Andrew J. Gellman (Carnegie Mellon University), President; Professor Gregory Lowry (Carnegie Mellon University), President-Elect; Dr. Chuan-Bao Wang (Industrial Scientific Corporation), Treasurer; and Professor Edwin Kugler (West Virginia University); Secretary. Professor Dady B. Dadyburjor (West Virginia University) continues as Director.

The Catalysis Club of Philadelphia Announced that **Dr. Steven D. Ittel** of the Dupont Co is the recipient of the 2002 Catalysis Award for Catalysis for his exploratory research and technology development in the field of organometallic-complex catalysis. After earning a Ph.D. in Chemistry from Northwestern University, Dr. Ittel joined DuPont in 1974 and has, since, held a variety of scientific and managerial posts. At DuPont he worked toward commercialization of catalytic chain transfer polymerization and late transition metal olefin polymerization. The award was presented at its Spring Symposium on May 23, 2002 at the University of Delaware. Speakers were Jeff Miller, BP; Jochen Lautherbach, Purdue University; Andrew Gellman, Carnegie Mellon University; Long Pan, Rutgers University (co poster award winner with Haiming Liu, University of Pennsylvania); Thomas Beebe, Jr., University of Delaware; John Lockemeyer, Shell; Jeff Beck, ExxonMobil; Takeshi Egami, University of Pennsylvania.

The Catalysis Division, The Canadian Society.

Michael Baird is this year's CIC Catalysis Award Winner. He will receive a rhodium-plated silver medal and travel expenses to present the Award Lecture at the Canadian Symposium on Catalysis. Prof. Baird was born in Hamilton, Ont., and received an Hon. B.Sc. from McMaster University in 1962, an M.A. and a Ph.D. from the University of Toronto in 1963 and 1965, respectively. After two formative and extremely productive postdoctoral years with the late Geoffrey Wilkinson, at Imperial College, London, Mike returned to Canada in 1967 to a position at Queen's University. Here he has remained except for six-month in 1975 as a Humboldt Fellow in the laboratory of E.O. Fisher at the Technische Universität, München. He is currently Professor of Chemistry at Queen's, and was awarded the Queen's University Prize for Excellence in Research in the Physical and Applied Sciences in 1998. His research over the years has revolved around organotransition metal chemistry and catalysis, although he has on occasion delved into bioinorganic, medicinal and, currently, fullerene chemistry. He has worked with over fifty graduate students on research which has resulted in more than 200 publications and three patents, and was also awarded the Chemistry Departmental Student Council Prize for Excellence in Teaching in 1989 and 1994. He was elected a Fellow of the C.I.C. in 1978, and won the Alcan Lecture Award of the C.I.C. in 1986. The Catalysis Division of the Chemical Institute of Canada announces that **Professor Warren Piers**, Department of Chemistry, University of Calgary has been awarded the 2002 Canadian Catalysis Lectureship Award. In addition, **Professor Harold Kung**, Department of Chemical

Engineering, Northwestern University (Evanston, Ill) has been awarded the 2002 Cross-Canada Catalysis Lectureship Award. These awards are sponsored by the Canadian Catalysis Foundation, and consist of an honorarium and a travel grant to cover the costs of giving a series of lectures at universities and research institutes in Canada.

The 17th Canadian Symposium on Catalysis will be held in conjunction with the Canadian Society of Chemistry meeting in Vancouver on June 1-5, 2002. The conference will cover most aspects of heterogeneous and homogeneous catalysis, with a strong focus on environmental issues. www.ualberta.ca/CMENG/Csc2002/

The 2002 Tri-State Catalysis Society's Spring Symposium was held in Lexington, Kentucky on May 20-21. Keynote speakers were Dr. Umit Ozkan, Ohio State University; Dr. John Vohs, University of Pennsylvania, and Dr. John Monnier of Eastman Chemical Company. Chad Byrd of Virginia Polytechnic Institute & State University, Chang Liu of Ohio State University, and Lauren DePue of the University of Kentucky were winners in the poster session. Society officers were elected. Dr. Jurgen Ladebeck of Sud-Chemie Inc. is the new President, Prof. Peter Smirniotis of the University of Cincinnati is President-Elect, and Uschi Graham of the University of Kentucky, CAER is Secretary & Treasurer for the next two years.

The Catalysis Society of Metropolitan New York announces that **Professor Amir H. Hoveyda** of Boston College is the recipient of the 2002 Excellence in Catalysis Award. The award, sponsored by ExxonMobil Research and Engineering Company, recognizes Professor Hoveyda's discovery and

elucidation of transition metal-assisted enantioselective methodologies for organic synthesis, as well as his seminal contributions leading to the development of catalytic asymmetric ring-closing metathesis reactions, and the discovery of recyclable, dendritic Ru-based catalysts. Dr. Hoveyda's award lecture was entitled "New Catalytic Asymmetric C-C Bond Forming Reactions for Selective and Practical Organic & Combinatorial Synthesis" and was presented at the Somerset, NJ Marriott on Wednesday, May 29, 2002. The Society held its 2002 Spring Symposium on Friday, April 26, 2002 at Seton Hall University. Speakers were Stephen P. Kelty, Seton Hall University; Qifei Wu, Rutgers; Jorge Ramirez University of Mexico; Israel E. Wachs, Lehigh; Jayesh J. Nair, Seton Hall University; Robert J. McNair, Johnson Matthey; Shane W. Krska, Merck; Sanjay V. Malhotra, New Jersey Institute of Technology; Anthony Panarello, Rutgers; Colin L. Beswick, Engelhard.

The Catalysis Club of Chicago

is pleased to announce that the 2002 Herman Pines Award in Catalysis is

presented to **Dr. James Brazdil** of BP for his leadership in the development and commercialization of BP's ammoxidation technology. Dr. Brazdil and his research group are the recognized technology leaders in ammoxidation catalysis for acrylonitrile production, both for the commercial propylene-based process and the next generation propane-based process. He has also made significant contributions to the fundamental science of selective oxidation and ammoxidation catalysis. The 2002 Spring Symposium was held on May 20, 2002 at the Norris Center, Northwestern University, Evanston, IL. Keynote Speakers were Dr. James Brazdil (BP Corporation) - 2002 Pines Award Lecture, Professor Harold Kung (Northwestern University) and Professor Eduardo Wolfe (University of Notre Dame).

The Organic Reactions Catalysis Society The 19th Conference of the Organic Reactions Catalysis Society was held on April 14-18, 2002 in San Antonio, TX. Attendance was about 22 % lower than previous conferences attendance. Highlights of the meeting included making the

following awards: 2001 Rylander Award, **Francis J. Waller**, Air Products and Chemicals; 2002 Rylander Award, **Jerry R. Ebner**, Monsanto (Retired); 2002 Murray Raney Award, **Professor Akira Tai**, Professor Emeritus, Himeji Institute of Technology. The 20th meeting is scheduled for March 21-25, 2004 at Hilton Head SC. The chair for this meeting is Professor John Sowa, Seton Hall University.

The Southwest Catalysis Society held its Spring Symposium on April 19th, 2002 in the Auditorium of the Shell Oil Company's Bellaire Technology Center. Speakers were Dr. John Knifton, Shell Chemicals; Dr. John Monnier, Eastman Chemical Company; Prof. Dan Resasco, University of Oklahoma; Dr. Gert-Jan Gruter, Avantium Technologies B.V; Dr. Brendan Murray, Shell Chemicals LP; Dr. Tom Brownscombe, Shell Chemicals LP; Dr. Brooke L. Small, Chevron-Phillips Chemical Company LP.

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, General Motors. Club Representatives: California-Dr. E. Iglesia; Canada-Dr. C. A. Mims; Chicago-Dr. G. Antos; Mexico-Dr. G. Diaz; Michigan-Dr. G. Fisher; New England-Dr. W.C. Conner; New York-Dr. J. Byrne; Philadelphia-Dr. A. Gaffney; Pittsburgh/Cleveland-Dr. M. A. Vannice; Organic Reactions-Dr. S. E. Jacobson; Southwest-Dr. B. D. Murray; Tri-State-Dr. B. D. Davis; 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.