

THE NORTH AMERICAN CATALYSIS SOCIETY



NEWSLETTER

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First Electronic ONLY Version of the Newsletter

At the 2005 Board of Directors Meeting, the Board agreed that in the future the Newsletter will be converted to electronic distribution only. Starting with this issue, the Newsletter will be produced in Adobe Acrobat and posted on the NACS web site for viewing and distribution. Please notify the Communications Director at commdirector@nacatsoc.org (with your name and postal address) if you wish to receive a paper copy.

Edrick Morales,
Communications Director

NACS News

Stuart Soled is 2006 Ciapetta Lecturer

It is my pleasure to announce that Dr. Stuart Soled of ExxonMobil Research & Engineering Co. is the 2006 F. G. Ciapetta Lecturer. This award is sponsored by Grace Davison Catalysts and administered by The North American Catalysis Society. The award is given in recognition of substantial contributions to one or more areas in the field of catalysis with emphasis on industrially significant catalysts and catalytic processes and the discovery of new catalytic reactions and systems of potential industrial importance. The Award consists of a plaque, an honorarium and additional money is available to cover traveling expenses to visit many of the local clubs in North America. The local clubs should contact Dr. Soled directly (908-730-2577) to make travel arrangements.

Stu has a long and distinguished record in industrial research. His nominators cited his many contributions to the synthesis, structural and functional characterization, and use of catalytic solids. Stu has made discoveries and fundamental advances in bulk solid oxides, molecular oxide clusters, sulfides, and carbides applied to Fischer-Tropsch synthesis, hydrodesulfurization, oxidation, and acid catalysis. Most recently, his work on novel, mixed metal catalysts have had a dramatic impact on the desulfurization of diesel fuels. These Nebula catalysts offer significantly enhanced activity which allows refiners to retrofit existing hydrotreaters with little additional capital cost and to produce a product which exceeds the governmentally mandated clean fuels standards around the world. Well over one million pounds of the Nebula catalyst has been deployed throughout

the world for the production of ultra low sulfur fuels.

Dr. Soled is probably best known for his work in the area of solid acidity. His 1993 paper on the chemistry of sulfated zirconia has been cited over 100 times in the last five years, and it provides the definitive account of the structural requirements for isomerization of larger alkanes on these materials. He continued this work with the novel family of tungstated zirconias. Stu also led an effort in understanding aspects of Fischer-Tropsch synthesis that are critical components of the AGC-21 process and led the generation of a new generation of more stable catalysts.

Stu has been at ExxonMobil in Annandale, N.J. since 1979 where he is a senior member of the technical staff with the title of Distinguished Research Associate. He received his Ph.D. in 1973 from Brown University and his B.S. in Chemistry from City College of New York (graduated Magna Cum Laude). He has received the 2003 NY Catalysis Society Excellence in Catalysis Award and the Thomas Alva Edison Patent Award in 2002 which is given for product innovations and important scientific breakthroughs originating in the State of New Jersey.

John Armor
President, North American Catalysis Society

Nominations open for next Eugene J. Houdry Award

The Eugene J. Houdry Award in Applied Catalysis is sponsored by Süd-Chemie, Inc. It is administered by The Catalysis Society and is awarded biennially in odd numbered years, generally at the North American meeting of The Catalysis Society, where the awardee will be asked to give a plenary lecture. The award consists of a

plaque and a prize of \$3,000. An additional \$500 is available for otherwise unreimbursed travel expenses.

The purpose of the Award is to recognize and encourage individual contributions in the field of catalysis with emphasis on the development of new and improved catalysts and processes representing outstanding advances in their useful application.

Selection of the Award winner will be made by a committee of renowned scientists and engineers appointed by the President of The North American Catalysis Society. Selection shall be made without regard for age, sex, nationality or affiliation. Posthumous awards will be made only when knowledge of the awardee's death is received after announcement of the Award Committee's decision. Nominations for the Award should be made before July 1, 2006 and should present the nominee's qualifications, accomplishments and biography. A critical evaluation of the significance of publications and patents should be made as well as a statement of the particular contribution(s) on which the nomination is based. Nomination documents should be submitted in six copies to the President of the Society along with no more than two seconding letters.

All nomination packages for the Houdry Award should be addressed to:

John Armor,
President, North American Catalysis Society
1608 Barkwood Dr.
Orefield, PA 18069 USA

Future NACS Awards

Emmett Award nomination:

- Open - Aug. 2006 / Close - Nov. 30, 2006

Burwell Lectureship Nomination:

- Open - Jan. 2007 / Close - April 1, 2007

Heinemann Biography

Heinz Heinemann was a founding member of the Catalysis Club of Philadelphia as well as of the New York Catalysis Club. He was Executive Secretary of the First International Congress on Catalysis in Philadelphia in 1956 and President of the International Congress on Catalysis from 1956-1960. In addition, he was elected a member of the Spanish Council for Scientific Research for his support in founding its Institute of Catalysis and Petrochemistry. Heinemann was Honorary Chair of the 2005 NAM held in Philadelphia and delivered a remarkable overview of the history of the catalysis societies at the banquet ceremony.

Born in Berlin, Germany in 1913, he received his Ph.D. in Chemistry in 1937 from the University of Basel, Switzerland and came to the United States in 1938 where he became a U.S. citizen in 1944. He spent the next 40 years in the petroleum and chemical industry in research and executive positions resulting in his participation in 14 new industrial processes, including the process for converting methanol to gasoline and numerous publications and patents. He received several honors, such as the American Chemical Society Award in Industrial and Chemical Engineering, The Houdry Award of the North American Catalysis Society, the Murphree Award of the American Chemical Society and the Lowry Award of the U.S. Department of Energy. He was elected a member of the U.S. National Academy of Engineering.

In 1978 upon his retirement from Mobil Research and Development Corp. where he had served as Manager of Catalysis Research, he joined the Berkeley National Laboratory and the University of California, Berkeley where he was a retired Distinguished Scientist in the Laboratory's Washington, DC Projects Office. While in

Berkeley, he taught courses in Applied Catalysis in the University's Chemical Engineering Department. His research involved coal gasification, catalytic coal liquefaction, hydrodenitrification, nitrogen oxide emission control and methane activation catalysts which resulted in over 50 publications.

He has held offices in many professional societies. He was founding editor of *Catalysis Reviews*, and worked as its editor for 20 years. He also was Consulting Editor for over 90 books in the Chemical Industries Series, published by Marcel Dekker, Inc.

Heinz Heinemann, 92, died November 23, 2005 of pneumonia at Sibley Hospital in Washington, D.C. At this death, he was a distinguished scientist in the Washington office of LBNL. During the period 2001 to 2004, he served as a manager of the Washington American Chemical Society and as president of its Retired Chemists Group.

This article was extracted from Heinemann's biography for the 19th NAM Program Book and the News & Publications from the College of Chemistry at the [University of California, Berkeley](http://www.berkeley.edu).



Second ICC Paris, 1960. From left to right: Heinemann, Farkas and Selwood. Source: www.nacatsoc.org.



Iglesia and Topsøe Burwell/Houdry celebration at the 19th NAM on May 24, 2005. From left to right: Enrique Iglesia, Haldor Topsøe, Wayne Goodman, Nan Topsøe, Johannes Lercher, Michel Boudart, Heinz Heinemann and Henrik Topsøe. Source: Enrique Iglesia.

20th NAM Update

Key Dates

Call for Abstracts - **Aug. 21, 2006**

Abstract Submission Deadline - **Dec. 8, 2006**

Notice of acceptance - **Feb. 23, 2007**

Deadline for Early Registration - **April 13, 2007**

Conference - **June 17-22, 2007**



The 20th NAM organization announces scope of their technical program. There will be at least three plenary lectures, keynote presentations in all sessions, six parallel oral sessions and poster sessions. Abstract submission begins on August 21, 2006. Details will be for coming on their web site: <http://www.20nam.org>. Papers dealing with original

experimental or theoretical catalysis research in the following, non-limiting, list of topics are encouraged:

- **High throughput catalysis**
 - reactors, material synthesis, experimental design, data mining and analysis
- **Novel characterization techniques**
 - spectroscopy, surface science, isotope switching, microscopy, tomography
- **New catalytic materials and supports**
 - nanotechnology, mesoporous materials, zeolites, inorganic supports
- **Catalytic technology for protection of the environment**
 - emission control, use of alternate feedstocks, photocatalysis, electrocatalysis, hydrogen generation from non-carbon sources
- **Homogeneous catalysis**
 - organometallics, polymerization, biomimetics, ionic liquids and other novel reaction media, chiral synthesis
- **Catalyst deactivation, regeneration and disposition**
 - mechanisms, chemistry and processes, metal recovery, disposal of used catalysts
- **Syngas conversion**
 - GTL, GTO, CTL, BTL
- **Hydroprocessing**
 - HDS, HDN, aromatic hydrogenation
- **Heavy feed conversion**
 - FCC, hydrocracking, lubes, coal, shale oil
- **Catalysis for chemicals and specialty products**
 - olefin production, polymers, oxygenates, chiral synthesis
- **Hydrogen and syngas generation from hydrocarbons**
 - steam and autothermal reforming, partial oxidation
- **Acid-base catalysis**
 - novel reactions and applications
- **Fuel cells**
 - materials, operation, and mechanisms, feed pretreatment technologies

- **Novel reactors**
 - membrane, periodic operation, reverse flow, radial, micro reactors

NACS Opportunities

Volunteer Needed

We need someone to volunteer for a long term legal/tax activity: continuing the process John Byrne has started to assist the local clubs in getting Federal tax free status, incorporation, and a tax id. John has a lot of other demanding tasks on his plate (Treasurer and Head Trustee). We need someone willing to handle the interface between local clubs, the NACS, and lawyers with respect to incorporation. The person need not be a member of the Board - just interested in helping out, while being able to attend Board meetings and participate in Society activities. Interested persons should

contact John Armor directly
(globalcatalysis@entermail.net).

Investment Advisors Wanted

The Keith Hall Educational Fund has a large amount of funds which are used for generating proceeds to support the educational activities of the NACS. We have a lead trustee (John Byrne) and a small subcommittee of advisors that input advice into investment activities with these funds. We are looking for NACS members who would like to volunteer their time to participate on this subcommittee. This is a great way to influence and see the impact on sizeable investment strategies. These advisors may also sit in on Board meetings. Interested persons should contact John Armor directly (globalcatalysis@entermail.net).

Club/Society News

The 2006 Gordon Conference on Catalysis

The Gordon Conference on Catalysis will be held at Colby-Sawyer College on June 25 - June 30, 2006. The invited speakers are F. Armstrong, A. Bommarius, A. Corma, D.W. Goodman, S. Gottesfeld, C. Jones, A. Katz, J. Lauterbach, J. Lercher, M. Neurock, S. Scott, P. Stair, K. Strohmaier, R. van Santen, B. Weckhuysen and T. Werpy. For additional information about the meeting and the application to attend, please see the Gordon Conference web site at www.grc.org.

Michigan Catalysis Society

Club Officers 2005-2006

President: Eric Stangland, The Dow Chemical Company

Vice-President: John Hoard, Ford Motor Company

Secretary/Treasurer: Jong-Hwan Lee, General Motors Corporation

Club Representative: Galen Fisher

Meeting Schedule

April 19, 2006 - Prof. Enrique Iglesia, UC Berkeley - Burwell Lecture

May 25, 2006 - Spring Symposium at Midland, MI

Club Awards

Prof. Bruce C. Gates of UC Davis has been selected as the recipient of the 2005 Giuseppe

Parravano Memorial Award for Excellence in Catalysis Research.

During the 27th Annual Spring Symposium, Outstanding Student Presentation Award was given to Worajit Setthapun, a Ph.D. candidate at the University of Michigan.

News

On September 14, 2005, as the winner of 2005 Parravano Award, Prof. Bruce C. Gates gave a special lecture on the chemistry of transition metal complexes and clusters supported on solids. On October 19, Dr. Chris Marshall of Argonne National Laboratory updated us on his research on the HC-SCR of NO_x using diesel fuel as reductant. Not surprisingly, his talk has attracted one of the largest crowds for our regular monthly meetings. On November 15, Prof. Umit Ozkan braved the strong thunderstorm to visit us, and discussed her research on the fuel cell catalysis area. During our November meeting, we also passed our club bylaws.

Catalysis Society of Metropolitan New York

News

The Catalysis Society of Metropolitan New York is pleased to announce that Professor W.

Nicholas Delgass of Purdue University is the recipient of the Society's 2006 Excellence in Catalysis Award sponsored by ExxonMobil Research and Engineering. Professor Delgass is being recognized for his numerous, significant, contributions to catalysis science. Since receiving his Ph.D. from Stanford University with Michel Boudart, Professor Delgass' long and illustrious career has been marked by elegant and creative research in heterogeneous catalysis and surface science. His research is distinguished by its consistent focus on fundamental kinetics, molecular characterization, and careful attention to experimental detail to provide clear mechanistic insights into complex catalytic systems. In so doing, he has pioneered the application to catalytic systems of many spectroscopic techniques, such as Mössbauer, XPS, SIMS and solid state NMR, providing structural understanding of both active sites and key organic intermediates. Professor Delgass continues to advance the catalysis field in his current role as Director of Purdue's newly formed Center for Catalysis Design. In this role, Professor Delgass is leading a multi-scientist effort to utilize high throughput experimentation along with forward predictive fundamental models to

systematically suggest new catalyst structures for experimental design. In addition to his many research accomplishments, Professor Delgass is recognized as a premier teacher, mentor, and collaborator whose enthusiastic support of catalysis science and technology continues to inspire his many students, associates and colleagues in the field.

Professor Delgass will be honored with a plaque and a cash award, sponsored by ExxonMobil Research and Engineering Company on May 24, 2006 at a dinner meeting at the Catalysis Society of Metropolitan New York at the Marriott Hotel, Somerset, NJ. The award lecture will be given thereafter.

Catalysis Club of Philadelphia

Meeting Schedule

April 20, 2006 - Dr. Bruce R. Cook, ExxonMobil

May 18, 2006 - Spring Symposium at University of Delaware

News

The Catalysis Club of Philadelphia's Annual Student Poster Contest was held on January 19, with 28 student entries and two post-doctoral presenters. Top honors went to Ed Lee from Lehigh, with his poster "*Controlling the Molecular Structure and Reactivity of Supported Metal Oxide Catalytic Active Sites*". Four runners-up

include Rohit Vijay (U. Delaware) with "*Efficient Co Containing NOx Storage and Reduction Catalysts: Discovery & Understanding Using High Throughput Experimentation*"; Elizabeth Ross (Lehigh) with "*Tuning the Molecular and Electronic Structures of Catalytic Active Sites with Oxide Supported Nanoligands*"; Jeff Rimer (U. Delaware) with "*Self-Assembly and Role of Silica Nanoparticles in the Synthesis of Microporous Silicates*"; and Michael Gross (Penn) with "*Development of Solid-Oxide Electrodes with Enhanced Thermal Stability*". Ed Lee will be presenting a talk on his work at the Catalysis Club's Annual Spring Symposium.

Recognizing a need to promote and support the involvement of students in the activities of the CCP, a new meeting format was successfully implemented for the 2005-2006 season. Four students were selected to deliver a 15 minutes presentation before the main presentation is given. The attendance of students at the CCP monthly meetings has also increased since implementing this program. The student speakers were Mike Zellner, University of Delaware; Elizabeth I. Ross, Lehigh University; Gong Zhou, University of Pennsylvania; and Joe Fedeyko, University of Delaware.

The 2006 Spring Symposium will be held on Thursday, May 18 at Clayton Hall Conference Center,

University of Delaware. Advance registration deadline is May 8. Registration form is available at <http://www.catalysisclubphilly.org/2006sym/2006SymRegistration.pdf>.

The program and abstracts are available at http://www.catalysisclubphilly.org/2006sym/sym_program.htm.

The link for CCP new web site is <http://www.catalysisclubphilly.org>.

Pittsburgh-Cleveland Catalysis Society

The Spring 2006 meeting will be held on Friday, June 9th in the Board Meeting Room of the University of Pittsburgh's McGowan Institute (the "Cellomics Building"), located at 110 Technology Drive in Pittsburgh. In addition to contributed student presentations, the meeting will feature invited presentations by Paul Weiss (Penn State) and John Kitchin (Carnegie Mellon).

A second announcement with complete registration information will be available by the end of May. Details will also appear at the PCCS web site:

<http://www.pitt.edu/~gveser/pccs/index.html>.

To submit a paper for presentation at the meeting, please e-mail a one page abstract in MS-Word to Jim Miller at pccatalysis@comcast.net on or

before May 15, 2006. Please indicate which author will present the paper and note if the presenter is an undergraduate or graduate student. Student presenters will be eligible for the PCCS Student Paper Award. Presentations will be approximately 20 minutes in length, including time for questions and discussion.

Election of 2006-2007 officers will be held at the Spring Symposium. If you would like to run for office, please contact any of the Society's officers.

The link for the Pittsburgh-Cleveland Catalysis Society web site is:

<http://www.pitt.edu/~gveser/pccs/index.html>.

Southeastern Catalysis Society

The Southeastern Catalysis Society will hold its Annual Symposium in Ashville, NC on September 24 and 25. Please contact Chris Williams for more information at willia84@engr.sc.edu.

The DOE/BES Nanoscience Centers are coming on-line. Oak Ridge National Laboratory is the site of one of the Users centers, the Center for Nanophase Materials Sciences (CNMS). Among other

areas of Nanoscience, the CNMS will feature a theme area in **Catalysis and Nano-Building Blocks**. The CNMS is now soliciting User proposals, providing an opportunity for catalysis researchers throughout the US to come and make use of the facilities at the CNMS. Proposals may be submitted by visiting the CNMS Web site at <http://www.cnms.ornl.gov/>. For additional information you may contact Steve Overbury (overburysh@ornl.gov).

This Newsletter is a publication of The North American Catalysis Society, President: Dr. John N. Armor, Consultant-GlobalCatalysis.com; Vice President: Prof. Enrique Iglesia, University Of California At Berkeley; Secretary: Dr. Umit S. Ozkan, Chemical Engineering Dept, Ohio State University, Columbus, Ohio 43210, ozkan.1@osu.edu; Treasurer: Dr. John W. Byrne, Engelhard; Foreign Secretary: Dr. Curt Conner, University of Massachusetts; Past President: Dr. M. Albert Vannice, Penn State Univ.; Directors-at-Large: Dr. Bruce Gates, UC, Davis; Prof. Jinguang Chen, University of Delaware; Dr. Christopher L. Marshall, Argonne National Laboratory; Dr. Stuart Soled, Exxon Mobil. Club Representatives: California-Dr. E. Iglesia; Canada-Dr. J. Monnier; Chicago-Dr. C. Marshall; 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; Southeast-Prof. J. Goodwin; Southwest-Dr. B. D. Murray; Tri-State-Dr. P. Doolin; Western States-Dr. J. Miller. Contributions for the Newsletter should be directed to the Editor and Communications Director, Dr. Edrick Morales, Lyondell Chemical Co., 3801 West Chester Pike, Newtown Square, PA 19073, Ph: (610) 359-2929, E-mail: nacatsoc@gmail.com. Society Web Address www.nacatsoc.org.