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20th NAM Highlights



The 20th NAM was held on June 17-22, 2007, in Houston, at the Hilton Americas hotel. The Southwest Catalysis Society hosted the event, which featured 270 regular oral presentations, 19 keynote presentations, 5 plenary lectures and close to 400 poster presentations spread over three nights. Session topics ranged from characterization to syngas conversion to fuel cells, a total of 16 sessions, including a special session honoring Heinz Heinemann for his many contributions to NACS.

The plenary lectures were:

"A discussion of translation of zeolite discovery into commercial catalyst and adsorbent use," by Stacey Zones of Chevron, Houdry Award winner.

"Rational modification of active sites on heterogeneous catalysts," by Robert Davis of the University of Virginia, Emmett Award winner.

"Probing catalyst structure-performance relationships through studies of reaction mechanism and kinetics," by Alex Bell of the University of California, Berkeley, the first Boudart Award winner.

"Design and applications of olefin metathesis catalysts," by Robert Grubbs California Institute of Technology, 2005 Chemistry Nobel Prize awardee.

"The new syngas conversion business: opportunities and challenges," by Theo Fleisch, BP Distinguished Advisor.

Including exhibitors, the conference drew over 1100 registrants, including 90 graduate student winners of Kokes or Southwest Catalysis Society travel awards. Approximately 900

attended the opening reception (jointly sponsored by BASF, Chevron, ExxonMobil, Saint-Gobain NorPro, Shell Global Solutions Partnership and Süd-Chemie), which was held at the Houston Museum of Natural Science. Approximately 650 attended the closing banquet at the Hilton on Thursday evening, at which time all of the 2006-07 NACS award winners were honored, recently departed notables in catalysis were recognized, and plans for both the 21st NAM (San Francisco, June 7-12, 2009) and the 14th ICC (Seoul, July 13-18, 2008) were presented.

The organizers wish to thank especially the 34 financial donors to the meeting, who contributed in aggregate >\$185,000 (preliminary), the 40 exhibitors, the session chairs, and all the presenters, who combined to make the meeting a successful one.

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20th NAM Highlights



Organizing committee at closing banquet. From L to R: Scott Mitchell, Brendan Murray, John Super, Yun-feng Chang, Steve Xiao, Dawn Mason, John Novak, Cathy Tway, Kerry Dooley, Michael Wong, Michel Daage. Not pictured: Mike Lemanski.



Inaugural Boudart Award presentation. From L to R: Roel Prins, Henrik Topsoe, Michel Boudart, Alex Bell (recipient), John Armor and Enrique Iglesia.

Summary of 2007 NACS Board Meeting

The Board of Directors met prior to the Houston NAM meeting. The following are highlights from this meeting.

Procedural processes for the 5 NACS awards were reviewed and additional financial commitments made. The NACS is jointly administering with the European Federation of Catalysis Societies a new award, the Michel Boudart Award for the Advancement of Catalysis.

The Communications Director was asked to administer the next

election (early 2009) for Directors-at-Large electronically using the internet.

The \$1,000. student award grants are continued and available to each local club each year. Applications should be made to the President.

The meeting chairs of future NAM meetings reviewed their progress. The 2009 meeting will be held in the Hyatt in downtown San Francisco on June 7-12. There will be 3 co-chairs (E. Iglesia, B. Gates, and C. Wilson). Galen Fisher reviewed the early steps that the Michigan Catalysis Society

is taking to host the 2011 meeting in or near Detroit. The Tri-State Catalysis Club has committed to host the 2013 meeting.

Under new business, the ORCS was given \$5,000. to provide student grant awards for their meeting in 2008. Start-up grants for future NAM meetings were also raised for the 2011 and beyond meetings.

John Armor, President
NACS
July 2007

NACS Announcements

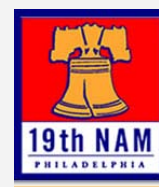
Local Club Student Awards

A reminder that each local club can apply for the new annual student support awards for a maximum of \$1,000. per year. The amount can only be used for students (both graduate & postdoctoral). A timely proposal from the local club must be submitted to the President which outlines the projected use of the monies; a full accounting of the monies has to be provided by the local club (in good standing) to the Treasurer shortly after the event, but within one year.

This award is distinct from the Kokes Awards for the NAM meetings. The money can be used for the student's meals, travel, living, and for poster awards. The award will be made available 1-2 months before the sponsored event. Local clubs need to allow one additional month for preparation of the check; the funds are not intended as a means to generate advanced income (via interest), but are intended to support student involvement at the sponsored event by the local catalysis club. Address proposals to the President at jnagcat@verizon.net

New Website Folder

The NACS website now contains a new sub-folder, **Past NAM Abstracts**. This contains the abstracts and programs from the past NAM meetings (18th in Cancun in 2003, 19th in Philadelphia 2005, and 20th in Houston in 2007). We would like to acknowledge Dr. Gariela Diaz, Universidad Nacional Autónoma de México, and Mr. David Lopez, webmaster of the Mexican Catalysis Club, for recovering and transferring the 18th NAM abstracts to the NACS web site.



To the NACS Membership

Every four years the International Association of Catalysis Societies (IACS) holds the International Congress of Catalysis (ICC). The **NACS** is a voting member of the IACS Council which decides who will host future ICC meetings. At the last **NACS** Board meeting, I led a some discussion among the Board members on whether the **NACS** should make a bid to host the 2012 meeting, but there was no clear consensus for sponsoring such a meeting in 2012. I promised the Board that I would discuss the matter with other meeting attendees during the Houston meeting, appoint a subcommittee to evaluate our options, and then report back to the Board with our recommendations via email before September 2008. The following is a summary of my report to the Board.

During the Houston NAM meeting, I discussed this opportunity to bid for hosting the 2012 ICC meeting with several prominent members of the **NACS**. There was a general consensus that the **NACS** would need a "visible" chairperson to lead a team of members to run such a major meeting (with probably >2000 attendees vs the 1000 attendees in Houston). In order to

make a bid, the **NACS** would have to spend thousands of dollars to cover preliminary travel to potential meeting venues and to prepare a video describing the host city as well as defining the organizing committee we would propose. This would entail identifying a city having sufficient hotel and convention space (with attention to costs) and getting preliminary estimates on hotel rates for a 2012 meeting. Such a meeting in USA would typically require eventual, contractual hotel guarantees with perhaps a potential ~\$1 million liability to the **NACS**.

The consensus from those I spoke with in Houston was that we must first find a leader (as Gary Haller was for 1996 in Baltimore) to assemble a team for running the meeting. In order to make such a bid for the 2012 meeting, it was clear that we needed to have a chairperson who would command the support of the ICC members voting for the meeting sites and a person who could lead a team over a period of almost five years in the period prior to 2012. This leader ought to be able and willing to delegate the work by function and serve as a focal point for communications and decisions. It should be a highly visible person

active in the catalysis community in North America. I received several suggestions and made some inquires while in Houston. Of the people I contacted, those with already high work loads were not interested in taking on a new, major role for another 5 years. The reactions of those I spoke with were uniformly and firmly NO. Several of these candidates were willing to work on a committee, but not lead it.

After the Board meeting, I sent out a general email message to over 48 prominent catalysis scientists all over North America asking for their input and suggestions. I got very little new input. A few, new names were added to a potential pool of candidate leaders, but several of them also passed on accepting the leadership role. Quite a few people suggested that I undertake the leadership role, but I do not wish to undertake such a demanding role in my current retirement mode.

I did create a small subcommittee to provide input and guidance in assessing the Society's options on this matter. The members were Gary Haller (former ICC Chair in 1996), Leo Manzer (former ICC Treasurer in 1996), Enrique Iglesia (co-chair of Pacific NAM in 2009

and **NACS** VP), and myself (a member of Gary's organizing committee in 1996). We discussed many options via email and considered several people who might serve as the chair.

After more than 6 weeks, no strong, willing candidate emerged as a potential chair, and no obvious location for such a meeting emerged. Our subcommittee could not find sufficient reasons for the **NACS** to pursue a bid for the 2012 meeting (bids must come from members of the IACS (like the **NACS**) especially in view of the thousands of dollars it would cost to prepare a professional quality video, and the thousands of dollars it would take to support travel for a special committee to travel to potential meeting sites to review the facilities. Therefore, upon reviewing the above information, this subcommittee recommended to the Board that the **NACS** not bid for the 2012 ICC meeting. Based upon this recommendation, no new input from the Board, and without any new options, I now consider the matter closed and have advised the Board and the IEAS that the **NACS** will not bid to host the 2012 ICC meeting. Perhaps, circumstances will be different for the 2016 ICC meeting.

John Armor, President
NACS

Call for IACS Award Nominations

IACS will present two awards at the 14th ICC in Seoul – the ICC Award and the Heinz Heinemann Award. Please note that the deadline for nominations is January 15, 2008. All nominations should be submitted to the President of the IACS by email to the following address: bell@cchem.berkeley.edu. The recipients of these awards will be selected by the IACS Awards Committee, and it is planned to inform the recipients by March 15, 2008. Both recipients will be invited to present a plenary presentation at the ICC in Seoul

International Catalysis Award

The International Catalysis Award will be given 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. The recipient must not have passed her/his 45th birthday by May 1 of the award year. The Award consists of a plaque and a check for \$5,000.

Heinz Heinemann Award in Catalyst Science and Technology

The Heinz Heinemann Award in Catalysis will be given to an individual or a group for significant contributions to catalyst science and technology achieved between January 1, 2003, and December 31, 2007. The Award consists of a plaque and a check for \$5,000.

Nominations deadline is January 15, 2008

Nomination Procedure

Nomination of the award should be made before January 15 in the year of an International Congress on Catalysis (i.e. January 15, 2008, for the awards made at the 14th ICC), 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 four letters of support, should be submitted electronically as a single PDF file to the

President of the International Association of Catalysis Societies (bell@cchem.berkeley.edu). 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. 14th ICC, July 13-18, 2008 in Seoul, Korea).

Selection of Award Recipients

Selection of the award recipients will be made by an International Committee composed of renowned scientists or engineers. This Committee will be 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. 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 form is available at [IACS 2007](#)

Michigan Catalysis Society

News: In addition to the Parravano Award Lecture, the 29th Annual Spring Symposium also featured an invited lecture from Dr. Stu Soled of the ExxonMobil Corporate Research Lab. Dr. Soled presented his research on the use of zeta potential measurements on the synthesis and characterization of supported metal catalysts. The program also featured posters and presentations from the University of Toledo, the University of Michigan, Michigan State University, the Ford Motor Company, and the University of Kentucky.

The Spring Symposium featured a student competition, in which Mr. Hui Wang from Michigan State University won the Outstanding Student Presentation Award and Mr. Hongliang Xin from the University of Michigan won the Student Poster Presentation Award. The society also elected new officers for the 2007-08 year during the Symposium business meeting.

Earlier in the year on February 15, 2007, Dr. Galen Fisher from the Delphi Research Labs made a presentation during our monthly dinner meeting. Dr. Fisher presented his research

in collaboration with Oak Ridge National Lab on the measurement and simulation of temperature profiles inside a fuel reformer designed to generate hydrogen for use as a NO_x reductant. On March 7th, 2007, Professor Eduardo Wolf from Notre Dame University visited the Michigan Catalysis Society. Professor Wolf shared some of his current research including the use of membrane reactors for partial oxidation and the use of high throughput experimentation in the study of methanol oxidative reforming. On April 4th, 2007 Professor Manos Mavrikakis from the University of Wisconsin visited the society and shared with us his current work on the use of *ab initio* calculation methods to study the properties of bimetallic and ternary alloys for use as fuel cell electrode catalysts.

MCS Officers for the 2007-2008 Year: Past President - John Hoard, The Ford Motor Company / University of Michigan; President - Jong H. Lee, General Motors Corporation; Vice President - Suljo Lincic, University of Michigan; Secretary/Treasurer - Paul Fanson, Toyota Motor Engineering and Manufacturing, North America; and NACS Representative - Galen Fisher, Delphi Research Labs.



John Hoard, Members of the Parravano family (including Mrs. Ernestina Parravano, the wife of the late Prof. Parravano), Prof. Alex Bell, and Galen Fisher (left to right).

2007 Giuseppe Parravano Memorial Award

The **Michigan Catalysis Society** is pleased to announce that the 2007 Giuseppe Parravano Memorial Award for Excellence in Catalysis Research is presented to Professor

Alexis T. Bell of the University of California at Berkeley. Professor Bell was selected due to his outstanding contributions to the field of heterogeneous catalysis, including his work on the

application of *in situ* spectroscopic techniques and isotopic tracer techniques in order to understand the relationships between catalyst structure and the dynamics of elementary chemical reactions.

The Giuseppe Parravano Memorial Award is presented biennially in odd numbered years to an individual from North America to formally recognize outstanding contributions to catalytic science and technology. The Award is sponsored by the Memorial Trust Fund for Professor Giuseppe Parravano, which has been established at the Department of Chemical Engineering at the University of Michigan, and administered by the

Michigan Catalysis Society.

The formal presentation of the Parravano Award took place on May 10, 2007 at the 29th Annual Spring Symposium of the Michigan Catalysis Society, hosted by The Ford Motor Company in Dearborn, MI. For the Award Lecture, Professor Bell presented his work on the use of combined experimental and theoretical techniques to elucidate reaction mechanisms over single site catalysts.

The Catalysis Club of Philadelphia

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The **Catalysis Club of Philadelphia** is pleased to announce that **Professor John Vohs** of University of Pennsylvania is the recipient of the 2007 **Catalysis Club of Philadelphia Award**. The award is given for outstanding contribution to the advancement of catalysis. Such advancement can be scientific, technological or in organization leadership.

Professor Vohs is a University of Delaware graduate. After a NATO Postdoctoral fellowship at Facultes Universitaires Notre-Dame de la Paix in Namur, Belgium he started his academic carrier at University of Pennsylvania where he is currently the Carl V. S. Professor of Chemical Engineering. His award nominators emphasize among others his pioneering work in the application of surface science techniques to understand reaction

mechanisms and site requirements on metal oxide single crystals. He demonstrated the use of High Resolution Electron Energy Loss Spectroscopy (HREELS) to obtain vibrational spectra of reactive intermediates on the surfaces of semiconducting and insulating metal oxides. This work, which continues to be highly cited today, was vital to making the connection between model single crystal surfaces and high surface area powder catalysts, especially in demonstrating mechanisms and site requirements from model systems that could be applied to complex materials. His HREELS and XPS work on vanadia, titania, and ceria-based materials helped to understand the surface properties of these materials and lead to applied research on oxygen storage processes

which is of vital importance to solid oxide fuel cells (SOFCs). As one of the leaders of this field, professor Vohs contributed to the fundamental understanding of related reaction and transport processes, as well as strategies for preventing deactivation and coking in these devices. Moreover, he is one of a small but growing number of researchers who are demonstrating a new paradigm for design of new catalytic materials from atomistic understanding.

In addition to his research contributions, Professor Vohs has advised nearly 20 graduate students and about the same number of postdoctoral fellows during his 18 years as faculty at the University of Pennsylvania where he also served as Associate Dean and Department Chair. He and his students have been long supporters of our Catalysis Club and we are proud to add this award to the series of his prior acknowledgements.

Professor Vohs was honored with a plaque and a cash award at our September dinner meeting. He presented his award lecture on "Mechanistic Studies of Hydrogen Production from Methanol on PdZn Alloy Catalysts".

Organic Reactions Catalysis Society

The 22nd Conference of the **Organic Reactions Catalysis Society** will be held on March 30 – April 3, 2008 at The Jefferson Hotel in Richmond, Virginia. The focus of this conference is on the application of catalysis to solve synthetic challenges. Sessions on Catalysis in the Pharmaceutical Industry and Catalysis in the Fine Chemical Industry are being organized. We are seeking presentations from industrial speakers for these sessions. Please contact Mike Prunier at chair@orcs.org if you are interested in submitting an

abstract. The initial call for Abstracts for the 22nd Conference has been issued and the deadline is August 15, 2007.

We are pleased to announce that **Dr Brian R. James** of the University of British Columbia and **Dr. John F. Hartwig** of the University of Illinois have been selected as the 2007 and 2008 Paul N. Rylander Award winners, respectively. Dr James and Dr. Hartwig will give Rylander Award presentations at the Conference.

The 22nd Conference will also feature a Pre-conference Tutorial on

Catalysis. This will be a series of presentations made by industrial experts and is designed for scientists and engineers with responsibility for organic synthesis as well as professionals in the catalyst supplier organizations. Those just starting jobs in industry or national labs, or with less than five years experience, may especially find the tutorial helpful. A small additional fee will be charged for this tutorial and seating will be limited. More details will be found at www.orcs.org as the tutorial plans are finalized.

2008 Paul N. Rylander Award Winner



John F. Hartwig

received his A.B. from Princeton in 1986 and his Ph.D. from the University of California, Berkeley in 1990. Subsequently, he was an American Cancer Society Postdoctoral Fellow at the Massachusetts Institute of Technology and joined Yale University in 1992

where he was awarded the Irénée P. duPont Professorship in Chemistry in 2004. Dr. Hartwig joined the University of Illinois chemistry faculty in 2006 and currently holds the Kenneth J. Rinehart Jr. Professorship. John Hartwig has received numerous awards including an A.C. Cope Scholar (1998) Award, the Leo Hendrik Baekeland (2003) Award, the Thieme-IUPAC Prize in Synthetic Organic Chemistry (2004), the ACS Award in Organometallic Chemistry (2006), and the Tetrahedron Young Investigator Award in Organic Synthesis (2007).

Dr. Hartwig's group has developed a series of catalytic reactions for

organic synthesis, including palladium-catalyzed aminations of haloarenes, palladium-catalyzed arylation of carbonyl compounds, hydroaminations of vinylarenes and dienes, iridium-catalyzed enantioselective allylations of amines and alcohols, and the terminal functionalizations of alkanes. In addition, his group has uncovered new elementary organometallic reactions, such as reductive eliminations of amines, ethers and sulfides, insertions of olefins into transition metal amides and alkoxides, and the oxidative addition of ammonia.

2007 Paul N. Rylander Award Winner



Brian James has made seminal contributions, over a period of 45 years, to homogeneous catalysis by transition-metal complexes, especially those of platinum metals. His

research interests have focused mainly on activation of H₂, O₂, CO, H₂S, H₂O, and N₂O in their interactions with organic substrates. His classic 1973 text on "Homogeneous Hydrogenation" is still quoted, and he was the first to report on the use of Ru complexes with chiral phosphines and sulfoxides as precursors for catalytic asymmetric hydrogenation. Recent research has centered on imine hydrogenation, development of new bleaching agents for pulp and paper, and medicinal inorganic chemistry utilizing Ru complexes. The research has led to over 400 publications and 6 patents,

and has been recognized by over 30 national and international awards, but he considers his major contribution has been a role in the development of the careers of his 54 Ph.D. and 26 M.Sc. students.



Southwest Catalysis Society



Joe Hightower of Rice University, 20th NAM honorary co-chair, presented the history of catalysis in the Southwest.

The **Southwest Catalysis Society (SWCS)** hosted the 20th NAM at the

Hilton Americas Houston, June 17-22. The meeting was a great success with record attendance (1050 or more) and record sponsorship (33 sponsors and \$190k+).

The SWCS elected its new officers as following:

- Professor Mike Wong of Rice University is the Chair-Elect
- Dr. Andy Moreland of Albemarle Catalyst is the Secretary
- Professor George Stanley continues to serve as the Treasurer
- Dr. Scott Mitchell of SABIC is a new Director.

Others continued to serve are: Dr. Yun-feng

Chang of ExxonMobil – Chair, Professor Tracy Hanna of Texas Christian University – Director, Dr. Mike Reynolds of Shell Global – Director, Professor Kerry Dooley of Louisiana State University – Past Chair and Dr. Brendan Murray of Shell Global Solution- NACS Representative

Dr. Steve Xiao served two-term director joined the Savannah River National Lab. We appreciated his numerous contributions to SWCS and the 20th NAM. We wish him well at his new post.

OR C|S ORGANIC REACTIONS CATALYSIS SOCIETY

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