

The
North American Catalysis Society



NEWSLETTER

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Emmett Award to Francisco Zaera

The Paul H. Emmett Award in Fundamental Catalysis to Professor Francisco Zaera of the University of California at Riverside, USA. The award is sponsored by the Davison Chemical Division of W.R. Grace and Company. The Award is intended to recognize and encourage individual contributions (under the age of 45) in the field of catalysis with emphasis on discovery and understanding of catalytic phenomena, proposal of catalytic reaction mechanisms and identification of and description of catalytic sites and species.

Professor Zaera's main interests lie with the study of mechanisms of surface reactions by using modern surface-sensitive techniques. He is noted for bridging the knowledge on surface reactions with that of organometallic systems and for his extension of kinetic theories to reactions on surfaces. His nominators commented that he has placed particular emphasis on making a connection between the atomic details of surface reactions and heterogeneous catalytic processes. While most surface kinetic concepts have been recognized for some time, Francisco is credited with quantifying the kinetic consequences of these effects by a variety of surface science techniques to rationalize the rates observed in model systems and correlate them with practical heterogeneous catalysis rates. He has been given credit for unequivocally establishing that most hydrocarbon processing catalysts are covered with a carbonaceous layer during the catalytic process. By performing isotope labeling experiments and using vibrational spectroscopy and molecular beam studies, Professor Zaera determined that those deposits are not direct intermediates in hydrogenation-dehydrogenation steps, but rather they play an indirect role by tempering the high activity of the metal surfaces and providing a reservoir for the surface hydrogen. He is also credited with establishing the prominence of hydride and reductive elimination steps as the main conversion pathways for alkyl fragments on transition metals. He has also shown how specific small changes in relative rates among competing reactions can account for vast differences in selectivity observed among some Group VIII metal centers.

Houdry Award to Avelino Corma

The 2003 Eugene J. Houdry Award in Applied Catalysis to Professor Avelino Corma Canos of the Technical University of Valencia, Spain. The award is sponsored by Süd-Chemie, Inc. 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.

Professor Corma is widely recognized as a prolific and versatile contributor to the science and technology of heterogeneous catalysis. In particular, he has participated in the discovery of new catalysts for the isomerization of light, straight-run naphtha now in commercial use, others for bottoms upgrading in FCC units, a catalyst for a commercial process for the selective epoxidation of propylene, the development of weakly basic solid catalysts for selective isomerization of alpha olefins, and the commercialization of catalysts for the isomerization of beta pinene. His nominators commented: a set of catalyst compositions disclosed in a patent for the isomerization of light, straight-run naphtha (US #5,057,471) is in current use in ten commercial units. These catalysts are based on H-mordenite materials with very low aluminum content and they show unprecedented sulfur resistance. His group is also credited with the discovery and use of Al-containing sepiolite materials as additives for bottoms upgrading in FCC units. Following successful scale-up activities, these catalysts are in current use in at least one FCC refinery unit. A collaboration between the Corma group and Sumitomo Corporation has led to a commercial process for the selective epoxidation of propylene to propylene oxide using cumene hydroperoxide. The use of a zeolitic material with large pores and a Si-O-Ti framework leads to unprecedented selectivity and stability. A

commercial reactor using this technology is currently in start-up in Japan. A joint project with Tagasako Corporation and Acedesa led to the commercialization of heterogeneous catalysts for the isomerization of beta pinene to alpha pinene, as part of an overall process for the synthesis of a family of sandalwood-type fragrances. Professor Corma's group has also pioneered the use of automated micro-activity test units, whose design was patented and licensed, and about 30 of these units have been placed in service.

Johnson Matthey's Catalysts and Chemicals Division to Support Burwell Lectureship

For several years the Robert Burwell Lectureship in Catalysis has both been sponsored and administered by The North American Catalysis Society. I am pleased to announce that Johnson Matthey PLC's Catalysts and Chemicals Division has now agreed to underwrite the expenses associated with this award. Support for the Award will begin with the 2003 awardee. The award 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. The Awardee is selected on the basis of his/her contributions to the catalytic literature and the current timeliness of these research contributions. The recipient may be 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. Publication will be in an appropriate periodical. This Lectureship is awarded biennially in odd-numbered years. The award consists of a plaque and an honorarium of \$5,000. Up to an additional \$4,500 is available to cover traveling expenses associated with giving lectures throughout North America. 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. Nomination packages should indicate the nominee's qualifications, accomplishments, a nominating letter, a seconding letter and a biography of the nominee. A critical evaluation of the significance of candidate's qualifications 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. Selection of the Awardee will be without regard to age, sex, nationality or affiliation.

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 24, 2003. Details of the registration process will be posted on January 2003. 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 will be posted on early December 2002. Special inquiries: 18nam@fisica.unam.mx. Complete information on the web site: www.18nam.org

Call for 2003 Parravano Award Nominations

Nominations are invited for the 2003 Michigan Catalysis Society Parravano Award for Excellence in Catalysis Research and Development. The Award will be presented at the Twenty Fifth Annual Spring Symposium of the Michigan Catalysis Society, in May of 2003. The award winner will be invited to present an award address at the meeting. The award is given biennially to an individual from North America to recognize outstanding contributions to catalytic science and technology. The recipient of the award will be selected by a committee that is appointed by the officers of the Michigan Catalysis Society. The award consists of a medal and prize of \$500. The award is sponsored by the Memorial Trust Fund for Professor Giuseppe Parravano and is administered by the Michigan Catalysis Society. Letters of nomination and supporting documentation must be received by March 1, 2003 and should be sent to: David Barton, The Dow Chemical Company, Catalysis R&D, 1776 Building, Midland, MI 48674 USA. Ph: (989) 636-4753, Fax: (989) 638-9350, Email: dgbarton@dow.com

Request For Nominations: 2003 Award For Excellence In Catalysis Presented by The Catalysis Society of Metropolitan New York

The Catalysis Society of Metropolitan New York is seeking nominations for its twenty-second annual "Award for Excellence in Catalysis." The award, sponsored by ExxonMobil Research and Engineering Company, consists of a plaque and a \$1,500 gift. It is granted to an individual or a research team from North America to recognize outstanding contributions in either applied or basic research in either homogeneous or heterogeneous catalysis. Particular effort is made to identify worthy individuals or teams who have not received sufficient recognition for their work. This award will bring due recognition to the recipient(s), and we appreciate your help in seeking first-rate candidates. We especially need to fortify our active nomination list! Nominations are solicited from anyone who is currently, or has been previously, active in the field of catalysis. Nominations previously submitted as well as new ones will remain active for a period of three years. Those wishing to submit a nomination should write a letter of recommendation for the individual nominee or team, including pertinent biographical information and a specific description of the impact of the nominee's achievements in catalysis. The maximum length of the letter should be no more than two pages. It may be accompanied by copies of no more than two items presenting important documentation, such as papers or patents. Deadline for receipt of nominations is January 17, 2003.

Nominations Sought for the 2003 Herman Pines Award in Catalysis

The Catalysis Club of Chicago is soliciting for the Herman Pines Award for outstanding research in the field of catalysis. Herman Pines was an outstanding research scientist, and his work revolutionized the general understanding of organic chemistry, particularly the chemistry of hydrocarbons interacting with strong acids. The award in his honor is sponsored by UOP where Herman began his industrial career in 1930 and amassed 145 US patents over a 23 year period. The award is being co-sponsored by the Catalysis Club of Chicago of which Professor Pines was a founding member. The award will be presented at the 2003 Spring Symposium of the Catalysis Club of Chicago. The recipient will receive a cash award of \$1,000 and reimbursement for travel and lodging as a plenary speaker at the Spring Symposium. The recipient will be chosen based on the following criteria: importance of catalysis research completed in the past five years; alternation of the award between industrial and academic/national laboratory researchers; recipient must be a resident of North America. For the award to be given in 2003, nominations for AN ACADEMIC/NATIONAL LABORATORY RESEARCHER are sought by January 31, 2003. Nominations should describe the specific work for which the nominee should be recognized. Please send your nomination either through Internet Nomination Form http://www.cmt.anl.gov/cc/Pines_Award/Nomination_form.html or directly via regular mail by the deadline to: Larry Satek, 6208 North Van Guilder Road, Fremont, IN 46737, satekwinery@voyager.net, (260) 495-9463. The recipient will be notified in February of 2003, and the award address will take place at the Spring Symposium in May of 2003..

Club/Society News

Southeastern Catalysis Society held its Fall Symposium on September 29-30 at the Holiday Inn SunSpree Resort in Asheville, NC. Over 50 catalysis professionals and graduate students from North Carolina, South Carolina, Virginia, Tennessee, Georgia, Alabama, and Mississippi participated. The next

SCS meeting, the 2003 Spring Symposium, will be held at the same venue on April 13-14th. A "Call for Papers" will be transmitted via e-mail to SCS members in January 2003. Anyone interested in joining the SCS should contact one of the officers: Jim Goodwin (james.goodwin@ces.clemson.edu), Bob Davis (rijd4f@virginia.edu), Henry Lamb (lamb@eos.ncsu.edu),

Bud Rice (budrice@ces.clemson.edu), and Matt Neurock (mn4n@virginia.edu).

The Catalysis Club of Philadelphia seeks nominations for its 2003 Catalysis Award. Contact Todd Ballinger (ballinger@jmusa.com) or Jennifer Jewson (jennifer.jewson@lyondell.com).

The deadline for receipt of nominations is March 15, 2003. The club resumes its speaker schedule: Jan 16, Theodore Krause, Argonne National Laboratory (**Poster Session**), Feb. 20, Steven D. Ittel - Catalysis Club of Philadelphia Award Winner 2002, DuPont; March 20, James G. Goodwin, Clemson University; April 10, Peter Stair, Northwestern University; May 25, Spring Symposium, University of Delaware.

The Catalysis Society of Metropolitan New York. The remaining speaker schedule is: January 15, 2003, Anne Gaffney, Rohm & Haas; February 19, 2003, Conrad Zhang, Akzo-Nobel; March 19, 2003, Spring Symposium; April 16, 2003, Mark Davis, Caltech; May 21, 2003, Excellence in Catalysis Award Lecture. Also the Society invites you to submit abstracts of papers for oral or poster presentation at the **2003 Spring Symposium**. As a heading of the abstract please list the title, author(s) (underline the speaker) and affiliation. The length of the abstract should not exceed one page, single-spaced. Twenty minutes will

be allotted for each oral presentation, followed by a ten-minute discussion period. Times will be strictly monitored so as to encourage a thorough discussion. In addition, three awards will be given to the best posters. Graduate students will be awarded a first prize of \$125 and a second prize of \$65 for their poster presentations. Post-doctoral fellows will be awarded a first prize of \$125 for their poster presentations. All members are urged to reserve the date and participate in the Spring Symposium. The deadline for receipt of abstracts is February 3, 2003. You will be notified of consideration for the Symposium by February 21, 2003. Those submitting paper(s)/poster(s) for consideration for the Spring Symposium should send or e-mail them to: Bala Ramachandran, ABB Lummus Global Inc., Technology Development Center, 1515 Broad St, Bloomfield, NJ 07003-3096 bala.ramachandran@us.abb.com

The Catalysis Club of Chicago announces its 2003 Spring Symposium in May 2003 (Location and Date TBA). The Catalysis Club of Chicago each year sponsors a daylong symposium devoted to

scientific and technological developments in catalysis. The participants include researchers from universities, national laboratories and industries in the greater Chicago area and nearby states. The meeting is a great opportunity to share recent technological breakthroughs in catalysis and to promote interaction between scientists from different institutions. The agenda includes the 2003 Herman Pines Award Address and a keynote address. There will also be a Graduate Student Poster Competition.

If you are interested in making a presentation or in attending, please visit us at www.cmt.anl.gov/ccc/ or contact the Club's secretary Wolfgang Spieker, (847) 391 2378, waspieke@uop.com. Coming speakers: January 13, Professor Laurie D. Marks, Northwestern University; February 10, Dr. Thomas Vogt, Brookhaven National Laboratory; March 10, Dr. Terry J. Burkhardt, ExxonMobil Chemical Company; April 14, Professor Jens Weitkamp, University of Stuttgart. For an update, see <http://www.cmt.anl.gov/ccc/>

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. M. Viniegra; 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. 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.