

NACS Newsletter

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2017 Burwell Award



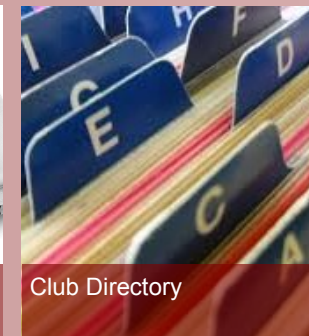
Awards Presented by the
NACS



Election Results for Direc-
tor-at-Large



Club News



Club Directory

NAM25

DENVER, CO

NORTH AMERICAN
CATALYSIS SOCIETY MEETING
JUNE 4-9, 2017
MILE HIGH
CATALYSIS

National Officers: President - Enrique Iglesia, University of California-Berkeley; Vice-President - Bruce R. Cook,BP Products NA, Inc.; Secretary - Hong-Xin Li, Zeolyst International; Treasurer - C. Y. Chen, Chevron Energy Technology Co.; Lead Trustee - Thomas F. Degnan, University of Notre Dame; Communications Director - Edrick Morales, Sasol Chemicals (USA) LLC; Archivist - Uschi Graham, Topasol LLC.

Club Representatives: **Canada** - R. Tom Baker, University of Ottawa; **Chicago** - Christopher L. Marshall, Argonne National Laboratory; **Mexico** - José Antonio de los Reyes, Universidad Autonoma Metropolitana, Campus Iztapalapa; **Michigan** - Eric Stangland, The Dow Chemical Company; **New England** - William C. (Curt) Conner, University of Massachusetts; **New York** - Israel E. Wachs, Lehigh University; **Organic Reactions Catalysis Society** - Karl O. Albrecht, Pacific Northwest National Laboratory; **Pacific Coast** - Alex Katz, University of California-Berkeley; **Philadelphia** - Dion Vlachos, University of Delaware; **Pittsburgh–Cleveland** - Götz Vesper, University of Pittsburgh; **Rocky Mountain**—Ryan Richards, Colorado School of Mines; **Southeast** - Carsten Sievers, Georgia Institute of Technology; **Southwest** - Mike Reynolds, Shell International Exploration and Production; **Tri-State** (KY/OH/WV) - Umit S. Ozkan, The Ohio State University.

Directors-at-Large: Jingguang G. Chen, Columbia University; Robert J. Davis, University of Virginia; Maria Flytzani-Stephanopoulos, Tufts University; Bruce Gates, University of California at Davis; Fabio H. Ribeiro, Purdue University; Stuart L. Soled, ExxonMobil.

Jingguang Chen is the recipient of the 2017 Robert Burwell Lectureship in Catalysis



I am pleased to announce that Professor Jingguang Chen of Columbia University is the recipient of the 2017 Robert Burwell Lectureship in Catalysis of the North American Catalysis Society, sponsored by Johnson Matthey and administered by The North American Catalysis Society. It is awarded biennially in odd-numbered years. The award consists of a plaque and an honorarium of \$5,000. The plaque will be presented during the closing banquet ceremonies at the 2017 North American Meeting of the Catalysis Society. An additional \$4,500 is available to cover travelling expenses in North America.

Professor Chen will present lectures at the local catalysis clubs and societies during the two

-year period covered by this award.

The Robert Burwell Lectureship in Catalysis 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.

Professor Chen is being specifically recognized for his pioneering contributions to the mechanistic understanding and applications of carbide and bimetallic catalysts in heterogeneous catalysis and electrocatalysis. His research has utilized rigorous combination of surface science, theoretical modeling, reactor and electrochemical cell descriptions, and in-situ characterization to significantly advance the understanding of the active sites and reaction descriptors in transition metal carbides for a wide range of catalytic and electrocatalytic reactions. He has also pioneered studies for identifying the unique electronic and catalytic properties of monolayer bimetallic cata-

lysts, combining surface science and in-situ investigations over single crystal surfaces, well-characterized polycrystalline thin films, and oxide-supported powder catalysts. His discovery of the dynamic behavior in the structural arrangement of bimetallic catalysts has provided guidance on the design of bimetallic structures, as well as the metal-oxide interfaces, that would remain catalytically active and stable under reaction conditions.

Bruce Cook
VP, North American Catalysis Society

Election Results for Director-at-Large

The electronic election for six Director-at-Large positions is now complete.

I am pleased to announce that the following individuals have been elected to a four-year term as Director-at-Large from a slate of 13 candidates:

- Jingguang Chen (Columbia University)
- Jim Dumesic (University of Wisconsin)
- Maria Flytzani-Stephanopoulos (Tufts University)
- Bruce C. Gates (University of California at Davis)
- Chris Jones (Georgia Institute of Technology)
- Fabio H. Ribeiro (Purdue University)

They will be seated as NACS Board members at the start of the Board Meeting on June 4, 2017.

Stu Soled (ExxonMobil) was elected as the First Alternate and Abhaya Datye (University of New Mexico) was elected as the Second Alternate. They will succeed in that order any elected Director-at-Large who cannot complete their term because of resignation or of election as Officer.

Votes were received from 425 of the 1720 NACS members of record. The electronic ballots were collected, recorded, and certified by Creative Scanning Solutions, Inc. an independent organization contracted by the North American Catalysis Society for this purpose.

On behalf of the Society and of the catalysis community at-large, we would like to thank the 13 nominees for their willingness to stand for election and to serve NACS.

Enrique Iglesia
President, North American Catalysis Society

Awards Presented by the North American Catalysis Society

The North American Catalysis Society sponsors six prestigious awards and lectureships to recognize the accomplishments of catalysis scientists and to promote the advancement of catalysis science in North America and world-wide.

Three of these awards include plenary lectures at NACS biannual meetings (Eugene J. Houdry Award in Applied Catalysis, Paul H. Emmett Award in Fundamental Catalysis, Michel Boudart Award for the Advancement of Catalysis, the latter jointly presented with the European Federation of Catalysis Societies). The F.G. Ciapetta and Robert Burwell Lectureships in Catalysis involve lectures at local club meetings and the presentation of the awards at the NACS meeting banquet. The NACS Award for Distinguished Service in the Advancement of Catalysis is the most recent recognition instituted by the Society. All of these awards are presented every two years and the nomination deadlines are listed in below. Additional information is available in the NACS website: <http://nacatsoc.org/awards/>.

Canvassing and Nomination Processes

NACS encourages all nominations for these awards and nominators and nominees need not be NACS members. The President instructs the Vice President to form a canvassing committee for each cycle of every award to ensure a full slate of outstanding candidates. This committee is led by the NACS Vice-President and consists of previous award recipients and recognized experts within the catalysis community at-large. The committee identifies worthy candidates and its Chair seeks nominators for these candidates, but provides no specific guidance about the preparation of the nomination packages beyond that provided on the NACS web site. The Chair also instructs the Secretary to contact all NACS local representatives to request that they canvass for nominations within their local sections. All nomination deadlines and cycles are also announced in the quarterly NACS newsletter.

Award Recipient Nomination Process

The jury that selects each NACS award recipient consists of scientists and engineers recognized as experts and representing industry,

academia, and national labs. The members of this jury must have no affiliation with any of the nominees and are specifically asked to disclose any conflicts of interest and to disqualify themselves without prejudice when a conflict exists. The selection jury is appointed by the NACS President, who seeks guidance in selecting its members from the Vice President and from senior members of the catalysis community. The identity of the jury members is kept in the strictest confidence and known only to the President; the members are also required to keep their participation in these committees confidential.

The NACS President provides the jury with the nomination packages for all candidates within two weeks of the deadline; in the intervening time, potential jury members are asked about their willingness to serve. The members of the jury rank the candidates and provide specific details for their selection in the case of the top three candidates. In some cases, jury members are asked to again rank the top two candidates side-by-side, after considering their respective nomination packages once again.

The recipient of the Award and his/her nominators are informed of the decision of the jury, followed by notification of jury members and of nominators of the other candidates. A formal announcement, composed by the President in consultation with the recipient and the nominator, is published in the NACS web site and the NACS newsletter and soon thereafter in Chemical and Engineering News. The awards are all presented at the biennial NACS meeting, where the respective citations are read and the award winners receive a plaque.

The NACS community at-large deserves congratulations and thanks for the excellent cadre of nominees that it has put forth and chosen and for their dedication as nominators and as members of the jury.

Awards

♦ Michel Boudart Award for the Advancement of Catalysis

- ♦ This award is sponsored by the Haldor Topsøe Company and administered jointly by the North American Catalysis Society and the European Federation of Catalysis Societies.
- ♦ Deadline: **9 November 2018**

- ♦ Webpage: <http://nacatsoc.org/awards/boudart/>

♦ The Robert Burwell Lectureship in Catalysis

- ♦ Sponsored by Johnson Matthey and administered by The North American Catalysis Society.
- ♦ Deadline: **25 January 2019**
- ♦ Webpage: <http://nacatsoc.org/awards/burwell/>

♦ The F. G. Ciapetta Lectureship in Catalysis (prior to 1973 The National Lectureship)

This award is sponsored by the W.R. Grace & Co. and The North American Catalysis Society.

- ♦ Deadline: **10 November 2017**
- ♦ Webpage: <http://nacatsoc.org/awards/ciapetta/>

♦ Paul H. Emmett Award in Fundamental Catalysis

- ♦ Award sponsored by the W.R. Grace & Co. and administered by the North American Catalysis Society.
- ♦ Deadline: **28 September 2018**
- ♦ Webpage: <http://nacatsoc.org/awards/emmett/>

♦ Eugene J. Houdry Award in Applied Catalysis

- ♦ Award sponsored by Clariant and administered by The Catalysis Society.
- ♦ Deadline: **27 July 2018**

- ♦ Webpage: <http://nacatsoc.org/awards/houdry/>

♦ Award for Distinguished Service in the Advancement of Catalysis

- ♦ This award is awarded by the North American Catalysis Society and sponsored by ExxonMobil and Clariant.
- ♦ Deadline: **25 May 2018**
- ♦ Webpage: <http://nacatsoc.org/awards/service/>

Award Deadlines

Boudart
9 November 2018

Burwell
25 January 2019

Ciapetta
10 November 2017

Emmett
28 September 2018

Houdry
27 July 2018

Service
25 May 2018



New! NAM25 App Information
<https://nam.confex.com/nam/2017/meetingapp.cgi>

Follow the above link to check out the NAM25 App! You will be able to navigate the entire scientific curriculum this years' program has to offer. Search the program by Day, by Session by Speakers, and more. You can even download the Program Overview, see a list of Exhibitors and floorplans.

Create a New Account or use existing login credentials to ensure you won't miss your favorite sessions.
For more information, please [click](#) the link above.

First Glance at the NAM25 Plenary Sessions

Monday 8:00AM-9:00AM	Plenary Lecture: Houdry Award - Recent Advances in Catalysis for Petrochemicals—Jeff Bricker, UOP-Honeywell
Tuesday 8:00AM-9:00AM	Plenary Lecture: Emmett Award - Catalysis on plasmonic metal nanoparticles—Suljo Linic, University of Michigan
Wednesday 8:00AM-9:00AM	Plenary Lecture: Boudart Award - Molecular Catalysts on Supports: Organometallic Chemistry Meets Surface Science—Bruce Gates, University of California, Davis

Keynote Speakers

Monday

James Dumesic 11:20AM	A Co-Solvent System Using Biomass-Derived Gamma-Valerolactone for Efficient Fractionation of Lignocellulosic Biomass
Paul J. Dauenhauer 2:30PM	Bubbles, Bottles and Bands from Biomass
Michael Reynolds 3:40PM	Catalyst Applications for the Production of Unconventional Gas and Tight Oil
Beatriz Roldan Cuenya 4:40PM	Operando Nanocatalysis: Size, shape, composition, and chemical state effects

Tuesday

Robert Schloegl 9:40AM	Why Operando Studies in Catalysis
Wei Li 10:20AM	Low Temperature Catalyst Technologies: Recent Developments and Future Needs
C. P. Kelkar 11:20AM	Innovations in Refinery Catalysis – A Smart Way to Enhance Value of Crude Oil
Magnus Skoglundh 2:30PM	Mobility of Copper in Zeolite-Based SCR Catalysts
Cynthia Friend 3:40PM	Design Principles for Improving Selectivity in Heterogenous Oxidation Catalysis

Wednesday

Bert Chandler 9:40AM	Improving the Selective Oxidation of Carbon Monoxide Present in Gaseous Streams Using Supported Gold Catalysts
Rob Hart 10:40AM	Opportunities and Challenges for the Chemical Industry Brought About by Shale Hydrocarbon Resources: a perspective from the American Chemistry Council Working Group on Catalysis
Michael Janik 11:20AM	Density Functional Theory Studies of Electrocatalysis - pH and Cation Effects on the Hydrogen Oxidation Reaction
William F. Schneider 1:30PM	Operando Catalysis - a Density Functional Theory Perspective
John R. Kitchin 1:30PM	Modeling Coverage Dependent Adsorption of Oxygen on Pd(111) Using a Neural Network Potential Trained from Density Functional Theory

Thursday

Stuart Soled 8:20AM	Improving Fischer-Tropsch Catalyst Formulations from Deactivation Learnings
Gang Fu 9:00AM	Catalysis at the Interface: A Coordination Chemistry View
Ryong Ryoo 1:30PM	Mesoporous zeolite catalysts with strong acidity and high metal-supporting capacity
David West 3:40PM	Bifurcations in the oxidative coupling of methane

Catalysis Club of Philadelphia



Caption: Attendees at the 2017 CCP Spring Symposium, DoubleTree Hotel, Wilmington, DE, May 11, 2017

Annual Spring Symposium

The Annual Catalysis Club of Philadelphia Spring Symposium was held at the DoubleTree Hotel in Wilmington, DE on May 11, 2017. The symposium featured nine speakers from across the country, both from industry and academia. The broad list of topics and speakers is below:

- **John Shabaker**, BP Products North America—*Emerging Challenges in Catalysis for*

Sustainable Production of Transport Fuels: An Industrial View

- **Laszlo Nemeth**, University of Nevada Las Vegas—*Science and Technology of Framework Metal-Containing Molecular Sieves Catalysts*
- **Mark Deimund**, ExxonMobil Research and Engineering Company—*Synthesis of Zinco-silicate Catalysts for the Oligomerization of Propylene*

- **C.Y. Chen**, Chevron Energy Technology Company—*Zeolite Catalysis with a Focus on Downstream Refining Applications*
- **Martin Johnson**, Eli Lilly and Company—*Continuous Reactors for Homogeneous Catalysis in Pharmaceutical Manufacturing*
- **Maureen Tang**, Drexel University—*Mechanisms and Materi-*

als for Alkaline Hydrogen Electrocatalysis

- **Maura Koehle**, University of Delaware, student poster contest winner—*Production of para-methylstyrene and para-divinylbenzene from furanic compounds*
- **Eranda Nikolla**, Wayne State University—*Design of complex metal/metal-oxide heterogeneous catalytic materials for energy and chemical conversion*
- **Janos Szanyi**, Pacific Northwest National Laboratory—*The mechanism of CO₂ reduction over Pd/Al₂O₃: a combined steady state isotope transient kinetic analysis (SSITKA) and operando FTIR investigation*

Catalysis Club of Philadelphia Award

Each year (since 1968), the club has sponsored and administered the **Catalysis Club of Philadelphia Award**. The award consists of a plaque and \$1000. The award recognizes an outstanding member of the catalysis community, who has made

significant contributions to the advancement of catalysis in the areas of science, technology, and/or organizational leadership. This year the awardee is **Dr. Thomas Colacot** from Johnson Matthey for his fundamental research contributions in Pd catalysis, as well as his synthetic skills at providing kilogram levels of extremely important catalysts for worldwide use. He will be giving an award talk in the fall to kick off the CCP 2017-2018 season.

The election of new CCP officers was completed. The new officers for the 2017-2018 season are:

- Chair: Josh Pacheco
- Chair-Elect: Eric Sacia
- Past Chair: Anton Petushkov
- Secretary: Dan Slanac
- Treasurer: Lifeng Wang
- Director: Thomas Yeh
- Director: Alan Allgeier
- Director: Sourav Sengupta
- Program Chair: Jim Hughes
- Arrangements Chair: Paul Pepin
- Webmaster: Carl Menning

- NACS Representative: Dion Vlachos

Catalysis Society of Metropolitan New York



Figure 1. Dr. Partha Nandi (ExxonMobil) delivering the day's opening lecture.

The Catalysis Society of Metropolitan New York held their Annual Symposium at the Research and Development Center of the ExxonMobil Research and Engineering Company in Clinton, NJ. This year's meeting took place on March 22, 2017 and was attended by 132 participants. The technical program was comprised of 1 keynote address, 6 oral presentations, and 48 posters on display. Furthermore, 11 organizations provided generous sponsorship for the event, with 7 companies exhibiting their latest products and developments for catalysis research and characterization.

The conference began with a lecture by Dr. Partha Nandi (ExxonMobil) on "O₂ Activation in Mesoporous Mixed Metal Oxides:

Implications in Catalytic Aerobic Oxidation". In this lecture (Figure 1), it was explained how insights gained from evaluating non-precious mesoporous mixed metal oxides for the oxygen reduction reaction were used in the development of novel catalysts for the partial oxidation of organic small molecules. The following keynote address by Prof. Suljo Linic (University of Michigan, Ann Arbor) was on the "Analysis of the Mechanism of Electrochemical Oxygen Reduction and Development of Ag- and Pt-alloy Catalysts for Low Temperature Fuel Cells". Prof. Linic described kinetic and micro-kinetic analyses that allowed for the identification of the elementary steps and molecular descriptors governing the rate of

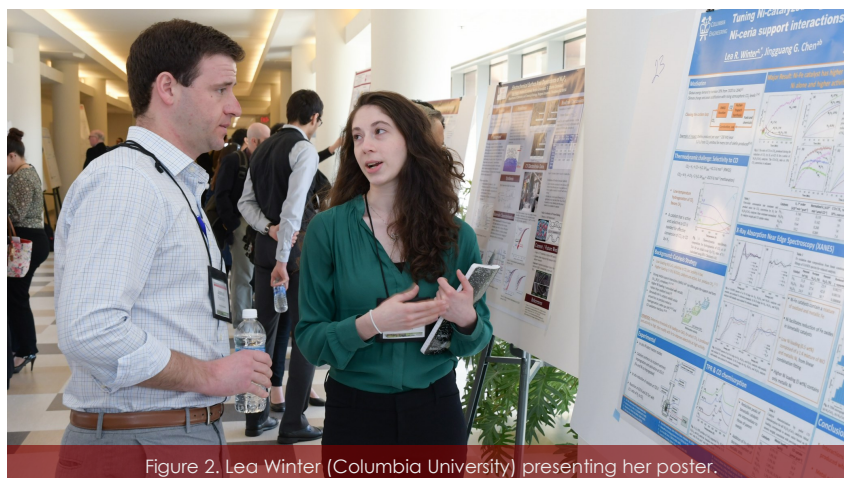


Figure 2. Lea Winter (Columbia University) presenting her poster.

ORR. Based on these findings, his group was able to synthesize alloys with superior ORR performance.

After this very inspiring lecture, the attendees broke for a poster session and vendor expo, which featured mainly academic but also industrial poster presenters (Figure 2). This session was followed by a talk by Prof. Daniel Esposito (Columbia University) on "Membrane-coated Electrocatalysts for the Hydrogen Evolution Reaction". Prof. Esposito highlighted the remarkable durability and HER performance of electrocatalysts with oxide overlayers, an architecture with tunable transport properties. Afterwards, Prof. Thomas Schwartz (University of Maine) presented "Strategies for the Con-

version of Biomass to Biobased Chemicals". Prof. Schwartz described how biological catalysts can be used to convert biomass into platform molecules suitable for upgrading by heterogeneous chemical catalysts. Furthermore, he showed an example of tuning active sites and transition states for lactic acid and triacetic acid lactone hydrogenation by control of their microenvironment.

Following a delicious lunch in the cafeteria and another poster session, Prof. Eleni Kyriakidou (The State University of New York, Buffalo) presented "A Comparative Study of ZSM-5 and BEA Zeolites for Low Temperature Passive Adsorption". Her research focused on hydrocarbon and NO temporary storage during vehicle cold starts

and subsequent release once emission control catalysts are catalytically active. Her results demonstrated the need for an ion-exchanged metal for effective performance in the presence of water. The next contribution by Dr. David Stockwell (BASF) on a "Continuous Age Distribution Method for Catalytic Cracking" described a new laboratory steam-deactivation method that reproduces the full distribution of ages found in the FCC 'equilibrium' catalyst mixture. He emphasized that with consideration for some surprising decay rates, quantitative, predictive results for catalyst replacement in the refinery can be achieved. Dr. Allen Burton (ExxonMobil) rounded out the technical program with a talk on "The Discovery, Structure Elucidation, and Characterization of Zeolite EMM-23: A Highly Unusual Zeolite". By the time Dr. Burton passed a physical model of the structure around the lecture hall, the audience appreciated the careful characterization and refinement work done to describe this new material.

At the close of the symposium, the Society awarded prizes for the best poster presentations, with Tao Chen (Stevens Institute of

Technology) and Elaine Gomez (Columbia University) taking first and second place honors, respectively. Weimang Wan (Columbia University) won third place and Robyn Smith (City College of New York) and Alexandros Karaiskakis (City College of New York) tied for fourth place. Finally, Dr. Ke Xiong (Ingredion) touched on the day's highlights and thanked the organizers, sponsors, and all attendees. Altogether, the 2017 Spring Symposium featured excellent lectures and poster presentations with a wide range of catalysis topics represented. Next year marks the 60th anniversary for the Catalysis Society of Metropolitan New York. We can look forward to another stimulating program of monthly meetings and another successful annual symposium. For more information, please visit www.nycsweb.org.

The Michigan Catalysis Society

Caption: **Presentation of the Parravano Award.** From left to right: Johannes Schwank, University of Michigan & Parravano Award Custodian; Andrew (Bean) Getsoian, Ford Motor Company & MCS Vice President; Hongfei Jia, Toyota Research Center of North America & MCS Director; Manos Mavrikakis, University of Wisconsin Madison & Parravano Award Winner; Vladimir Pushkarev, The Dow Chemical Company & MCS President



The Michigan Catalysis Society held its 38th Annual Spring Symposium on May 2nd. The event was hosted by Toyota Research Institute of North America and the University of Michigan, and held at the Gerald R. Ford Presidential Library in Ann Arbor, MI. A full day of events included 14 oral presentations by professors, students, and industrial researchers:

Fabio Ribeiro, Purdue University: "On the Reaction Mechanism

and the Nature of the Active Sites for Standard Selective Catalytic Reduction of NO_x on Cu/SSZ-13 Zeolites" (Invited Keynote Lecture)

- Pete Nickias, The Dow Chemical Company: "INSITE™ Technology: A Retrospective"
- Ming Yang, General Motors Global R&D: "Sinter-resistant platinum single atoms on alumina as an unexpected catalyst in purifying vehicle exhaust"

- Juliana S. A. Carneiro, Wayne State University: "Design of Ruddlesden-Popper Oxides with Optimal Activity for Surface Oxygen Exchange and Electrochemical Oxygen Reduction"
- Krishna R. Gunugunuri, Toyota Motors North America: "Inverse Spinel as Novel Catalysts for Direct NO Decomposition"
- Umar Aslam, The University of Michigan: "Engineering Energy Flow in Plasmonic Photocatalysis Through the Design of Multicomponent Nanostructures" (Student Oral Presentation Award Winner)
- Manos Mavrikakis, The University of Wisconsin Madison: "Reaction Mechanisms and Nature of Active Sites in Heterogeneous Catalysis: First-principles, Microkinetic Modeling, and Reaction Kinetics Experiments" (Giuseppe Parravano Award Recipient Lecture)
- David G. Barton, The Dow Chemical Company: "Discovery of Nano-Structured Yttrium Oxychloride Catalyst

for the Selective Dehydration of Phenol"

- Ravi Joshi, Purdue University: "Mechanism of Ethylene Dimerization on Isolated Nickel Cations Confined within Molecular Sieves"
- Joseph T. Grant, The University of Wisconsin Madison: "Selective Oxidative Dehydrogenation of Propane to Propylene using Boron Nitride Catalysts"
- Wei-Chung Wen, The University of Michigan: "Heterogeneous Catalysts for the Aldehyde-Water-Shift Reaction: Comparative Investigation of Molybdenum Carbide, Cerium Oxide, and Aluminum Oxide Supported Cu, Pt, and Au"
- Krishna Janmanchi, Dow Performance Silicones: "Two-Step Process for Synthesis of Dimethyldichlorosilane using Copper Aluminate Catalysts"
- Fan Lin, The University of Toronto: "Kinetic Requirements of Aldehyde Transfer Hydrogenation Catalyzed by Solid Brønsted Acid Catalysts"

- Andrew (Bean) Getsoian, Ford Motor Company: "Low Temperature Three-Way Catalysts for Future Gasoline Engines"

An evening poster session featured 14 poster presentations. Of these, two were recognized with the Outstanding Student Poster Award: Michael J. Cordon of Purdue University for "Catalytic Consequences of Hydrophobic Pockets Confining Lewis Acid Sites in Zeolites for Aqueous-Phase Sugar Isomerization," and Da Li of Wayne State University for "Visible Light Induced Photocatalytic Hydrogen Evolution Using a CdS-Ni₂P Hybrid Aerogel System"

The Giuseppe Parravano Memorial Award for Excellence in Catalysis Science Research was presented to Professor Manos Mavrikakis of the University of Wisconsin Madison (pictured). The award is given biennially in odd numbered years to an individual from North America to formally recognize outstanding contributions to catalytic science and technology.

The Michigan Catalysis Society also elected new members to the Executive Board for the next

year (2017-2018). The Executive Board is:

- President: Vladimir Pushkarev, The Dow Chemical Company
 - Vice-President: Andrew (Bean) Getsoian, Ford Motor Company
 - Secretary/Treasurer: Ming Yang, General Motors Corporation
 - Director: Hongfei Jia, Toyota Motors North America
 - Director: Galen Fisher, The University of Michigan
- Director: Eranda Nikolla, Wayne State University
- Representative to NACS: Eric Stangland, The Dow Chemical Company

The Michigan Catalysis Society thanks Toyota Motor North America, General Motors Company, Micromeritics Instrument Corp., Hiden Analytical Ltd, The Dow Chemical Company, ECO PHYSICS, INC, Thermo Fisher Scientific, and PIDC for their support!

The Organic Reactions Catalysis Society

The 27th ORCS Meeting - San Diego, CA - April 8-12, 2018



The Organic Reactions Catalysis Society is pleased to announce its biennial conference at the Catamaran Resort and Spa in San Diego, CA April 8th-12th 2018.

The Organic Reactions Catalysis Society is now soliciting nominations for the following awards.

The 2018 **Paul N. Rylander Award** for individuals who have made significant contributions to chemistry and the chemical industry in the field of catalysis of organic reactions.

The 2018 **Murray Raney Award** for individuals who have made significant contributions to chemistry and the chemical industry using base metal catalyst technology applied to organic reactions.

The 2018 **ORCS Early Career Achievement Award** for an individual scientist or engineer early in their careers who has made substantial contributions to the use of catalysis in organic reactions and shows

exceptional potential for future leadership in the field of catalysis.

Winners of these awards will be honored and provide plenary lectures at the 27th ORCS Conference in April 2018. More information on each of these awards and the nomination form can be found in the ORCS website (<http://orcs.org/>) under "Awards".

2018 Awards Nomination Procedure

Who can nominate for ORCS Awards?

Members of the ORCS and participants of ORCS meetings can nominate. We encourage the nominators to contact the nominees to make them aware of the details of the award, including award lectures to be given at the 27th ORCS Meeting in San Diego, CA.

What is in the nomination package?

Completed nomination form, statement of scientific and technical accomplishments - limited to one page; highlighting contributions, emphasizing how they have been a source of influence and two supporting letters, each limited to one page.

What is the award selection process?

The ORCS Executive Board appoints a chair of the awards committee, who subsequently selects 2-3 additional members. This subcommittee will review the nominations and identify the top three candidates for each

award. The ORCS board will then vote on the three finalists to select the winner.

What is the deadline for nomination and where should nomination packages be sent? For all awards, nominations should be submitted by **August 15, 2017**. Send the electronic nomination package (in one pdf document) to:

Professor Bert Chandler
ORCS Awards Subcommittee Chair
Center for Sciences & Innovation, 370K
Trinity University
One Trinity Place
San Antonio, TX 78212-7200
email: bchandle@trinity.edu

The 27th ORCS Meeting April 8-12, 2018 San Diego, CA

The Organic Reactions Catalysis Society is pleased to announce its biennial conference at the Catamaran Resort and Spa in San Diego, CA April 8th-12th 2018.



Technical topics will include:

- Catalysis for biomass oxidation
- Electrocatalysis and photocatalysis
- Catalysis of polymers for medical applications
- Catalysis for specialty chemicals and pharmaceuticals
- Catalysis to enable production of chemicals from sustainable sources
- Advances in sustainable and base metal catalysis
- Catalyst characterization and study of reaction and deactivation pathways

A short course on aspects of catalyst design, preparation, characterization &/or selection will be offered on Sunday, April 8th.

Confirmed Keynote Speakers:

Neil Garg
Professor of Chemistry and Biochemistry
UCLA

Yuriy Román
Associate Professor of Chemical Engineering
Massachusetts Institute of Technology

Matthew Sigman
Peter J. Christine S. Stang Presidential
Endowed Chair of Chemistry
University of Utah



Important Dates

Award Nominations Call: 15 May 2017

Award Nominations Due: 15 August 2017

Awards Notifications: 1 October 2017

Abstract Submissions Due: 15 September 2017

Abstract Acceptance Notification: 17 November 2017

Conference Registration Opens: 1 November 2017

Conference Dates: 8-12 April 2017

Venue: Catamaran Resort and Spa, San Diego, CA USA

Pacific Coast Catalysis Society

The 2017 Annual Meeting of the Pacific Coast Catalysis Society will be held at the University of California, Davis, on Monday, September 18, 2017. This annual, regional, one-day meeting will cover a variety of topics in catalysis. The meeting is hosted at UC Davis by the current Co-Vice Chairs, Ron Runnebaum and Coleman Kronawitter. The meeting will include invited lectures and a poster session.

Confirmed invited speakers include:

- The recipient of the 2017 Burwell Lectureship in Catalysis – Dr. Jingguang Chen, Columbia University & Brookhaven National Laboratory
- Dr. Simon Bare, SLAC National Accelerator Lab
- Dr. Stacey Bent, Stanford University
- Dr. Phillip Christopher, University of California, Riverside
- Dr. Enrique Iglesia, University of California, Berkeley & Lawrence Berkeley National Laboratory
- Dr. Johannes Lercher, Technische Universität München & Pacific Northwest National Laboratory

- Dr. Adeola Ojo, Chevron Energy Technology Company
 - Dr. Philippe Sautet, University of California, Los Angeles
 - Dr. Susannah Scott, University of California, Santa Barbara
- For further information regarding the 2017 PCCS Annual Meeting, e.g., abstract submission, registration, location and schedule, please visit:

<https://pccs2017.ucdavis.edu>

Please note that the deadline for abstract submission is **July 1, 2017**.

Please contact the co-organizers at: pccs2017@ucdavis.edu, if you have any questions or for any assistance.

Southwest Catalysis Society



The Southwest Catalysis Society (SWCS) held its annual Spring Symposium on April 28th at the University of Houston. The event was attended by more than 170 people and the program consisted of seven invited speakers and 40 poster presenters. During the symposium, the 2017 SWCS Award was presented and five students were selected as poster award winners. Details of all award winners and invited speakers are provided below.

2017 SWCS Excellence in Applied Catalysis Award

Kathy M. Keiville, ExxonMobil Chemical Company—Catalyst Development & Manufacturing
Student Poster Award Winners

James Bruno (Trinity University), Madhuresh Choudhary (University of Houston), Quan Do (University of Houston), Dayne Swearer (Rice University), and Yi-yuan Yin (Rice University).

2017 Symposium Speakers

- **Joachim Sauer** (Humboldt University): “Different C-H Bond Activation Mechanisms on Solid Oxide Catalysts”
- **Ahmad Moini** (BASF Corporation): “Zeolite Catalysts for Diesel Emission Applications”
- **Aditya Bhan** (University of Minnesota): “Chemistries Mediating Deactivation in Methanol-to-Hydrocarbons Conversion

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and Strategies to Mitigate Them”

- **Jeff Bricker** (UOP Honeywell): “Recent Advances in Catalysis for Petrochemicals & Renewables”

Alex Bell (University of California at Berkeley): “The Influence of Local Composition, Structure, and Confinement on Catalyst Activity and Selectivity”

- **Mike Wong** (Rice University): “Catalytic Nanoparticle Constructs for Clean Water Reactions”
- **Giannis Mpourmpakis** (University of Pittsburgh): “Computational Design of Catalytic Nanoparticles”

Image Captions

Top Panel: Left-Kathy Keiville receives the SWCS Excellence in Applied Catalysis Award from Jeff Rimer (SWCS Chair). Top right-Student poster award recipients with the SWCS poster session coordinators. Bottom right-Photograph of the symposium ballroom.

Lower Panel: Top-Teng Xu, Jeff Rimer, Joachim Sauer, Ahmad Moini, Alex Bell, Jeff Bricker, Aditya Bhan, Yanni Mpourmpakis, and Lin Luo. Bottom-SWCS leadership team (from left to right): Nik Soultanidis, John Novak, Ale Rivas-Cardona, Jeff Rimer, Travis

Tri-State Catalysis Society



The Tri-State Catalysis Society 2017 Symposium was held on March 24, 2017 at the Kingsgate Marriott Conference Center at the University of Cincinnati. Symposium Sponsors: Clariant and Micromeritics. The Symposium included invited presentations, two keynotes and student research overview presentations.

Tri-State Catalysis Society 2017 Symposium Presentations

KEYNOTE Presentation—
Jeffrey T. Miller, *Purdue University*:
“Zinc Promotion of Platinum for Light Alkane Dehydrogenation: Insights into Catalyst Geometric and Electronic Structure”

- Aravind Asthagiri and Minkyu Kim, *The Ohio State University*: “CO oxidation on PdO(101): Role of oxygen vacancies
- Vladimir Friedman and Rong Xing, *Clariant*: “Investigating CrO_x/Al₂O₃ catalyst model: II Relative activity of the chro-

mium species on the catalyst surface.”

- Jacek Jasinski, *University of Louisville, Conn Center*: “3D carbon Structures for Catalytic and Energy Applications”
- Umit Ozkan, Doruk Dogu, Katja Meyer, Seval Gunduz, Dhru-ba Deka *The Ohio State University*: “Electrocatalytically-assisted Oxidative Dehydrogenation (ODH) of Ethane”
- Will Shafer, *University of Kentucky, Center for Applied Energy Research*: “Oxygenate Selectivity on Various FT Catalysts”
- Mahendra Sunkara, *University of Louisville, Conn Center*: “Catalysts and Adsorbents by Design Using Nanowire Based Materials”
- Burtron H. Davis, *University of Kentucky, Center for Applied Energy Research*: “Erika

Cremer: The Discovery of GC but no Nobel Prize”

- **KEYNOTE Presentation—**
Rajamani Gounder, *Purdue University, Davidson School of Chemical Engineering*:
“Catalysis in a cage: Solvation and dynamics of active copper sites in chabazite zeolites during NO_x SCR with NH₃”
- Peter Smirniotis, *University of Cincinnati, Chemical Engineering*: “Modified Ferrites as Catalysts for High Temperature Water Gas Shift Reaction in Membrane reactors”
- Josh Spurgeon, *University of Louisville, Conn Center*:
“Reduced SnO₂ Porous Nanowires with a High Density of Grain Boundaries as Catalysts for Efficient Electrochemical CO₂-into-HCOOH Conversion”
- Buchang Shi, *Eastern Kentucky University, Department of Chemistry*: “The Mechanism of Fischer-Tropsch Synthesis”
- Michela Martinelli, *Center for Applied Energy Research, University of Kentucky*: “The effect of alkali doping during water-gas shift, formic acid decomposition and methanol steam reforming”
- Dionysious Demetriou Dionysiou, *University of Cincinnati, Engineering Research Center*: “Destruction of Cyanotoxins using Photocatalysts”
- Uschi Graham, Alan Dozier, Burt Davis, Eileen Birch, Lawrence Drummy, Krishnamurthy Mahalingam, Joseph Brain; *Center for Applied Energy Research, NIOSH/DART, US Air Force Research Lab, Harvard T.H. Chan School of Public Health*: “In vivo transformation, reactivity and catalytic effects of ceria nanoparticles after inhalation: Oxidative Stress”
- Student Research Overview Presentation—Sathya Kanakaraj (presenter) Vesselin Shanov, *University Cincinnati*: “Carbon Nanostructural Materials for Energy Storage”
- Student Research Overview Presentation—Dhru-ba Deka (presenter), Katja Meyer, Doruk Dogu, Seval Gunduz, Nathaniel Krammer, Anne Co, Umit Ozkan, *The Ohio State University*: “High Temperature Co-electrolysis of CO₂ and H₂O to produce Synthesis Gas”

- Student Research Overview Presentation—Mark Haase (presenter), Vesselin Shanov, *University of Cincinnati*: “Advanced Imaging of Carbon Nanostructure Materials”
- Student Research Overview Presentation—Kuldeep Mam-tani, Deeksha Jain (presenter), Anne Co, Umit Ozkan, *The Ohio State University*: “Nature of Active Sites in Nitrogen-Doped Carbon nanostructures for Oxygen Reduction Reaction”
- Student Research Overview Presentation—Saurabh Ailawar (presenter), Gokhan Celik, Seval Gunduz, Hyuntae Sohn, Paul Edmiston, Umit Ozkan, *The Ohio State University*: “--Hydrodechlorination of Trichloroethylene Using Pd Supported on Swellable “Organically Modified Silica (SOMS) in Aqueous Phase”

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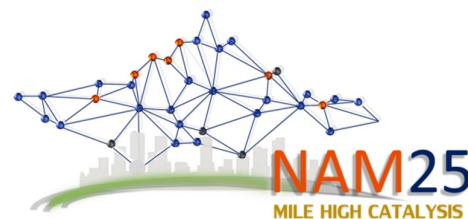
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25th North American Catalysis Society Meeting



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