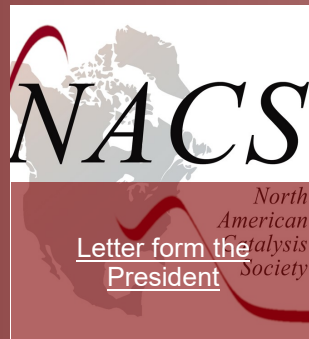


# NACS Newsletter

VOLUME LV, ISSUE 1  
WWW.NACATSOC.ORG



Cong-Yan Chen  
Ciapetta Award



Enrique Iglesia  
Service Award



Thomas Jaramillo  
Emmett Award



Beatriz Roldan  
Emmett Award



Deng-Yang Jan  
Houdry Award



Manos Mavrikakis  
Burwell Award



Graham Hutchings  
Boudart Award

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## Letter from the President



I would like to congratulate the winners of the six awards presented by the North American Catalysis Society. These prestigious awards recognize the excellence of researchers both in North America and around the globe. In order to recognize the growing number of excellent young researchers in catalysis, the

NACS Board has approved for selecting up to two winners for the Paul H. Emmett Award. As described in this newsletter, the following researchers were selected by their peers as the award recipients for the 2019-2021 award cycle:

Dr. Cong-Yan Chen: F.G. Ciapetta Lectureship in Catalysis

Prof. Enrique Iglesia: Award for Distinguished Service in the Advancement of Catalysis

Dr. Deng-Yang Jan: Eugene J. Houdry Award in Applied Catalysis

Prof. Graham Hutchings: Michel Boudart Award for the Advancement of Catalysis

Prof. Manos Mavrikakis: Robert Burwell Lectureship in Catalysis

Prof. Thomas Jaramillo and Prof. Beatriz Roldan-Cuenya: Paul H. Emmett Award in Fundamental Catalysis

Please join me in congratulating them for the well-deserved honor! They will be recognized in the award banquet during the next NAM in New York City, scheduled to be held on May 22-27, 2022.

Jingguang Chen  
President, NACS

## Election for Directors-at-Large

The election for Directors-at-Large is scheduled to start on April 15, 2021. NACS will be using online balloting as the only way to cast your vote. We have contracted with a firm that is experienced in on-line voting to ensure the accuracy and confidentiality of the process.

You will be receiving two email messages before the start of the election with the subject headline "NACS ELECTIONS FOR DIRECTORS-at-LARGE". The first email will be in your mail box the first week of April containing a link to download a special issue of the newsletter with the biography of all the candidates. The second email will be containing your username, unique password and a link to a restricted voting webpage. Please don't delete this email until you cast your vote. If you have a problem receiving this email, please contact Edrick Morales at [edrickmorales@live.com](mailto:edrickmorales@live.com).

The voting site's log in page will have instructions on how to cast your electronic ballot.

You can cast your vote starting on April 15. The voting webpage will be held open for two weeks to those members of NACS (including students) who reside within North America. Background information for each candidate will be available on the ballot site with a link associated to each candidate's name. On the ballot website, you

will be selecting four candidates from academia and two candidates from Industry and National Labs for a total of six candidates for the office of Director-at-Large.

Voters will need to log back in and complete the ballot from scratch if they log out or close the browser window without submitting their ballot. Your password will be deactivated after you record your vote.

Links to download the candidate biographies will be available on the Home page of NACS website.

The online balloting website will close on April 29.



## Cong-Yan Chen of Chevron is the recipient of the 2020 F. G. Ciapetta Lectureship in Catalysis



I am pleased to announce that Dr. Cong-Yan Chen of Chevron is the recipient of the 2020 F. G. Ciapetta Lectureship in Catalysis. Dr. Chen is also an adjunct professor in the Department of Chemical Engineering at the University of California at Davis. The award is administered by the North American Catalysis Society and sponsored by the W. R. Grace & Co. It is to be awarded biennially in even-numbered years. The award consists of a plaque and an honorarium of \$5,000. The recipient may be invited to lecture

at some of the local catalysis clubs during the two-year period covered by this award.

Dr. Cong-Yan Chen's research for over 25 years at Chevron covers various areas in the field of fundamental and industrial catalysis including synthesis and characterization of microporous and mesoporous molecular sieves, structure-property relationships of zeolites, adsorption, diffusion and reaction mechanisms. The work has had an emphasis on invention and development of catalytic applications of zeolites and other catalysts in refining and petrochemistry. He and his group developed several catalytic processes of industrial importance. In one example, alkane disproportionation is applied in upgrading or eliminating liquid petroleum gas (LPG, consisting of propane and butanes) at remote locations, with the target of integrating the resulting ethane into natural gas and blending the resulting C5+ liquid into crude oil while saving the transportation and storage facilities for LPG. It provides an economic and environmentally be-

nign process more attractive than complex combinations of other existing technologies. Dr. Chen's work has been pioneering in the development of borosilicate zeolites in the area of aromatics creation and transformations in the petrochemicals sector. In another example, a novel renewable base oil technology is translated into commercial value via zeolite catalysis, raising the lubricants' performance to the next level with environmental benefits and resource sustainability.

Congratulations!

Jingguang Chen  
President, North American Catalysis Society

## Enrique Iglesia is the recipient of the 2021 NACS Award for Distinguished Service in the Advancement of Catalysis



I am pleased to announce that Professor Enrique Iglesia of the University of California at Berkeley and Pacific Northwest National Laboratory is the recipient of the 2021 NACS Award for Distinguished Service in the Advancement of Catalysis. This award is jointly sponsored by Clariant and ExxonMobil Research and Engineering and is administered by the North American Catalysis Society. The award consists of a plaque and a prize of \$5,000. The plaque will be presented during

the closing banquet ceremonies at the 2021 North American Meeting of the Catalysis Society (NAM27 in New York City).

The NACS Award for Distinguished Service in the Advancement of Catalysis recognizes an individual who advanced catalytic chemistry or engineering by significant service to the catalysis community in addition to technical accomplishments.

Dedication to catalysis through service and leadership has been a hallmark throughout the professional career of Enrique Iglesia, from his Princeton student days as President of AIChE and Tau Beta Pi local chapters, to Section Head for Catalysis Science at Exxon, and as the mentor of a prolific group at Berkeley. Early on, he served ACS and AIChE in leadership positions, in which he championed the coalescence of catalysis within the Catalysis Secretariat (later a Division) at ACS and the Catalysis and Reaction Engineering Division at AIChE. He has served IACS as Program Co-Chair of the 11th ICC, as Vice-President and President-Elect, and as the 17th ICC Meeting Chair. He

has served NACS as Vice President and President and as Meeting Co-Chair for its NAM21. In each role, as well as in his tenure as NAE Section 3 Chair and Search Committee Chair, he has focused on broadening the membership and on encouraging, mentoring, and recognizing the achievements of young scientists and engineers. Perhaps his most lasting legacy comes from his thirteen-year tenure as Editor-in-Chief of Journal of Catalysis. Anyone who interacted with him in that role, and in all others, knows his passion for excellence in the study and practice of catalysis. The award citation reads "For tireless dedication to the stewardship of catalysis and for encouraging, mentoring, and recognizing its practitioners".

Jingguang Chen  
President, North American Catalysis Society

# 2021–2022 Paul H. Emmett Award in Fundamental Catalysis

I am pleased to announce the winners of the 2021–2022 the Paul H. Emmett Award in Fundamental Catalysis. This award recognizes and encourages individual contributions 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. The award winner must not have turned 46 on April 1st of the award year. The award consists of a plaque and an honorarium of \$5,000. The plaque will be presented during the closing banquet ceremonies at the next North American Meeting of the Catalysis Society (NAM27 in New York City). The awardees will also present a Plenary Lecture at the NAM meeting.

The NACS Board has recently approved to honor up to two Emmett awardees every two years. The two awardees for the 2021–2022 cycle are (listed alphabetically):

**2021 Winner: Professor Thomas Jaramillo** of Stanford University

**2022 Winner: Professor Beatriz Roldan Cuenya** of the Fritz Haber Institute



**Professor Jaramillo** is recognized for his efforts in the design

and development of catalysts for sustainable chemical processes. Jaramillo's research has deepened our understanding of catalytic mechanisms and interfacial phenomena, leading to catalyst systems with improved properties, and serving as a foundation for the development of new technologies. This includes, for instance, processes that employ renewable energy for the sustainable production of fuels and chemicals. In this respect, Jaramillo has synthesized and investigated advanced catalyst systems for hydrogen ( $H_2$ ) production by water electrolysis and by solar photoelectrochemistry, as well as for the electrochemical conversion of  $CO_2$  to produce valuable carbon-based products, e.g. acetaldehyde and ethanol, among other processes. Much of Jaramillo's work has focused on developing catalysts from earth-abundant elements, either minimizing or avoiding the use of precious metals. A key aspect of his research has involved method development, including catalyst benchmarking efforts, new reactor designs, coupling analytical chemistry techniques for the iden-

tification and quantification of reaction products, and operando methods to study catalysts under true operating conditions. Jaramillo's research has advanced catalyst development efforts for cost-effective, clean energy technologies, engineering catalyst materials at the nano- and atomic-scale to achieve active sites with desired properties.



**Professor Roldan** has made exceptional contributions to the mechanistic understanding of

thermal and electro-catalytic reactions based on the use of well-defined nanostructured materials combined with advanced in situ and operando microscopic and spectroscopic characterization. Her challenging experimental catalytic research has greatly advanced our fundamental knowledge of how geometric and electronic properties influence the catalytic performance. In particular, she has provided insight into re-utilization of  $CO_2$  through its thermal or electrochemical conversions to higher value chemicals and fuels such as methanol, ethylene, or ethanol. A highlight of her research program are studies featuring the dynamic nature of nanocatalysts under reaction conditions using synchrotron-based operando spectroscopy and diffraction methods combined with environmental transmission electron microscopy. She has pioneered the combination of colloidal chemistry approaches and electrochemical synthesis for the preparation of model catalytically active materials, and their chemical functionalization and restructuring using plasma treat-

ments. Overall, her work has served to bridge the gap between surface science and "real" catalysis by creating scalable ex situ synthesis approaches leading to monodispersed nanomaterials and exposing them to in depth physico-chemical characterization under realistic reaction conditions. Her research will help to guide the rational design of the next generation of catalysts based on atomistic understanding.

*Congratulations to Professor Jaramillo and Professor Roldan!*

## Deng-Yang Jan of Honeywell UOP is the recipient of the 2021 Eugene J. Houdry Award in Applied Catalysis



The purpose of the Eugene J. Houdry 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 applications.

Dr. Jan's technical focus is developing platform knowledge and introducing enabling concepts to develop future generation products and processes in Aromatics & Derivatives, and Olefins & Detergents. Since 2000, Dr. Jan and Team UOP have been focusing on zeolitic catalysis by applying UOP Zeolitic Material platform to the technology portfolio including aromatics alkylation, isomerization, trans-alkylation, new routes for producing para-xylene, ethylbenzene, cumene, linear alkylbenzene and motor fuel. DY achievements include commercialize highly selective cumene alkylation (UOP Q-Max) with low capital and operating costs, linear alkylbenzene (UOP Detal for biodegradable detergent) at low utility cost enabling replace HF

alkylation, Aromatics Isomerization (UOP Isomar), Aromatics Trans-Alkylation (UOP Tatoray) enabling flexible process of feedstock of varying compositions.

Dr. Jan received B.S. in Chemistry from National Cheng-Kung University, M.S. in Inorganic Chemistry in National Tsinghua University (Taiwan) and a Ph.D. in Chemistry from The Ohio State University in 1985. He has over 100 issued US patents and 30 peer review journal publications. Dr. Jan has been recognized with several awards, including the the 2007 Honeywell Fundamental Technology Development Award, the 2016 Herman Pines Award for his contribution to commercializing EB/Cumene and Detergent, and the 2017 Honeywell Distinguished Technology Award given for outstanding technical contributions over the course of a career.

Jingguang Chen  
President, North American Catalysis Society

I am pleased to announce that Dr. Deng-Yang (DY) Jan of the Honeywell UOP is the recipient of the 2021 Eugene J. Houdry Award in Applied Catalysis. This award is sponsored by Clariant and is administered by the North American Catalysis Society. The award consists of a plaque and a prize of \$5,000. The plaque will be presented during the closing banquet ceremonies at the 2021 North American Meeting of the Catalysis Society (NAM27 in New York City).

## Manos Mavrikakis is the recipient of the 2021 Robert Burwell Lectureship in Catalysis



I am pleased to announce that Professor Manos Mavrikakis of the University of Wisconsin is the recipient of the 2021 Robert Burwell Lectureship in Catalysis, 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, which will be presented at the award banquet at the NAM27 meeting. An additional \$4,500 is available to cover travelling expenses in North America. The

awardee is expected to lecture at many of the local catalysis clubs.

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. 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.

Professor Mavrikakis has elucidated the molecular level mechanisms of important heterogeneously catalyzed and electrocatalytic chemical reactions. Through a combination of *quantum mechanical calculations with microkinetic modeling and reaction*

*kinetics experiments*, his group has elucidated novel reaction mechanisms, including new key intermediates, among others, for the water-gas-shift reaction and methanol synthesis over industrially relevant copper-based catalysts. Further, Mavrikakis has developed a rigorous iterative approach for elucidating the nature of the active sites for a catalytic reaction, while the reaction is taking place. In particular, through the combination of approaches mentioned above, his group developed an approach capable of deriving information on the intermediates and at what coverages they decorate the active sites as a function of pressure, temperature, and feed composition. This iterative approach is uniquely positioned to predict the nature of the active sites as a function of reaction conditions, a goal that remains mostly elusive from the most elaborate *in-situ* and *operando* experimental characterization techniques. Mavrikakis has

Continue on next page, right column →



# 2021 Michel Boudart Award in Fundamental Catalysis for Graham Hutchings for Groundbreaking Work on Gold and Selective Oxidation Catalysis

Graham Hutchings, an alumnus of University College London (UCL, United Kingdom), is currently affiliated at Cardiff University (United Kingdom) as a Regius Professor. He has been the founding Director of the Cardiff Catalysis Institute, which he has been heading in the period 2008–2019. The combination of industrial and academic experiences in both the UK (ICI, Universities of Liverpool and Cardiff) and South Africa (AECI Ltd and University of Witwatersrand) has given Professor Graham Hutchings a research perspective that has enabled him to engage with complex catalysis problems, study them with ingenuity, and provide practical solutions through advances in basic science.

Graham Hutchings is perhaps best known for his groundbreaking fundamental work on gold catalysis. In 1985 he predicted gold to be the best catalyst for acetylene reactions, subsequently confirming this experimentally. He remains a pioneer of field of gold catalysis and continues to play a leading role in the discovery of

nano-gold catalysts for new applications. The work of his research group on gold catalysis has enabled the commercialisation of gold as a catalyst for vinyl chloride production by acetylene hydrochlorination (*J. Am. Chem. Soc.* 2015, **137**, 14548–14557) replacing a highly polluting mercury catalyst. Working in collaboration since 2007 with Johnson Matthey enabled the commercialization of the catalyst. Using advanced characterization, his research group confirmed the nature of the active site as supported fully dispersed gold cations, which is consistent with his original 1985 prediction (*Science* 2017, **355**, 1399–1402). Replacing the mercury catalyst that has been used commercially for decades has enabled the Minimata Convention (<http://www.mercuryconvention.org/>) to become international law in May 2017 ensuring that mercury can no longer be used in any application.

In addition to his original and impactful work on gold, he has modified the properties of gold catalysts by alloying this noble metal with other metals. Notably



his group has shown that supported gold-palladium alloys are highly effective solid catalysts for a range of technically demanding chemical reactions. Examples include selective methane oxidation to methanol (*Science* 2017, **358**, 223–226) and hydrogen peroxide synthesis (*Science* 2016, **351**, 965–968). He has recently used these materials for water purification and is now interested in combining bio- and chemocatalysis for new applications (*Nat. Commun.* 2019, **10**, 4178).

Professor Hutchings is a highly recognized scholar in the field of catalysis, and received many national and international scientific honors and awards. He also has done a number of outreach activities and services to the catalysis community and has kept the United Kingdom at the forefront of catalysis research over the years and is very well connected within Europe and worldwide. His lectures are outstanding and he is able to reach and captivate the younger generations. His services to the field are diverse, impactful

and highly appreciated within the scientific community.

*More information on Professor Graham Hutchings:* <https://www.cardiff.ac.uk/people/view/38519-hutchings-graham>

*More information on the Michel Boudart Award for the Advancement of Catalysis:* The Award is administered jointly by the European Federation of Catalysis Societies (EFCATS) and the North American Catalysis Society (NACS), and is sponsored by the Haldor Topsøe Company. The Award is presented biennially in odd numbered years. The recipient will give plenary lectures at the biannual meetings of both EFCATS (EuropaCat) and NACS (NAM). The award consists of a plaque and a prize of \$6,000. The Award recognizes and encourages individual contributions to the elucidation of the mechanism and active sites involved in catalytic phenomena and to the development of new methods or concepts that advance the understanding and/or practice of heterogeneous

catalysis. The Award selection process will emphasize accomplishments and contributions published within the five preceding years. Candidates may be nominated without any restriction of national origin, thus reflecting the international scope of the career and contributions of Michel Boudart.



*From previous page, 2021 Robert Burwell Lectureship in Catalysis*

contributed extensively to understanding and predicting the structure sensitivity of catalytic and electrocatalytic reactions, and has guided the inorganic synthesis community towards the synthesis of improved electrocatalysts for a variety of reactions.

Jingguang Chen  
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

- **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: **5 November 2021**
  - Webpage: <http://nacatsoc.org/awards/ciapetta/>

- **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: **20 May 2022**
- Webpage: <http://nacatsoc.org/awards/service/>

- **Eugene J. Houdry Award in Applied Catalysis**

- Award sponsored by Clariant and administered by The Catalysis Society.
- Deadline: **22 July 2022**
- Webpage: <http://nacatsoc.org/awards/houdry/>

- **Paul H. Emmett Award in Fundamental Catalysis**

- Award sponsored by the W.R. Grace & Co. and administered by the North American Catalysis Society.
- Deadline: **23 September 2022**
- Webpage: <http://nacatsoc.org/awards/emmett/>

- **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: **6 November 2022**

- 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: **20 January 2023**
- Webpage: <http://nacatsoc.org/awards/burwell/>

## Award Deadlines

Ciapetta  
5 November 2021

Service  
20 May 2022

Houdry  
22 July 2022

Emmett  
23 September 2022

Boudart  
4 November 2022

Burwell  
20 January 2023

# Previous Winners of the North American Catalysis Society Awards

## Michel Boudart Award for the Advancement of Catalysis

2007 Alexis T. Bell  
 2009 Avelino Corma Canos  
 2011 James A. Dumesic  
 2013 Jens Norskov  
 2015 Hajo Freund  
 2017 Bruce Gates  
 2019 Enrique Iglesia

## The Robert Burwell Lectureship in Catalysis

1983 Robert L. Burwell  
 1985 Wolfgang M. H. Sachtler  
 1987 John B. Peri  
 1989 Jack H. Lunsford  
 1991 Kamil Klier  
 1993 Werner O. Haag  
 1995 Gary Haller  
 1997 Wayne Goodman  
 1999 Harold Kung  
 2001 Tobin Marks  
 2003 Alexis T. Bell  
 2005 Enrique Iglesia  
 2007 James Dumesic  
 2009 Bruce Gates  
 2011 Johannes A. Lercher  
 2013 Charles Campbell  
 2015 Matt Neurock  
 2017 Jingguang Chen  
 2019 Abhaya Datye  
 2021 Manos Mavrikakis

## The F. G. Ciapetta Lectureship in Catalysis

1967 Jan H. deBoer  
 1968 John Sinfelt  
 1969 Stanislas Teichner  
 1972 George C.A. Schuit  
 1973 Jose J. Fripiat  
 1974 Dennis A. Dowden  
 1975 Pierre C. Gravelle  
 1976 Gerhard Ertl  
 1977 John R. Anderson  
 1986 Michel Boudart  
 1988 James D. Idol  
 1990 W. Keith Hall  
 1992 R. van Santen  
 1994 John J. Rooney  
 1996 George Kokotailo  
 1998 Avelino Corma  
 2000 Gary McVicker  
 2002 John Monnier  
 2004 Douglas Stephan  
 2006 Stuart Soled  
 2008 Robert Farrauto  
 2010 Jeffrey T. Miller  
 2012 Thomas Degnan  
 2014 Paul Barger  
 2016 Ahmad Moini  
 2018 Teh Ho  
 2020 Cong-Yan Chen

## Paul H. Emmett Award in Fundamental Catalysis

1971 Richard J. Kokes  
 1973 John H. Sinfelt  
 1975 Jack H. Lunsford  
 1977 Gabor A. Somorjai  
 1979 Gerhard Ertl  
 1981 Peter A. Jacobs  
 1983 Robert J. Madix  
 1985 Alexis T. Bell  
 1987 M. Albert Vannice  
 1989 James A. Dumesic  
 1991 Harold Kung  
 1993 Mark Barteau  
 1995 Mark Davis  
 1997 Enrique Iglesia  
 1999 Raymond Gorte  
 2001 Donna Blackmond  
 2003 Francisco Zaera  
 2005 Matthew Neurock  
 2007 Robert J. Davis  
 2009 Manos Mavrikakis  
 2011 Bert Weckhuysen  
 2013 Christopher W. Jones  
 2015 Christophe COPÉRET  
 2017 Suljo Linic  
 2019 Javier Pérez-Ramírez  
 2021 Thomas Jaramillo  
 2022 Beatriz Roldan Cuenya

## Eugene J. Houdry Award in Applied Catalysis

1971 Herman S. Bloch  
 1973 Charles J. Plank  
 1975 Heinz Heinemann  
 1977 Vladimir Haensel  
 1979 Adalbert Farkas  
 1981 Herman Pines  
 1983 Milton Orchin  
 1985 John W. Ward  
 1987 Ralph J. Bertolacini  
 1989 Jule A. Rabo  
 1991 James Roth  
 1993 Wolfgang M. H. Sachtler  
 1995 Madan Bhasin  
 1997 John Armor  
 1999 Clarence Chang  
 2001 Leo Manzer  
 2003 Avelino Corma  
 2005 Henrik Topsøe  
 2007 Stacey Zones  
 2009 Jeffrey Beck  
 2011 James C. Stevens  
 2013 Giuseppe Bellussi  
 2015 Anne Gaffney  
 2017 Jeffery Bricker  
 2019 Hai-Ying Chen  
 2021 Deng-Yang (DY) Jan

## The NACS Award for Distinguished Service in the Advancement of Catalysis

2010 W. Nicholas Delgass  
 2012 John Armor  
 2014 Burtron H. Davis  
 2016 Gary L. Haller  
 2018 Alexis T. Bell  
 2021 Enrique Iglesia

### Award Deadlines

Ciapetta  
 5 November 2021

Service  
 20 May 2022

Houdry  
 22 July 2022

Emmett  
 23 September 2022

Boudart  
 4 November 2022

Burwell  
 20 January 2023



## Club News

### Great Plains Catalysis Society

The Great Plains Catalysis Society (GPCS) is pleased to announce that Dr. Qing Yang from Chevron Phillips was selected to receive the 2020 GPCS award for excellent in catalysis research. Dr. Yang will give a plenary during the 2021 GPCS virtual symposium. There is an ongoing call for the nominations of the 2021 GPCS award. The nomination package should be received by April 15, 2021. Nomination guidelines can be found on our website (<http://www.greatplainscatalysis.org/awards>).

Because of the pandemic, GPCS organized its annual meeting as a virtual symposium on September 18, 2020. Abhaya Datye from the University of New Mexico gave the plenary presentation. We also organized a panel discussion on two emerging topics – “acid catalysis in zeolites: challenges and opportunities” and “solvent effects in catalysis: fundamental and applications”, which were moderated by Jeff White (Oklahoma State) and Brent Shanks (Iowa State), respectively. The panel members includ-

ed experts from universities and industries (Phillips 66) in the GPCS region as well as external members including Jim Dumesic (Wisconsin-Madison) and Raj Gounder (Purdue). Four students received Junior Researcher Awards: Heng Dai (Houston), Jiajie Huo (Iowa State), Gengnan Li (Oklahoma), and Reda Bababrik (Oklahoma). The GPCS appreciates support from sponsors including Phillips 66, Waters, Parr Instrument Company, NACS, Iowa State University, NSF CBIRC, MDPI Catalysts, Chevron Phillips, Bruker, and Ames Laboratory.

The GPCS also established a program of virtual monthly webinars to feature diverse topics in catalysis and surface science from researchers in and outside the region. The list of speakers to date includes Kevin Leonard (Kansas), Igor Slowing (Ames Laboratory), Bin Wang (Oklahoma), John Gleaves (WUSTL), Wenyu Huang (Iowa State), Jamie Harris (Alabama), Eli Sutter (Nebraska-Lincoln), Matt Wulfers (Phillips 66), Marimuthu Andiappan (Oklahoma State), Marcus Foston

(WUSTL), and Rebecca Fushimi (Idaho National Laboratory). For those willing to give a presentation within the GPCS webinar series, please contact the program chairs: Ravi Joshi (Ravi.Joshi@p66.com) and Juan Bravo-Suàrez (jjbravo@ku.edu).

At the start of this year, Bala Subramaniam (University of Kansas) became the 3<sup>rd</sup> president of the GPCS. The current officers include Daniel Resasco (Past-President, NACS Representative, University of Oklahoma), Steven Crossley (President-Elect and Secretary, University of Oklahoma), Matt Wulfers (Treasurer, Phillips66), Walter Alvarez (Industrial Liaison, Phillips66), Bin Wang (Communications Director, University of Oklahoma), Jean-Philippe Tessonier (Director, Iowa State University), Brent Shanks (Director, Iowa State University), Bin Liu (Director, Kansas State University), and Placidus Amama (Director, Kansas State University).

### Michigan Catalysis Society

In 2020-2021, the Michigan Catalysis Society hosted 9 seminar speakers thus far. We have moved temporarily to a virtual seminar format due to COVID-19.

1. **Dr. Udayshankar Singh**, W.R. Grace & Co.-Conn.
2. **Prof. Yu Huang**, Dept. of Materials Science and Engineering at University of California, Los Angeles
3. **Prof. Bruce Gates**, Department of Chemical Engineering, UC Davis
4. **Prof. Friederike C. Jentoft**, Department of Chemical Engineering, University of Massachusetts Amherst
5. **Prof. E. Charles H. Sykes**, Department of Chemistry, Tufts University
6. **Prof. Hyunjoo Lee**, Department of Chemical and Biomolecular Engineering, Korea Advanced Institute of Science and Technology, Daejeon, South Korea
7. **Prof. Nirala Singh**, Department of Chemical Engineering, University of Michigan, Ann Arbor
8. **Prof. Christopher W. Jones**, School of Chemical & Biomolecular Engineering, Georgia Institute of Technology

9. **Prof. Cathy Chin**, Department of Chemical Engineering and Applied Chemistry, University of Toronto.

The Michigan Catalysis Society was unable to hold its 41<sup>st</sup> Annual Spring Symposium on May 2020 due to COVID-19 but has plans to host it in 2021.

The Executive Board for 2020-2021 is:

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## Club News

## Organic Reactions Catalysis Society

Since its inception, the Organic Reactions Catalysis Society (ORCS) has had the primary goal to advance the practical applications of catalysis by creating a forum to discuss technological breakthroughs, share best practices, and celebrate scientific achievements. Over the years, we have taken great pride in the academic and business relationships made possible through our biennial conference. Unfortunately, last year was difficult for all of us, our families, our friends and colleagues, and our industry. Through excellent leadership, the ORCS Chair and Executive Committee made the tough call to keep our members and families safe given the impact of COVID-19 on large gatherings such as conferences. The tough call was made to cancel the 2020 conference and begin plans for organizing the conference in 2022.

We are pleased to share that the 2022 ORCS Conference will be held on March 26 – April 1, 2022. We are currently evaluating holding the conference in the same venue, One Ocean Resort,

in Jacksonville, FL. Alternatively, we are also exploring the option to have a completely virtual conference. In some respects, connecting virtually has become part of our everyday lives. We are planning an amazing program that all our global membership can experience and enjoy no matter the forum. Additionally, we have invited all the award winners, keynote speakers and panel speakers who were scheduled to speak at the conference in 2020 to participate in the 2022 conference. Event and program details will be provided soon.

Please stay safe and we look forward to connecting with everyone in 2022. As always, if you have any concerns or questions, please contact us at [orcschair@orcs.org](mailto:orcschair@orcs.org).

Janette Villalobos, ORCS Chair,  
ChemTron Chemicals

Girish Srinivas, ORCS Past Chair,  
TDA Research

## Rocky Mountain Catalysis Society

#### Fourth Annual Rocky Mountain Catalysis Society Symposium

University of New Mexico, Albuquerque, NM

The Rocky Mountain Catalysis Society hosted its fourth annual symposium at the University of New Mexico in Albuquerque, New Mexico on April 5, 2019. There were approximately 35 attendees at this symposium. The meeting featured 8 invited talks over the course of the day given by Fernando Garzon (Univ. of New Mexico), Barr Zulevi (Pajarito Powder), Ivana Matanovic Gonzalez (Univ. of New Mexico), John Watt (Los Alamos National Lab), Jimmy Liu (Arizona State Univ.), Yan Qin (Univ. of New Mexico), Hongyu Fan (Univ. of New Mexico), and Achraf Nourddine (Univ. of New Mexico).

The morning session also featured lightning round presentations by the graduate students presenting posters later in the afternoon. Sixteen posters were presented in the afternoon poster session. The posters along with the lightning round were judged

by Prof. Michael Nigra (University of Utah), Prof. Morris Argyle (BYU), and Dr. Barr Zulevi (Pajarito Powder). The following students were recognized and won the following prizes:

#### 1st prize

**Patrick Coan**, University of Colorado at Boulder, "Phosphonic acid modifier for enhancing selective hydrodeoxygenation over supported Pt and Pd catalysts"

#### 2nd prize

**Yingqi Wang**, University of New Mexico, "Dynamics of CO oxidation on Rh surfaces"

#### 3rd prizes

**Allyson York**, Colorado School of Mines, "Carbon-coated MgO nanocatalysts for biomass upgrading: A study of coating and faceting"

**Jordi Ballesteros**, University of Colorado Boulder, "Tuning catalyst activity towards alcohol dehydrogenation using self-assembled monolayers".

**Shanti Kiran Nayak**, University of New Mexico, "Development of

ceramics for electrochemical oxidative coupling of methane".

The fifth annual Rocky Mountain Catalysis Society Symposium was scheduled to be held at the National Renewable Energy Laboratory (NREL) in early 2020. This was intended as a virtual meeting, but it was delayed to 2021. It was decided recently delaying the conference to a later day in 2021 to hold an in-person meeting, if possible.

## Club News

### Southwest Catalysis Society



The 2020 Southwest Catalysis Society Award for Excellence in Applied Catalysis goes to Dr. Steve King, a retired Senior Fellow of Dow Inc, to recognize Steve's significant contribution to amine catalysis and process technology.

Steve was the principal researcher responsible for the discovery of a number of catalyst systems that enabling ethyleneamines production from Reductive Amination Process. Starting with ethylene oxide, the Reduction Amination Process is energy efficient, material efficient, and environmentally friendly process, which displaced ethyleneamines production from reaction of 1,2-dichloroethane with ammonia. After the initial discovery, Steve further improved the

catalyst systems on product selectivity, catalyst life, as well as flexibility to optimize the product mix to match market needs. Besides amine catalysis, Steve's large impact on catalysis and process technology has been demonstrated at commercial scale in decarboxylation of carbonates to ethers, alkoxylation, and Splittable Surfactant Technology (TRITON® SP surfactants). These new catalysts address environmental issues and have large commercial impact.

Steve holds 71 granted US patents, was an invited speaker to numerous conferences and has been highly committed to the development of the next generation of catalysis researchers. Steve's history is one of excellence as a catalyst scientist, coupled with a striking record of translating bench discoveries rapidly and successfully into commercial operation.

The SWCS Award for Excellence in Applied Catalysis will be presented at the 2021 Virtual Award Symposium on April 23rd, 2021. For event details and up-

coming seminar and poster sessions please visit <https://www.swcatsoc.org/> and follow us on Twitter (@SouthwestCatSoc).

#### Call for Nominations for 2022 SWCS Award for Excellence in Applied Catalysis

The Southwest Catalysis Society (SWCS) is soliciting nominations for its eleventh annual "Award for Excellence in Applied Catalysis." The award consists of a plaque and a \$1,500 gift. It is awarded to an individual or a research team from North America to recognize outstanding contributions in applied research in either homogeneous or heterogeneous catalysis. *The emphasis of this award is to recognize individuals or teams who have contributed to the application or understanding of catalysis in a commercial setting.* The annual award is open to both industrial and academic applicants and will be presented at the Spring Symposium. Please contact Prof. Lars Grabow, University of Houston ([grabow@uh.edu](mailto:grabow@uh.edu)) for details. The deadline for nomination packages is **Nov 15, 2021**.

### Catalysis Club of Philadelphia

#### Call for Nominations — 2021 CCP Award

Each year the Catalysis Club of Philadelphia recognizes an outstanding member of the catalysis community, who has made significant contributions to the advancement of catalysis. Such advancement can be scientific, technological, or in organizational leadership. The Award consists of a plaque and a \$1,000 cash prize.

We appreciate your help in submitting nominations. The entire nomination package, including a resume and recommendation letters, should not be more than 10 pages and should include a ½ page tentative award announcement. The deadline for the receipt of nominations is April 9, 2021. Prior nomination packages sent in 2019 or later will automatically be considered for the 2021 Award.

Nomination letters along with supporting materials should be emailed to [ja-cob.g.dickinson@dupont.com](mailto:ja-cob.g.dickinson@dupont.com).

#### Past Recipients of the Award

1968 Adalbert Farkas  
1969 Charles J. Plank  
1970 Paul H. Emmett  
1971 G. Alex Mills  
1972 Alfred E. Hirschler  
1973 Paul B. Weisz  
1974 Roland C. Hansford  
1975 Paul Venuto  
1976 Heinz Heinemann  
1977 G.C.A. Schuit  
1978 George W. Parshall  
1979 Alvin B. Stiles  
1980 Abraham Schneider  
1981 James F. Roth  
1982 Robert Eischens  
1983 Edward Rosinski  
1984 James R. Katzer  
1985 N.Y. Chen  
1986 Bruce C. Gates  
1987 James E. Lyons  
1988 George Kokotailo  
1989 Maurice Mitchell, Jr.  
1990 Werner O. Haag  
1991 John A. Sofranko  
1992 Fran Waller  
1993 George Kerr  
1994 Theodore A. Koch  
1995 John N. Armor  
1996 Mae Rubin  
1997 Leo E. Manzer  
1998 Ray Gorte

1999 Anne M. Gaffney  
2000 Henry C. Foley  
2001 Mark Barteau  
2002 Steven D. Ittel  
2003 Frank E. Herkes  
2004 Jingguang Chen  
2005 Israel Wachs  
2006 James Dumesic  
2007 John Vohs  
2008 David Olson  
2009 Ted Oyama  
2010 Chuck Coe  
2011 Chunshan Song  
2012 Rostam Madon  
2013 Daniel Resasco  
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2015 Sourav Sengupta  
2016 Dion Vlachos  
2017 Thomas Colacot  
2018 Carmo Pereira  
2019 Fabio Ribeiro  
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