



INNOVATIONS IN CATALYSIS TO ADDRESS MODERN CHALLENGES: A Hybrid Chemical Sciences Roundtable Workshop

National Academy of Sciences Building
2101 Constitution Ave. NW, Washington, DC 20418

DAY 1
October 24th, 2022
NAS Members Room

9:00 AM **Welcome and Opening Remarks**

Linda Nhon
Program Officer, Chemical Sciences Roundtable

Keynote Presentations

Moderated by Mark Jones, CSR Member

9:05 AM Sustainable Chemistry Strategy Team at OSTP - Overviewing the Federal Landscape and Projecting Forward

David Berkowitz
National Science Foundation

9:35 AM Research to Enable a More Sustainable Chemical Enterprise

Susannah Scott
UC Santa Barbara

10:05 AM Catalysis Impact, Opportunities, and Challenges for a More Sustainable Future: An Industrial Perspective (Virtual)

Bob Maughon
Sabic

10:35 AM Panel Discussion

10:50 AM Break

Session I: Beyond Conventional Homo- and Heterogenous Catalysis- Emerging Topics in Main Group-, Organo-, and Bio-/Biohybrid Catalysis

Moderated by Jake Yeston, CSR Member

11:00 AM Biocatalysis - Recent Advances and Future Opportunities

Todd Hyster
Cornell University



- 11:20 AM Discussion
- 11:30 AM The Road to Decarbonizing Commodity Chemicals
Ive Hermans
University of Wisconsin-Madison
- 11:50 AM Discussion
- 12:00 PM The Big Future of Small Organic Molecules in Catalysis
Anita Mattson
Worcester Polytechnic Institute
- 12:20 PM Discussion
- 12:30 PM Lunch
- Session II: Emerging Techniques and Their Application Prospects**
Moderated by Karen Goldberg, University of Pennsylvania &
Audrey Moores, McGill University
- 2:00 PM Integrated Catalysis
Paula Diaconescu
UCLA
- 2:20 PM Discussion
- 2:30 PM Opportunities for the Productive Merger of Kinetic and Thermodynamic Control in Stereoselective Catalysis
Jeffrey Johnson
University of North Carolina at Chapel Hill
- 2:50 PM Discussion
- 3:00 PM Fundamentals and Opportunities of Mechanocatalytic Processes
Carsten Sievers
Georgia Institute of Technology
- 3:20 PM Discussion
- 3:30 PM Break



- 3:40 PM Alkene Difunctionalization as a Sustainable Approach to Organic Synthesis
Ramesh Giri
Pennsylvania State University
- 4:00 PM Discussion
- 4:10 PM Catalysis and Mechanochemistry, So Happy Together
James Mack
University of Cincinnati
- 4:30 PM Discussion
- 4:40 PM Closing Remarks
- 4:45 PM Day 1 Adjourns



DAY 2
October 25th, 2022
NAS Members Room

Session III: Carbon and Other Resources for the Future
Moderated by Christopher Bradley, Department of Energy

- 9:00 AM **Introduction**
- 9:05 AM Re-imagining Plastics Waste as a Valuable Feedstock
LaShanda Korley [virtual]
University of Delaware
- 9:25 PM Discussion
- 9:35 AM Converting Pollutants to Products via Electrochemical Wastewater Refining
William Tarpeh
Stanford University
- 9:55 AM Discussion
- 10:05 AM Break

10:15 AM **Session IV: Vistas In Catalysis**
Introduction by Carlos Gonzalez, CSR Member

Selected participants will be provided a virtual forum for sharing results. The format will be a rapid-fire session with each participant given 3-minutes (strictly enforced) for presentation. Pre-recorded presentations will be encouraged. Following the session, there will be a breakout session for discussion open to all participants and presenters.

- 11:15 AM **Reflections**
- 12:00 PM **Workshop Concludes**