

Chair-Elect
Partha Nandi
Past Chair
Lindsey Welch
Catalysis Society Representative
Marco Castaldi
Webmaster
Rachel Yang
Directors
Lucas Dorazio
Fuat Celik
Israel Wachs

The CATALYSIS SOCIETY of Metropolitan New York
www.nycsweb.org

Chair
Michele Sarazen
msarazen@princeton.edu

Treasurer
John Brody
John.F.Brody@Exxonmobil.com

Secretary
Boris Sheludko
boris@amogy.co

Student Representative
Samuel Moore
scmoore@princeton.edu

Wednesday, Oct 27th, 2021 at 4:00pm EST
Virtual Meeting: Zoom

Dr. Sourav K. Sengupta



Water & Protection
DuPont
Wilmington, DE

Catalysis – An Indispensable Tool for Sustainable Development

In the past three decades, the chemical industry has been in the forefront of making many novel and ingenious innovations to design cost-advantaged, inherently safe, environmentally friendly, and sustainable processes for the production of fuels, chemicals, and advanced materials. However, there is still a persistent public perception that the chemical industry is not doing enough to develop safe and sustainable chemistry. As a matter of fact, a large number of scientists, environmental scholars, business leaders, and governmental policymakers believe that the chemical industry must do more to develop sustainable processes to save our planet from the dire consequences of climate change. During the last three decades, DuPont has been developing many sustainable products and processes to this end.

Catalysis plays a crucial role in improving process efficiencies and process intensification. These lead to increased atom utilization, reduced by-product formation, cheaper processes, and lower capital investment – the basic tenets of sustainable process

and product development. Also, there is an increasing interest in using renewably sourced feedstocks for the production of fuels, chemicals, and advanced materials due to fluctuations in raw material prices, a limited availability of petroleum resources, and increasing consumer consciousness about sustainable processes.

Although catalysis is a major *tour-de-force* in driving this efficacious and green chemistry revolution, the role of reaction engineering, reactor design, process development, and operating conditions cannot be underestimated. I will discuss some of the fundamental concepts of catalysis and how they are linked to sustainable development of chemical processes of industrial relevance. Along with that, I'll try to bring forward the role of science and engineering in catalysis, with particular emphasis on catalyst attributes and catalyst development in industrial processes. The presentation will include case studies in hydrogenation, hydrodeoxygenation, and solid acid catalyzed reactions.

Speaker Bio

Dr. Sourav Sengupta has had a long and remarkable career in DuPont for almost 30 years. In 2020, Sourav was honored as a DuPont Laureate and advanced to the highest technical level in the company. He is recognized as an innovator, a problem-solver, and a leader in many areas of catalysis and chemical engineering. Sourav's work in heterogeneous catalysis, particularly in hydrogenation, hydrodeoxygenation, and hydrogen cyanide synthesis, has had far-reaching influence, evident from the sheer volume of his publications and the invited lectures he has given in his long and notable career in DuPont. Some of the articles he has published have received hundreds of citations and have been the basis of new research.

A collaborative leader and a great team player, Sourav knows how to get results. DuPont business leaders have long recognized him for his effective leadership in solving business, plant, and process related problems, and work with cross-functional teams to effectively manage complex technology programs. The technical successes he has had in these areas have positively impacted business results across the company over the years. He has a creative approach to his work, marrying an in-depth knowledge of the fundamentals of science with a keen and meticulous sense of detail. Some of his more notable achievements include:

- Several multi-million-dollar contributions to the Water & Protection, Mobility & Materials and other businesses through complex troubleshooting solutions
- Development and demonstration of inherently cheaper, faster, safer and more sustainable manufacturing processes and ingredients
- Break-through fundamental research, modelling and a reputation as the "go to person" for tough technical catalysis problems

Additionally, Sourav is very generous with his time when counselling, coaching, or mentoring younger colleagues, both professionally and personally. He is a great role model and has had a positive impact on the lives and careers of many colleagues over the years.

In addition to his work at DuPont, he is a recognized world class expert in the catalysis community. Sourav is the recipient of the 2015 Catalysis Club of Philadelphia Award, a prestigious award in the field of catalysis in North America. He has more than 90

US patents, provisional patents, publications in peer-reviewed journals, presentations in national and international conferences, and invited talks.

Sourav earned his bachelor's degree in chemical engineering at Jadavpur University (Calcutta) and his Ph.D. in chemical engineering from the University of Delaware. He joined DuPont (Conoco) in 1991 and has made lasting contributions across many businesses since that time. He is currently supporting the global Water & Protection Integrated Operations Manufacturing Technology organization.

Please refer to email announcement for login details.

Presentation	4:00 PM	Annual Membership Dues	\$35 (<i>Students</i> = \$15)
---------------------	----------------	-------------------------------	--------------------------------------

Deadline for reservations is 4:00PM Monday, February 22nd, 2021

To make your reservation, fill out the [online form](#).
