

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

Chemical Engineering in the 21st Century: Challenges and Opportunities

Energy Team Meeting

February 8, 2021

2:00 – 4:00 pm ET

Join Link:

<https://nasem.zoom.us/j/92539739958?pwd=SXg3WEtvK2JwYmN3MWUxNEdTUUMvZz09>

Open Session Agenda

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|---------|---|
| 2:00 PM | Electrochemistry – Theoretical Perspective
<i>Dr. Ismaila Dabo</i>
Penn State |
| 2:30 PM | Electrochemical Energy Engineering: A New Frontier of Chemical Engineering Innovation
<i>Dr. Yushan Yan</i>
University of Delaware |
| 3:00 PM | Discussion |
| 4:00 PM | Adjourn Open Session |

Closed Session 4-5 pm ET

Ismaila Dabo is an Associate Professor in the Department of Materials Science and Engineering at the Pennsylvania State University with joint appointments in the Penn State Institutes of Energy and the Environment, and the PennState Materials Research Institute. He received a Ph.D. in Materials Science and Engineering from MIT. His research group develops and applies molecular and submolecular computational models to understand, predict, and maximize the performance of materials for energy conversion and storage, with a focus on electrochemistry to produce electricity from fuels and on photochemistry to produce fuels from sunlight. His recent awards include the Corning Chair in Materials Science and Engineering (2020), Montgomery-Mitchell Teaching Award (2019), and NSF Career Award (2017).

Yushan Yan is the Henry B. du Pont Chair in Chemical and Biomolecular Engineering at the University of Delaware. He previously served as the Founding Associate Dean for Research and Entrepreneurship at the University of Delaware, Department Chair at the University of California Riverside, and Senior Staff Engineer/Project Leader at AlliedSignal. His recognitions include University Scholar Professor from the University of California Riverside and Presidential Chair from the University of California, the Donald Breck Award from the International Zeolite Association, the Nanoscale Science and Engineering Forum Award and the Braskem Award for Excellence in Materials Science and Engineering from the American Institute of Chemical Engineers, the Energy Technology Division Research Award from the Electrochemical Society, Fellow of the American Association for the Advancement of Science, the National Academy of Inventors, and the Electrochemical Society. He is a Web of Science Highly Cited Researcher. He is an inventor on 20+ issued US patents that have contributed to several startups (e.g., NanoH₂O). He is currently the Founder and CEO of a University of Delaware spinout (Versogen.com). His research has led to 270+ publications that are widely cited (23,000 + citations, h-index = 84, Web of Science; 30,000+ citations, h-index = 91, Google Scholar), and extensively covered by the media including New Scientist, Business Week, C&EN News, Materials Today, MRS360, Chemical Engineering Progress, China Press, Chinese Daily News, CNBC, CNN.com, KABC, Radio Australia, and VOA. He studied Chemical Physics (BS) at the University of Science and Technology of China and Chemical Engineering (PhD) at the California Institute of Technology. He has been an advisor for 30+ PhD students and 30+ postdoctoral researchers, with 20+ of them holding faculty positions.