



UCF

FACULTY RESEARCH TALKS

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Zoom talk | Friday, Jan. 28, 2022 | Noon to 1 p.m.

INDUSTRY PARTNER SPOTLIGHT:

Florida Solar Energy Center



PRESENTER 1:

JAMES FENTON

Director,
Florida Solar Energy
Center,
Professor,
Materials Science
and Engineering

Integrated Hydrogen Production and Consumption for Improved Utility Operations: A Path to Net Zero Emissions

To achieve net zero emissions by 2050, the world will require a complete transformation of how we produce and consume energy. We will need to see: accelerated deployment of wind and PV; more energy efficient buildings, faster uptake in electric vehicles, small-scale renewables, and low-carbon heating technology (i.e. heat pumps); and scaled-up development and deployment of zero-carbon fuels such as hydrogen. Dr. Fenton will present on utility solar coupled with electrolyzer production of hydrogen and its applications.

Dr. Fenton is the director of the state's energy research institute, the Florida Solar Energy Center (FSEC), and a professor in the Department of Materials Science and Engineering. He received his Ph.D. in chemical engineering from the University of Illinois. At FSEC, Dr. Fenton leads a staff of 60 in the research, development and education of energy technologies that enhance the economy and environment in Florida and nationwide. FSEC has six major program areas: solar energy, high-performance buildings, electric vehicles, energy storage (flow batteries, hydrogen, vehicle-to-grid), STEM education and workforce training, and energy policy research.



PRESENTER 2:

BRYAN PIVOVAR

Senior Research
Fellow,
National
Renewable Energy
Laboratory

The Growing Importance of H2 in our Evolving Energy System

In this talk, Dr. Pivovar will present Department of Energy (DOE) sponsored efforts in the area of hydrogen. His presentation will focus on two subjects: H2@Scale, an initiative that highlights the benefits of hydrogen in the energy system; and Hydrogen from Next-Generation Electrolyzers of Water (H2NEW), a consortium that focuses on advancing electrolysis technology to enable production of low-cost hydrogen for clean, efficient end uses.

Dr. Pivovar is a senior research fellow at the National Renewable Energy Laboratory, where he oversees its electrolysis, fuel cell and materials R&D. He is the director of a major DOE consortium, H2NEW. He received the 2012 Tobias Young Investigator Award and the 2021 Energy Technology Division Research Award from The Electrochemical Society and has co-authored more than 150 papers with over 10,000 citations. Dr. Pivovar received his Ph.D. in chemical engineering from the University of Minnesota.