Materials Science Seminars

Spring 2021

UCI Samueli School of Engineering | Department of Materials Science and Engineering

UC San Diego Jacobs School of Engineering

UCLA Samueli Materials Science & Engineering

Fri, 22 January 2021

Title: BIPV - A bad idea? Or, tomorrow's mainstream application?

Presenter: Dr. Sarah Kurtz

Professor of Materials Science and Engineering, UC Merced

Time:
10:00 AM – 11:00 AM (Pacific time)

Connection:
Zoom meeting ID: 842 506 6501
Password: 587901

In 1994, PowerLight introduced a building-integrated photovoltaic (BIPV) product, touting it as saving money (avoiding the cost of installing a conventional roof) while integrating PV into an attractive roof. At the time it was introduced, the mainstream opinion was that the future of PV would be building integrated and that utility-scale applications were a non starter. Today, utility-scale PV accounts for more than half of the world PV installations and BIPV is a small, though growing market (with most rooftop systems being "building applied" rather than "building integrated.") Was BIPV a bad idea?, or was BIPV an idea whose time had/has not come? Many things have changed since 1994; could BIPV be poised to become a mainstream application? Tesla, GAF and other companies are introducing BIPV products today. Will they be more successful? The talk will review many things that have changed (including power electronics, products with lower temperature coefficients, demonstration of PV as an accepted technology so that it's not such a risk to builders, the value of generating solar electricity near load centers, etc.), suggesting that there may be a new opportunity for BIPV. Then, the talk will review how a shift back to a goal of large-scale deployment of BIPV and related products changes the research agenda and the prospects for funding increases in the future.

Sarah Kurtz obtained her PhD in 1985 from Harvard University and now works at the University of California Merced after more than 30 years working at the National Renewable Energy Laboratory, in Golden, CO. She is known for her contributions to developing multijunction, GaInP/GaAs solar cells, supporting the Concentrator Photovoltaic (PV) industry, and leading efforts on PV performance and reliability. Her work has been recognized with a jointly received Dan David Prize in 2007, the Cherry Award in 2012, C3E Lifetime Achievement Award in 2016, and induction into the National Academy of Engineering in 2020. At the University of California Merced she is working both to help the university grow and to support the Energy Transition through a variety of studies, including a current study on long-duration storage.

Organizers

William J. Bowman, Ph.D.
Assistant Professor, UC Irvine
Dept. Materials Science and Engineering

Aaswath P. Raman, Ph.D.
Assistant Professor, UCLA
Dept. of Materials Science and Engineering

Prabhakar R. Bandaru, Ph.D.
Professor, UC San Diego
Dept. of Mechanical Engineering