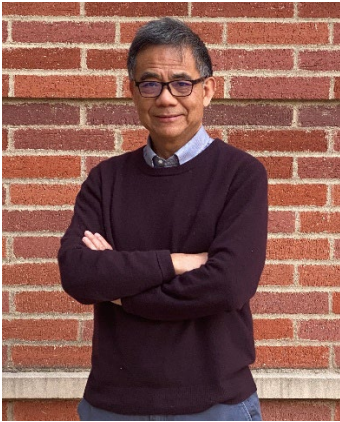


UCSD NANOENGINEERING/CHEMICAL ENGINEERING
SEMINAR SERIES

Wednesday, May 22, 2024

Seminar Presentation: 11:00am - 12:00pm

SME Room 248***“Long-lived Perovskite Solar Cells: Fixing the Problems from Bulk to Interface”*****Dr. Yang Yang, PhD***Distinguished Professor**Department of Material Science and Engineering**Department of Bioengineering**Carol and Lawrence E. Tannas Jr. Endowed Chair Professor**University of California, Los Angeles*

Abstract: Perovskite solar cell is regarded as the new generation of the photovoltaic technique because of its low cost, high absorption coefficient, and ease of fabrication. Its power conversion efficiency has reached over 26%, but the long-term stability under operational condition is far behind the standards required for technology commercialization. In this talk, I will briefly introduce the unique merits of the perovskite material and address the fundamental factors of its stability issue. Impactful strategies including selected additives for defect passivation and controlled grain growth, and surface post-treatment reforming the interfaces of the perovskite and transport layers will be discussed. With largely improved operational stability and comparable power conversion efficiency compared to the silicon solar cell, we are expecting a promising upcoming era of perovskite solar cell commercialization.

Biosketch: Prof. Yang has completed his Ph.D from the University of Massachusetts and postdoctoral studies from University of California-Riverside. His major research interests are in solar energy and highly efficient electronic devices. Currently he is the Carol and Lawrence E. Tannas Jr. Endowed Chair Professor of Materials Science and Engineering at UCLA. He is a fellow of European Academy of Science, the American Association for the Advancement of Science, Materials Research Society, Royal Society of Chemistry, American Physical Society, Electromagnetic Academy, and SPIE, International Society for Optics and Photonics. Recently, he has received the following honors/awards: invited to join the Advanced Materials Hall of Fame (2021); Highly Cited Researcher in three major fields: Materials Science, Chemistry, and Physics, Thomson Reuters (now Clarivate Analytics) (2017, 2018, 2019); 2019 Sustainable Energy Award by UK Royal Society of Chemistry; Highly Cited Researcher in both Materials Science and Chemistry Categories (2013-2016, 2020&2022).