Special Seminar

Department of Chemistry

Monday, September 16th, 2019
Time 14:00
Bldg. 29 Room 307

Frank E. Osterloh
Department of Chemistry, University of California, Davis, CA 95616, USA,
Phone: 1 530 754 6242, Fax: 1 530 752 8995, Email: fosterloh@ucdavis.edu

Water Splitting Photocatalysis with Inorganic Particles

Particle-based water photoelectrolysis is a special form of artificial photosynthesis that can offer substantial cost savings over established photovoltaic-electrolyzer and photoelectrochemical devices. While the theoretical solar to hydrogen conversion (STH) efficiency limit of tandem systems is 21%, existing particle water splitting devices only reach 1.1% STH. This means that significant advances are still possible through development of this technology. This talk introduces the basic concepts of particle-based water splitting photocatalysis and highlights recent accomplishments in the Osterloh laboratory on single and dual absorber photocatalysts for overall water splitting, and on using surface photovoltage spectroscopy as a sensitive tool for observing photochemical charge carrier separation and trapping in molecular and inorganic light absorbers.