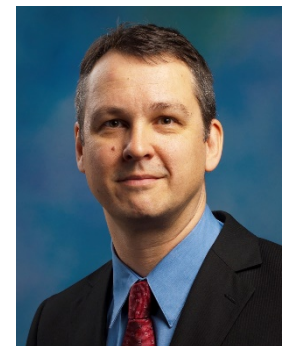


“Nanoscale Junctions for Artificial Photosynthesis and Water Splitting Photocatalysis”



Photochemical charge generation, separation, and transport at particle interfaces are central to photoelectrochemical water splitting, a pathway to hydrogen from solar energy. Here we use surface photovoltage spectroscopy (SPS) to probe these processes in films of WO_3 , NiO , C_3N_4 , $\text{M}:\text{SrTiO}_3$, $\text{HCa}_2\text{Nb}_3\text{O}_{10}$, CdSe , $p\text{-Si}$, and BiVO_4 nanocrystals. Charge injection between the nanocrystals and Pt , Ru , Co_3O_4 cocatalysts can be observed, as well as redox reactions at nanocrystal-liquid interfaces. The observed photovoltages can be related to the built-in voltage of the respective junctions. The ability to measure these voltages as a function of photon energy and light intensity provides new insight into nanoscale charge separation and promotes the development of nanocrystal applications in photoelectrochemical cells, photovoltaics, and as solar fuels photocatalysts.

Date: Feb. 15 (Mon.), 2016

Time: 3:00 pm – 4:30 pm

(開催日時が変更となりましたので、ご注意ください。)

Place: A2-304, Katsura Campus

連絡先: 分子工学専攻 今堀 博(内線:桂2566)、JGP化学系オフィス(内線:桂2878)