

## UCSD NANOENGINEERING SEMINAR

Monday, October 10, 2016

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

Cymer Conference Center

## Materials Design at Nanoscale for Energy and Environment

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### Abstract:

Materials design at nanoscale has enabled novel technologies which can address critical energy and environment problems. My group's research in the past decade has been focused on innovative ideas in this area. Here I will show multiple examples how nanomaterials design can allow us to control photons, electrons, ions and heat. Examples include 1) high energy batteries with Si, Li metal and S; 2) photon management with nanostructures for thin and flexible solar cells; 3) Cooling and heating textile for personal thermal management. 4) Water disinfection with novel nanofilters.

### Biosketch:

Yi Cui is a Professor in the Department of Materials Science and Engineering at Stanford University. He received his Ph.D in Chemistry at Harvard University (2002), B.S. in Chemistry at the University of Science and Technology of China (1998). He was a Miller Postdoctoral Fellow at University of California, Berkeley before joining Stanford University as an Assistant Professor in 2005. His current research is on nanomaterials design for energy and environment and two-dimensional materials. Cui is an Associate Editor of Nano Letters. He is a co-director of the Bay Area Photovoltaic Consortium and Battery500 Consortium funded by the US Department of Energy. He has published more than 330 peer-reviewed papers. He is a Fellow of Materials Research Society and Royal Society of Chemistry. He has received numerous awards including MRS Kavli Distinguished Lectureship in Nanoscience (2015), Resonate Award for Sustainability (2015), Inaugural Nano Energy Award (2014), Blavatnik National Award Finalist (2014), Wilson Prize (2011), the Sloan Research Fellowship (2010), KAUST Investigator Award (2008), ONR Young Investigator Award (2008), MDV Innovators Award (2007), Technology Review World Top Young Innovator Award (2004). He founded Amprius Inc. in 2008, a company to commercialize the breakthrough high-energy battery technology invented in his lab. He co-Founded 4C Air Inc. to develop novel filtration solution to remove PM2.5 particle pollutants from air.