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The Chinese University of Hong Kong
Department of Chemistry
Research Seminar Series

Speaker: Prof. Shihe Yang
Department of Chemistry
The Hong Kong University of Science and Technology

Title: Chemistry-enabled Nanostructures and Interfaces for Sustainable Solar Energy Conversion

<< Abstract >>

Chemistry is experiencing a paradigm shift to embrace functions emerging from complexity such as nanostructured materials, interfaces, etc. In this talk, I will highlight some of our recent results in understanding, interfacing and assembling different solution-processed processed nanomaterials for efficient solar energy conversion. First, I will focus on the design and construction of mesoscopic photoelectrodes, semiconductor quantum structures, donor-acceptor molecules, metallo-organic halide films for sensitized solar cells and especially the most recently rising perovskite solar cells. Power conversion efficiency (PCE) of over 15% can now be readily obtained with low-cost materials and processes by judiciously designing the nanostructures and interfaces.

Second, I will discuss our recent developments of various nanostructures and their combinations for solar fuel generation devices, including nanostructured catalysts, photocatalysts, photoelectrochemical electrodes and light harvesters. One of the current challenges in engineering solar energy conversion devices is to understand the component nanostructure - function relationship, akin to the bond-property relationship but at a higher level.

Date: November 27, 2015 (Friday)

Time: 4:30 p.m.

Venue: L1, Science Centre

ALL ARE WELCOME

Contact Person:
Prof. Jiang Xia