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New-generation photovoltaic technology based on hybrid materials

The next generation of solar cell seeks to enhance both efficiency and cost-effectiveness through the use of new materials and simple processes. Solution-processed and printable technologies, using semiconductor nanocrystals, organic molecules and hybrid materials, offer an attractive route towards achieving these grand goals. These technologies need to well understand the basic chemistry, surface and interface. This presentation is focused on the development of dye sentitized solar cell and perovskite solar cell using nanostructured materials and hybrid material. Colloidal quantum structure and plasmonic nanostructures et al are employed for multicolored, multifunctional, and next-generation photovoltaic devices that go beyond the traditional material and solar cells. The solution and coordination chemistry will be in detail invesitigated to reduce the efficiency-cost-stability gap towards commecialization.

Biography

Keyou Yan is currently working as Research Assistant Professor at The Chinese University of Hong Kong (CUHK). He received a PhD in 2013 from The Hong Kong University of Science and Technology (HKUST). After Post-doc research, he joined the Department of Electronic Engineering as faculty in CUHK in July 2016. He worked on low-cost new-generation photovoltaic technology using nanostructure and hybrid material in the past years. He has published 50+ refereed journal papers and had total citations of ~3000, including *Nature Communications, JACS, Advanced Functional Materials* et al. He is a member of ACS.

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