THE CHINESE UNIVERSITY OF HONG KONG
Department of Physics
SEMINAR

Oxides, Graphene and their Composites for Li-ion Batteries and Dye-sensitized Solar Cells

by

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Date: March 19, 2010 (Friday)
Time: 10:30 - 11:30 a.m.
Place: LG23, Science Centre North Block, CUHK

ALL INTERESTED ARE WELCOME
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Abstract

I will present our work on Co_3O_4 nanowire arrays. Co_3O_4 is a versatile and multi-functional material with exciting applications in catalysis, electrocatalysis, Li-ion batteries and solar selective absorbers. I will talk about the growth mechanism of Co_3O_4 nanowire arrays, their electrocatalytic properties toward oxygen evolution reaction, and their use in Li-ion batteries. I will also discuss our work on graphene-based composites for Li-ion batteries. The idea is to utilize the high electric conductivity and large surface area of graphene to enhance the battery capacity and rate capability. Finally, I will discuss oxide semiconductors for dye sensitized solar cells (DSCs) Zinc stannate (Zn_2SnO_4) will be used as an example for our systematical study on the energetics of the conduction band and valence band of Zn_2SnO_4 nanoparticles by optical, electrochemical and photoelectrochemical methods and their promising uses in DSCs.

Biosketch: Yiying Wu received his B.S. in chemical physics from the University of Science and Technology of China in 1998, and his Ph.D. in chemistry from the University of California at Berkeley with Professor Peidong Yang in 2003. He then did his postdoctoral research with Professor Galen D. Stucky at the University of California, Santa Barbara, and joined the chemistry faculty at The Ohio State University in the summer of 2005. He won the Cottrell Scholar Award in 2008 and NSF-CAREER award in 2010.

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