



The Electrochemical Society – Detroit Section
Seminar Notice: Wednesday, December 10th, 2008

Novel Photoelectrodes and Outersphere Redox Shuttles in Dye-Sensitized Solar Cells

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Dye-sensitized solar cells (DSSCs) offer the exciting possibility of extremely inexpensive and efficient solar energy conversion. Strategies to realize the potential of these devices will be discussed. A new materials-general synthetic approach for high-area porous metal oxide photoelectrode morphologies was designed for DSSCs and fabricated. The approach makes use of conformal, atomic layer deposition (ALD) and exploits a templating strategy. ALD was further employed to deposit controlled ultra-thin coatings of alumina on nanoparticle TiO₂ DSSC photoanodes. These modified electrodes enabled the use of ferrocene and ferrocene derivatives to be used as outersphere redox shuttles in DSSCs. The photovoltaic performance and interfacial charge-transfer dynamics with these new electrodes and redox shuttles were investigated. The results provide insight into the mechanism of charge transfer in DSSCs which helps guide future configurations.

Date: *Wednesday, Dec 10th, 2008*

Location: Lawrence Technological University
21000 West Ten Mile Road
Southfield, MI 48075

Building #5 (Taubman Welcome Center), 4th Floor, Room 406
Use Parking Lot A, C or D (Lots C & D are accessed off NW Highway)

Time: 5:30 pm Reception / 6:30 pm Dinner / 7:30 pm Speaker

Price: \$20 Members / \$22 Guests / \$15 Students

Payment: Cash or Check

RSVP by: Wednesday, Dec 3rd, 2008 to Xia Wang
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<http://www.electrochem.org/ecs/sections/detr/detr.htm>



