Fort Wayne Section
Technical Meeting
Social Hour & Pizza: 6:00PM-6:30PM
Tuesday, November 4, 2014, 6:30PM-7:30PM

Meeting Location
IPFW Engineering & Technology Building – Room ET 346
Please go to Ft Wayne Section web site to register for the event:
https://purdue.qualtrics.com/SE/?SID=SV_0IkanjGtPGLURG5
By Monday November 3 – Seating is limited

Pizza Provided

Tech Presentation on:

New Materials Compounds and Applications for Dye-sensitized Solar Cell and Optoelectronics

Speaker:

Dr. Normal Lu, Professor,
Institute of Organic and Polymeric Materials & Department of Molecular Science and Engineering
National Taipei University of Technology, Taiwan

Abstract

A new series of ruthenium(II) dyes with a fluorous ligand have been synthesized and fully characterized by UV/vis, visible emission, NMR, mass spectrometry, and cyclic voltammetric studies. Dye-sensitized solar cells (DSCs) based on these dyes exhibit efficiencies higher than that of the standard cell based on N719. It was found that by simply incorporating short fluorous chain to the dye can significantly increase its efficiency, stability and light-soaking abilities. The orange polymorphic Pt crystal which is also prepared from fluorous ligand has the linear Pt…Pt linear chain structure. This novel crystal behaves as a novel semiconductor, displaying increasing conductance with increasing temperature in the range of 200–300 K. Interestingly, its photo-responsivity is very short (~0.1 ms). This new Pt crystal has the potential to be used as valuable one-dimensional metal wires for the utility devices such as photo detector, organic transistor and molecular sensors. Its anisotropically electronic and photo-responsive properties will be discussed.