



Institute of Electrical and Electronic Engineers
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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_0lkanjGtPGLURG5

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 fluoros 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 fluoros chain to the dye can significantly increase its efficiency, stability and light-soaking abilities. The orange polymorphic Pt crystal which is also prepared from fluoros 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.