



# SOLAR QUEST

SEMINAR ANNOUNCEMENT

## **Professor Alex Freundlich**

Associate Director for Research at the Center for Advanced Materials  
University of Houston, USA

## **HIGH EFFICIENCY III-V THIN-FILM AND QUANTUM-ENGINEERED PHOTOVOLTAIC RESEARCH AT THE UNIVERSITY OF HOUSTON**

DATE: Wednesday, January 22, 2014

TIME: 10:00 am-12:00 pm

PLACE: Seminar Room A-502  
CCR Building, 5F

### **ABSTRACT**

The presentation will provide a brief overview of ongoing photovoltaic research and development activities at University of Houston. I will first discuss on the opportunities that quantum engineering using dilute nitrogen alloys of III-V compounds semiconductor, offer toward enabling multi-quantum well/superlattice enhanced CPV devices with practical sunlight to electricity conversion efficiencies exceeding 50%. The second part of the presentation will focus on highlighting recent effort in the development of high efficiency thin film III-V photovoltaics on inexpensive flexible polycrystalline metal foil substrates. The presentation will discuss recent breakthroughs in the fabrication of single crystalline GaAs epilayers on Ceria-coated and Ge/Ceria-coated flexible polycrystalline thin metal foils. Within this framework the practical viability of novel defect tolerant ultrathin ( $\ll 1$  micron) multi-junction devices for next generation of  $>20\%$  efficient thin film III-V photovoltaics will be discussed and evaluated.

Solar Quest Host: Prof. Yoshitaka Okada, ext. 56501  
Refreshments will be served.

