



## Physics & Astronomy Colloquium

Spring 2011

# "Nanostructure Solar Cell"

*Nanoscale science is an interdisciplinary subject to study materials with sizes generally between 1-100nm. The low dimension often drastically change their physical properties, such as melting point, electronic bandgap, charge transport, and charge relaxation dynamics etc. Thus the properties of the nanomaterials are adjustable by controlling their sizes, leading to unique applications. In this talk, I will review the recent development of nanoscale science and particularly their application in photovoltaics. I will briefly discuss the current energy problem and the physics of solar cells. Then I will focus on two categories of nanostructure solar cells. The first category is built on vertical and dense nanowires, grown by vapor deposition. The second category is fabricated with colloidal semiconductor quantum dots, taking advantage of quantum confinement effect. Recent progress including the results from my own research group will be presented.*

## **Dong Yu**

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**Thursday, February 10, 2011**

**\*4:20 -5:45 PM - MND 1015**

**\* Note - later time than previous semesters**

**Open & Free to all Students, Faculty & Public**