

---

## **Seminar**

# **Organic Semiconductor Based Plastic Solar Cell: Science, Expectation and Challenges**

## **Supravat Karak**

**University of Massachusetts (UMass), USA**

Over the last few decades the need of alternative renewable energy sources has stimulated several exciting scientific research for flexible, efficient and low cost photovoltaic devices. Organic semiconductors have shown the potential of obtaining the cheap and easy methods to produce energy from sun. However their efficiency (~10%) is still lower than the theoretically predicted Shockley-Queisser limit of 21% mainly because of recombination of singlet excitons (SE), charge-transfer excitons (CTE), and free charge carriers, caused by low carrier mobilities. Therefore fundamental understanding of photo-physics and charge transport properties of such new class of materials is extremely important to improve the performance of organic photovoltaic devices both in terms of their efficiency and lifetime.

***Tuesday, Mar 24<sup>th</sup> 2015***

***11:30 AM (Tea/Coffee at 11:15 AM)***

***Seminar Hall, TCIS***