

TATA INSTITUTE OF FUNDAMENTAL RESEARCH

Homi Bhabha Road, Mumbai-400 005

December 2, 2017

ASET Colloquium

- Speaker** : Prof. Amitabh Banerji (*Institute for Chemistry Education, University of Cologne, Cologne, Germany*)
- Title** : **Teaching Organic Electronics: Hands-on experiments making LEDs and solar cells with organic semiconductors**
- Date & Time** : **Friday 08 December 2017 at 16:00 hrs.**
- Venue** : **Lecture Theater (AG-66.)**

Abstract :

Electronics, whose functional elements are based on semiconducting organic materials (small molecules or specific polymers) are slowly becoming an inherent part of our everyday lives. Such organic light emitting diodes (OLEDs) are already being used in smartphones and curved-TVs. In future such devices may enable cheap, flexible large area displays and even photovoltaic devices (solar cells). We have developed didactical concepts and low-cost experiments for OLEDs (organic light emitting diodes) and OPVs (organic photovoltaic cells) [1-2]. The materials have been tested in formal as well as informal learning settings together with more than 60 teachers and students.

In this talk, I will present a teaching kit including all necessary materials for building OLED and OPV devices [3] and show how it can be used in a classroom setting to teach various concepts in organic electronics. The construction of the easy-to-fabricate devices will also be demonstrated in a live experiment!

References:

- [1] A. Banerji, M. W. Tausch, U. Scherf, *Educacion Quimica*, 2012, 24(1), 17–22
[2] M. W. Tausch, M. Zepp, *Praxis Naturw. - Chemie*, 2015, 64 (1), 18
[3] A. Banerji, *Nachr. Chem.* 2017, 65, 807-809

About the Speaker:

Prof. Amitabh Banerji obtained his Ph.D. in Chemistry Education from Bergische University of Wuppertal, Germany. He is the Winner of the Science On Stage Festival (2016), Special prize for science communication: Bergischer Wissenstransfer Preis (2013) and Manfred-und-Wolfgang-Flad prize of the GDCh Fachgruppe Chemieunterricht (2011).



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