TECHNISCHE UNIVERSITÄT
CHEMNITZ

Institut für Physik
Physikalisches Kolloquium

Mittwoch, 17.12.2015, um **16:00 Uhr**

Ort: Reichenhainer Str. 90;
Zentrales Hörsaal- und Seminargebäude, Raum 2/N013

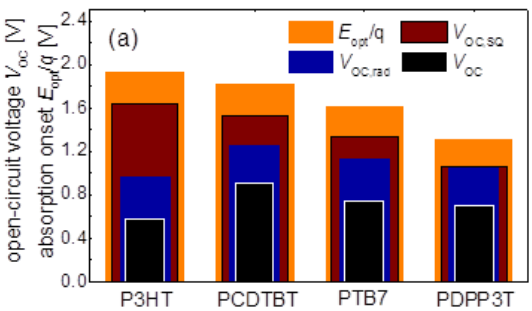
Prof. Dr. Jenny Nelson

Department of Physics and Centre for Plastic Electronics,
Imperial College London

Relating material properties to charge generation and charge recombination in organic heterojunction solar cells

The application of organic semiconductors to photovoltaic energy conversion is complicated by a number of factors including, the limited range of light absorption, low relative permittivity, disorder in electronic energy levels and the structural heterogeneity of organic semiconductor films. Over the last ten years the gradual evolution of a rational basis for materials and device design has helped single-junction power conversion efficiencies to increase from around 2% to over 10%. Nevertheless the best devices still underperform on account of losses to incomplete charge separation and to recombination.

In this talk, we will address the influence of material properties - such as chemical structure, molecular packing, energetic disorder and the structure of the charge separating interface – and device design on the processes of charge separation and charge recombination, using experimental results and simulation for a range of different material systems. We outline the remaining challenges in improving photovoltaic performance.



Alle Zuhörer sind ab 15:45 zum Kaffee vor dem Hörsaal eingeladen.

Informationen zum Vortrag erteilt:
Prof. Dr. Carsten Deibel, Tel.: 0371 531 34878

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