



TECHNISCHE UNIVERSITÄT  
CHEMNITZ

# Institut für Physik Physikalisches Kolloquium



**Mittwoch, 06.05.2015, um 16:00 Uhr**  
Ort: Reichenhainer Str. 90;  
Zentrales Hörsaal- und Seminargebäude, Raum 2/N013

**Prof. Dr. Sergei Baranovskii**  
Philipps Universität Marburg

## Theoretical tools for description of charge transport in disordered organic semiconductors

Theoretical study of charge hopping transport in organic disordered semiconductors (ODSs) is often performed by empirical fitting of numerical results, which leads to analytical equations that can hardly be valid in a broad range of parameters.

The main message of the talk is that analytical theoretical treatments for carrier mobility in disordered systems with hopping transport are easy to derive [1,2] and that empirical fittings are not necessary. Decisive features of these theories in application to ODSs will be discussed. Particularly, it will be shown how to find out the energy spectrum of electronic states in ODSs by measuring the dependence  $\mu(n)$  [3].

[1] A.V. Nenashev, J.-O. Oelerich, S.D. Baranovskii, J.Phys.: Cond. Mat. 27, 93201 (2015).

[2] S.D. Baranovskii, Phys. Stat. Sol. (b), 251, 487 (2014).

[3] J.O. Oelerich, D. Huemmer, S.D. Baranovskii, Phys. Rev. Lett. 108, 226403 (2012).



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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