

**S. Baranovski, Universität Marburg, Germany**



**On September 8 (Mon) 15:00 -**

**At 視聴覚室, Osaka Prefecture University**

***On Theoretical Description of Transport in Disordered Organic Solids***

It has been well established that hopping of charge carriers via localized states is in many cases the dominant transport mechanism in disordered organic solids, such as molecularly doped polymers, conjugated polymers, and organic glasses. Nevertheless there is no agreement among researchers with respect to the appropriate theoretical description of the very key dependences of the carrier mobility  $\mu$  on the concentration of localized states  $N$ , on the concentration of charge carriers  $n$ , on temperature  $T$ , and on the applied electric field  $F$  in organic materials in the hopping regime. Modern concepts developed in the recent years to describe the dependences  $\mu(N, n, T, F)$  will be analyzed in the talk and their ability to describe experimental data will be discussed.

*Professor Sergei Baranovski received his Ph.D. (1981) in Theoretical Physics from Ioffe Physical-Technical Institute of the Russian Academy of Sciences in St. Petersburg, where he worked as a senior researcher till 1990. Since 1990 he has been working at the Philipps University Marburg, Germany where he got Habilitation in Theoretical Physics (1995). His research interests are devoted to optical properties of semiconductor quantum structures, to charge transport and optical properties of amorphous inorganic semiconductors, and to transport properties of organic disordered solids. He is the author and co-author of more than 160 publications in international journals and the editor of the book "Charge Transport in Disordered Solids with Applications in Electronics" published by Wiley in 2006.*

Invited by Prof. Hiroyoshi Naito (email: [naito@pe.osakafu-u.ac.jp](mailto:naito@pe.osakafu-u.ac.jp)), Department of Physics and Electronics, Osaka Prefecture University.

This lecture will be held under the cosponsorship of the Institute of Molecular Electronic Devices and the New Frontier Material Research Society of Osaka Prefecture University.