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**S E M I N A R**  
**aus**  
**Halbleiterphysik und Nanotechnologie**

**Do, 23.11.2017, 13:00 Uhr**, Hörsaal für Physik

***“Biological and Biologically-inspired Polymers and Small Molecules for Sustainable Electronics”***

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Biological and Biologically-inspired Materials for Electronics Fabrication, Weiz*

The presenter and his research group investigated a large number of biomaterials as substrates, dielectrics, semiconductors and smoothening layers for the fabrication of organic field effect transistors and organic solar cells. The seminar presentation will focus on the highlights of our recent research, especially with respect to natural dielectrics: cellulose and cellulose derivatives, waxes, gums, natural resins, alkaloids and sugars, to name a few; flexible or rigid biodegradable substrates; as well as natural and nature inspired semiconductors in the families of indigos, anthraquinones and acridones. We implemented air-stable unipolar and ambipolar natural or nature-inspired semiconductor materials in organic field effect transistors, various types of integrated circuits and homojunction organic photovoltaics configurations respectively. We built fully biodegradable and biocompatible electronics, recording field-effect mobilities in the range of 0.1 to 1 cm<sup>2</sup>/Vs for some investigated semiconductor molecules. We found excellent stability to electrical and thermal stress degradation of those devices and proved excellent charge transport during testing periods of at least several months for devices measured without encapsulation.