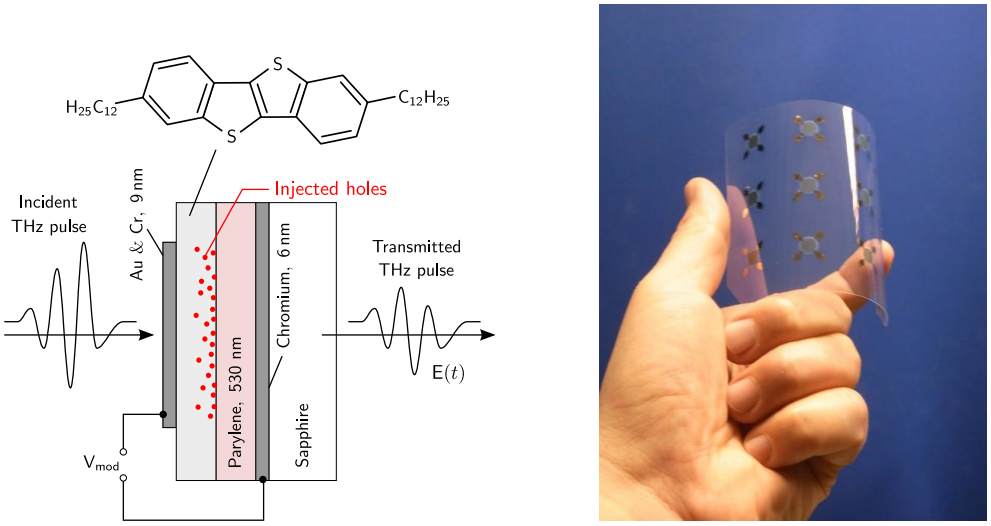
PhD position: Terahertz spectroscopy of organic semiconductors

26. Februar 2019

Organic semiconductors may enable new electronic devices, such as mechanically flexible electronics or low-cost large-area displays, and solar cells. But the physics behind charge transport in molecular semiconductors is only partially understood, which makes further progress on the way towards molecular electronics challenging.

The goal of the project is to gain insight into the fundamental transport processes of charge carriers. Of particular interest is how carriers move on scales comparable to molecular distances. Such small transport distances prohibit investigations using conventional electronic techniques, but can be accessed by terahertz (THz) spectroscopy. For the THz experiments, devices will be fabricated using standard semiconductor processing technologies, such as physical vapor deposition (PVD) and chemical vapor deposition (CVD).



Terahertz electromodulation spectroscopy and investigated molecular semiconductor devices.

Requirements: Candidates should have a master's degree in physics and background in solid state and semiconductor physics.

Position/Salary: TV-ÖD E13 75%

Earliest entry date: March 2019

Collaborations: Prof. Y. Geerts, Brussels

Contact: Prof. Dr. R. Kersting, `roland.kersting@lmu.de`

Literature:

- T. R. Arend, A. Wimmer, G. Schweicher,B. Chattopadhyay, Y. H. Geertes, and R. Kersting, Band transport and trapping in probed by terahertz spectroscopy, J. Phys. Chem. Lett. 8, 5444, (2017)
- S. G. Engelbrecht, M. Prinz, T. R. Arend, and R. Kersting, Terahertz spectroscopy on hole transport in pentacene thin films, Appl. Phys. Lett. 105, 012101 (2014)