

## **Printed Hybrid Materials for Sensor and Optoelectronic Devices**

Ao. Univ.-Prof. DI Dr. Emil J.W. List

*Institut für Festkörperphysik  
Technische Universität Graz*

Comfortable, wearable sensors and computers will enhance every person's awareness of his or her health condition, environment, chemical pollutants, potential hazards, and information of interest. In agriculture and the food industry there is a need for to constantly monitor the condition and needs of plants, animals, and farm products. Yet many of these applications depend upon the development of novel, cheap and easy to implement and integrated devices and sensors. Organic semiconductors, inorganic materials and hybrids have proven to combine a number of intriguing optical and electronic properties with easy processing. As it will be reviewed in this contribution these materials are believed to find their application in many electronic devices and fabrication processes. Moreover, this material class will allow for the development of smart disposable devices in health-, food- and environmental monitoring, diagnostics and control, possibly integrated into arrays of sensor elements for multi-parameter detection. In this contribution we report on the design, realisation and characterization of novel active partly printed semiconductor based electronic and optoelectronic devices, gas sensors, and IR detectors.