



Di, 22.10.2013, 11:15 Uhr
Hörsaal für Physik

„Metal Oxide Nanowire Gas Sensors for Indoor and Outdoor Environmental Monitoring”

Univ.-Doz. Dr. Anton Köck
Materials Center Forschung GmbH, Leoben

Gas sensors are of high importance for many applications ranging from air quality monitoring indoors and personal safety systems for carbon monoxide detection in household heating systems to outdoor environmental monitoring. All these applications require reliable, compact smart gas sensor systems. The roadmap for the development of smart sensor systems for daily life applications comprises two key issues: Nanocomponents, such as nanowires and nanoparticles, have to be employed as sensing elements in order to optimize gas sensor performance. Heterogeneous integration of those nanocomponents with CMOS devices is required to ensure low cost fabrication.

The performance results of our metal oxide nanowire gas sensor devices, where single and multi-nanowire device configurations have been developed in order to optimize sensor design, will be presented. In addition, heterogeneous integration of nanowire-based devices with CMOS technology based micro-hotplates will be shown. Finally an overview of the project MSP “Multi-Sensor Platform for Smart Building Management”, which is an FP7-ICT-2013-10 Collaborative Project, will be given. Goal of this project is to develop a technology and manufacturing platform enabling a 3D-integration of sophisticated sensors and devices on CMOS electronic chips.