

## HL 6: Invited talk Bertram

Time: Monday 12:15–12:45

Location: H33

**Invited Talk**

HL 6.1 Mon 12:15 H33

**Advanced nanoscale characterization of structural and optical properties of novel Nanostructures using scanning transmission electron microscopy cathodoluminescence** — ●FRANK BERTRAM — Institut für Physik, Otto-von-Guericke-Universität Magdeburg

For a detailed understanding of complex semiconductor heterostructures and the physics of devices based on them, a systematic determination and correlation of the structural, chemical, electronic, and op-

tical properties on a nanometer scale is essential. Luminescence techniques belong to the most sensitive, non-destructive methods of semiconductor research. The combination of luminescence spectroscopy, in particular at liquid He temperatures - with the high spatial resolution of a scanning transmission electron microscope (STEM) ( $dx < 1$  nm at RT,  $dx < 5$  nm at 10 K), as realized by the technique of low temperature scanning transmission electron microscopy cathodoluminescence microscopy (STEM-CL), provides a unique, extremely powerful tool for the optical nano-characterization of semiconductors, their heterostructures as well as their interfaces.