



**Sonderforschungsbereich 631**  
Festkörperbasierte Quanteninformationsverarbeitung



# SEMINARANKÜNDIGUNG

**Dienstag, 13. Januar 2009**

**17:15 Uhr**

**WSI, Seminarraum S 101**

## **“Formation and doping of quantum dots studied at the atomic scale by cross-sectional scanning tunneling microscopy”**

Current advanced growth techniques used for the fabrication of semiconductor nanostructures and the study of the optical, electronic magnetic properties of (individual) nanostructures require an atomic scale analysis of their size, shape and composition at the atomic scale. Cross-sectional scanning-tunneling microscopy (X-STM) allows determining these parameters for nanostructures such as quantum dots, rings and nanorods in III/V and II/VI multilayer structures. In the presentation I will show how we have been able to analyze these nanostructures and the role of critical issues like dot decomposition during capping, intermixing and segregation, As/P exchange and the doping of nanostructures. I will also present our latest results on the imaging of single Mn impurities in a self-assembled InAs quantum dot.

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