

## SEMINAR aus Halbleiterphysik und Nanotechnologie

Di, 19.12.2017, 11:00 Uhr, Hörsaal für Physik

### “Raman scattering and scanning probe approaches on biological materials: principles & prospects”

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Raman microscopy provides the molecular fingerprint of biological materials in the native state and in context with the microstructure. Numerous different molecular vibrations of all components are probed at once and thus results in spectra with many overlapping bands, a challenge for assignment and interpretation. During the last years especially multivariate unmixing methods (e.g. vertex components analysis) turned out to have high potential to retrieve subtle changes and fine details. The spatial resolution is limited by light diffraction to about 250nm. To get additionally insights on the nanolevel the combination with scanning probe approaches has high potential. Both approaches can be applied non-destructively on the native biological material and reveal structural, mechanical and chemical properties on the micro and nano-scale. By this a deeper understanding of structure-function relationships of biological materials as well as changes during biological and technical processes can be gained.

