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## S E M I N A R
## aus
## Halbleiterphysik und Nanotechnologie

**Mo, 8.4.2019, 11:15 Uhr,** Hörsaal für Physik

# "Atomic force microscopy for failure analysis in semiconductor industries"

Dr. Andrei Andreev
*Infineon Technologies Austria AG, Failure Analysis, Villach*

One of the most challenging issues in modern failure analysis (FA) is the investigation of very complex devices/structures with permanently shrinking geometries down to some few nanometers in all three dimensions. The inherent true three-dimensional resolution of atomic force microscopy (AFM) makes it a powerful tool for such sophisticated investigations. Moreover, beyond topography, AFM can access simultaneously the local electrical, electronical, magnetic, and mechanical properties of the sample. For that, one employs special developed AFM variants, like Scanning Spreading Resistance Microscopy (SSRM), Scanning Capacitance Microscopy (SCM), and Nanomechanical Imaging, to name just a few of them.

In my talk, I will explain how AFM and its variants can solve some typical FA issues with respect to semiconductor structures. I will discuss also the main advantages and drawbacks of the AFM in daily FA work.