

- *Nanoscale 3D imaging of physical properties of materials* (Oleg KOLOSOV)

The SPM outstanding success in materials science is based on the physical interaction (electrical, mechanical, thermal, etc) of the nanoscale probe and a surface of a studied sample with resolution down to the atomic scale. This lecture presents successes and challenges of several key approaches allowing SPM to explore internal structure of studied samples ranging from the semiconductors to biological materials. These include Ar-ion nano-cross-sectioning followed by SPM, real time SPM nanotomography and ultrasound based subsurface SPM imaging.