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## Scanning Probe Microscopy in Nanoscience: From Classical to Quantum Concepts

*Tuesday 5 May 2026 11:45 (1 hour)*

This talk presents an overview of the applications of Scanning Probe Microscopy (SPM), with particular emphasis on the Scanning Tunneling Microscope (STM) and Atomic Force Microscope (AFM). The role of SPM in surface science through atomic-scale imaging will be highlighted. In addition, precision nanometer-scale machining using AFM will be discussed, with examples from our works, including the manipulation and characterization of graphene. Finally, the integration of AFM techniques into emerging quantum technologies will be addressed, focusing on its application in quantum magnetometry based on solid-state spin systems.

**Presenter:** ÖZER, Prof. Dr. Hakan Özgür

**Session Classification:** Nanotechnology Session