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【167】 SPM functionalization for magnetic sensing

Scanning probe microscopy (SPM) techniques are now routinely used to access information about the material on the level of individual atoms and molecules. Recent advances in quantum-based technology motivate their further evolution overcoming their present limitations. In our work, we explore the possibilities to enhance the SPM sensitivity to magnetic fields by decorating the probe apex with an organic molecule. The functionality of this approach is demonstrated by probing the magnetic fields of Abrikosov vortices of type-II superconductors and other prototypical magnetic systems such as single atoms and nano-islands.

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