

## **Recent advances in magnetic force microscopy**

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During the past ten years magnetic force microscopy (MFM) has become probably the most powerful generalpurpose method for magnetic imaging. MFM can be applied under various environmental conditions and requires only little sample preparation. Basic research on magnetic materials as well as the mentioned industrial applications creates an increasing demand for high-resolution magnetic imaging methods. This contribution will review some new concepts which have been realized in the field of advanced probe preparation, based on electron beam methods in order to improve the spatial resolution beyond 100 nm. It is shown that the advanced probes allow high-resolution imaging of magnetic fine structures within thin film permalloy elements exhibiting a complicated cooperative magnetization reversal process. These investigations are of importance for various concepts underlying modern magnetic data storage developments. Furthermore, we present some developments of MFM to suit the needs of the magnetic recording industry.