Improving the lateral resolution of the MFM technique to the 10 nm range

M.R. Koblischka, U. Hartmann, T. Sulzbach

A powerful tool to investigate the magnetic properties of harddisk heads in the range of about 10 nm is demanded by magnetic data storage industry. Magnetic force microscopy (MFM) tips are prepared using the electron-beam deposition technique, which reaches the highest spatial resolution, but is not well suited for batch production. Therefore, also FIB milling is employed to produce MFM tips with a high aspect ratio similar to electron-beam deposition tips. We show that both types of tips not only improve the spatial resolution, but also considerably reduce perturbation effects on soft magnetic structures.