

Precise AFM and SThM probes manufactured with FIB technique

The development of precise processes in the nano-scale with the use of FIB technique for manufacturing probes used in AFM (Atomic Force Microscopy) and SThM (Scanning Thermal Microscopy) methods, i.e. sharpening of their tips to the radius of less than 50 nm, as well as reconstruction of damaged metallic components of MEMS/NEMS structures (both the lever bar and its tip) and renewal of worn probes with a negligible change in their mass and mechanical and electrical properties.

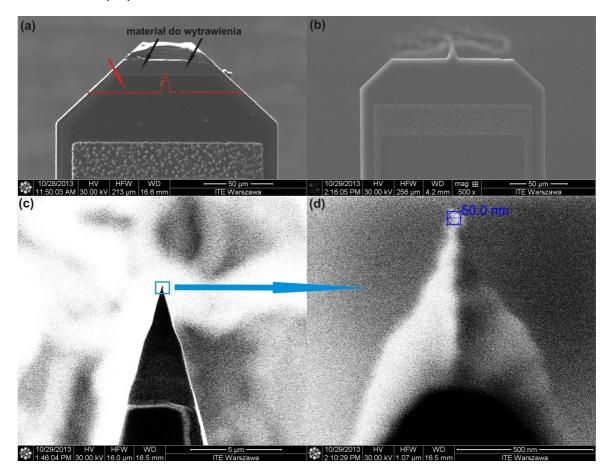


Fig. Manufacturing of renewed probe with FIB technique: (a) view of a worn probe, with marked shape to be obtained by FIB, (b) view after milling of waste material, (c and d) probe tip after the additional precise cutting with ion beam (tip radius of approx. 25 nm, with the diameter marked in the figure)