

Influence of the Surface Structure of Thin Ferromagnetic Wires on Magnetoimpedance

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Abstract. In presented contribution two types of glass-metal bond are investigated by scanning electron microscope (SEM) equipped with EDS. Firstly, a mechanical bond, which usually provides weaker random joints. Secondly, chemical interaction, where the oxide layer on the metal surface forms a strong bond with the glass. Additionally magneto-impedance measurements are used to determine surface magnetic properties of microwires with and without glass cover. Considering giant magneto-impedance (GMI) effect, which is mainly a surface effect at higher frequencies, is very sensitive to the rotation of magnetization in the shell of a microwire. Thus GMI measurements are often used to determine magnetic anisotropy, hysteresis and residual magnetic domain structure formed around local defects (pits) on the surface of amorphous ferromagnetic microwires.