

Investigation of the domain structure transformation under mechanical deformations in permalloy microparticles

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Abstract

Using magnetic force microscopy (MFM) and computer simulation it was shown that the mechanical compression of the permalloy microparticles leads to the increase in the effective anisotropy field and the noticeable decrease in the external magnetic field value necessary for the formation of the uniform magnetization in the compressed particle. The analysis of MFM images of microparticles covering the whole substrate surface made it possible to conclude about the uniform or nonuniform distribution of stresses induced in the particles in the different area of the substrate.

<http://dx.doi.org/10.1088/1742-6596/859/1/012005>

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