9.7 cm

# The self-organisation of tetrahedrally closepacked structures in magnetic nanocrystalline films Tb–Fe and Co–Pd

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The self-organisation of structure film studies in Tb30Fe70 and Co50Pd50, possessing of large values of perpendicular magnetic anisotropy (K normal $\sim$ 106 erg/cm3). The Films explored by methods of diffraction electrons and transmission electron microscopy. Crystallization of all explored films passed an explosive way with shaping the dendritic structures from nanocrystalline state. Shown that after crystallizations atomic structure of films Tb–Fe and Co–Pd is tetrahedrally closepacked. The analogue structures don't exist in equilibrium conditions for Co–Pd. On the grounds of the analysis of bend-contour on electron microscopy micrographs are made evaluations of internal tensions in explored films. Expected that large constant values of perpendicular magnetic anisotropy are defined by the anisotropy of magnetostrictions. The particularities of structural construction of films cause the large magnetostriction effects.
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13.4 cm

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