

# MAGNETIC PROPERTIES OF Fe/Tb MULTILAYERS

K. Ostasz<sup>a</sup>, L. Uba<sup>a</sup>, S. Uba<sup>a</sup> and R. Gontarz<sup>b</sup>

<sup>a</sup>Institute of Physics, University of Białystok, Lipowa 41, PL-15-424 Białystok, Poland

<sup>b</sup> Institute of Molecular Physics, PAS, Smoluchowskiego 17, PL-60-179 Poznań, Poland

Magnetic and magneto-optical properties have been studied for a series of sputter deposited Fe/Tb multilayers (MLS) on Si(111) substrates. The process of magnetization reversal of the system was studied experimentally by the magneto-optical techniques in both polar and longitudinal geometry. The hysteresis loops of the Fe/Tb MLS measured show complex structures connected with structural and magnetic heterogeneity of the system. To interpret the complex magneto-optical hysteresis loops measured in the Fe/Tb MLS, the method based on strong photon energy dependence of the magneto-optical effects on the system composition has been proposed. The contributions to the hysteresis loops, coming from interface Tb-Fe alloy region with perpendicular anisotropy and coupled to a modified Fe volume with in plane anisotropy, were evaluated. The analysis of the magneto-optical data leads to the conclusion that the change of Fe magnetic moments orientation with respect to the applied magnetic field direction takes place for the studied systems when the Fe sublayer thickness in the Fe/Tb MLS is above 2 nm.

9.7 cm

13.4 cm

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## Corresponding author :

K. Ostasz

## Address for correspondence :

Institute of Experimental Physics  
University of Białystok  
Lipowa 41  
PL-15-424 Białystok  
Poland

## Email address :

kosta@alpha.uwb.edu.pl; ubaluba@alpha.uwb.edu.pl