

# The temperature dependence of magnetization processes in MBE and sputter-deposited Fe/Au layered structures

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We investigated magnetization processes in Fe/Au layered structures prepared by MBE and sputtering techniques as a function of temperature. The hysteresis loops were measured by magneto-optical methods in the temperature range 8-315 K in an external magnetic field oriented both perpendicularly and in the sample plane. The MBE layered structures studied are composed of equal number of Fe and Au atomic layers, and sputter-deposited Fe/Au multilayered structures are prepared with comparable sublayer thicknesses to MBE films. For MBE structures studied the complex character of temperature dependence of coercivity and remanence is observed, and the spin reorientation from out-of-plane to in-plane takes place with the increase of Fe and Au sublayer thickness already for three atomic layers. The temperature dependences of magnetization processes become similar in both systems for thickest sublayers where anisotropy is of easy-plane type. The interpretation of the observed temperature-dependent magnetic characteristics and correlation with the system's structure is analyzed and discussed.

← 13.4 cm →

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9.7 cm