

# MAGNETIC ANISOTROPY CHANGES IN ULTRATHIN Co FILMS GROWN ON VICINAL SAPPHIRE SUBSTRATES

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The aim of the work is to study of the magnetic anisotropy of ultrathin hcp Co magnetic films epitaxially MBE grown on vicinal Al<sub>2</sub>O<sub>3</sub>(1120) substrate with miscut angles of 1° and 5°. The epitaxial samples with the following structure: (i) first buffer layer of 20 nm Mo(110) deposited at  $T = 1000^{\circ}\text{C}$ , (ii) second buffer layer of 10 nm Au(111) deposited at room temperature and annealed at  $T = 200^{\circ}\text{C}$  for 30 minutes, (iii) 2 nm of Co layer, (iv) covered by a 8 nm thick Au layer. RHEED was used to check the growth process of the samples. Measurements were performed at room temperature using MOKE magnetometer and FMR X-band spectrometer. Magnetization processes were studied in both longitudinal and polar MOKE experiments. Changes of in-plane magnetic anisotropy symmetry were deduced from shape analysis of the magnetization curves and angular dependence of the resonance field measured in the sample plane. Two-fold and four fold symmetry was observed for different miscut angle, respectively. The experimental data, will be discussed taking into account the following energy contributions: (i) demagnetization term; (ii) surface and bulk uniaxial anisotropy; (iii) and step-induced uniaxial anisotropy. Magnetic anisotropy constants are fitted for different miscut angles.

13.4 cm

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