

Tailoring of magnetic properties of ultrathin Co films by electromagnetic radiation pulses in a wide spectral range

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Molecular beam epitaxy deposited ultrathin Pt/Co/Pt layers were irradiated by electromagnetic radiation pulses in a wide: spectral range (from $1nm$ until $1\mu m$); pulse width range (between tens fs and tens ns) and the pulse fluence density up to films ablation threshold. The pulses driven irreversible changes of magnetic and structural properties were studied. Using available sources, a possibility of irreversible transition between in-plane magnetization state into perpendicular state was observed. This effect was compared with similar phenomena of ion bombardment driven transition in Co layers reported in the paper [1]. Electromagnetic radiation pulses could be used for magnetic structures patterning with a sub-micrometer period.

References:

[1] A. Maziewski et al., Phys. Status Solidi A, 211, 1005 (2014) and references therein.

Sponsored by Polish Harmonia project, NCN DEC-2012/06/M/ST3/00475