

Engineering of magnetic and magneto-optical properties of Co based nanostructures

A. Maziewski

Faculty of Physics, University of Białystok, Lipowa 41, 15-424 Białystok, Poland

Magnetic anisotropy of sandwiched ultrathin Co layers can be effectively tuned by properties of either an overlayer or/and underlayer. An extension of the Co thickness range with the out-of-plane magnetization component is obtained by: (i) an application of the vicinal substrate/buffer surface [1], (ii) increase of the bilayer number N in $(\text{Co}/\text{Au})_N$ multilayer [2]. Ion irradiation is an additional powerful tool for magnetic properties modification either uniformly or in a local scale, using a focused ion beam (FIB). Usually, such treatment decreases coercivity and magnetic anisotropy of the affected structures, but recently it has been shown that ion irradiation induces also an out-of-plane magnetization component [3]. Co-based nanostructure, patterning realized by such methods as patterned buffer [4] or ion irradiation [5,6], will be discussed. Polish teams involved in reported studies realize SPINLAB project in the frame of the EU programme Innovative Economy, Priority 2.2.

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