

# BUFFER INDUCED MAGNETIC PATTERNING OF ULTRATHIN Co LAYER

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Magnetic anisotropy of ultrathin Co layer is substantially influenced by its thickness as well as by the type of buffer and overlayer material. In the case of Au/Co/Au sandwiches the spin reorientation transition from the out-of-plane to the in-plane configuration with increasing Co layer thickness is observed for 1.9 nm. The application of materials different than Au as the buffer and/or overlayer usually suppresses the Co thickness range, for which the perpendicular magnetization is stable. Thus the spatially patterned buffer is expected to modify accordingly the magnetic anisotropy of Co ultrathin film. The unique growth of Au on Mo in the form of islands ca. 100 nm in diameter offers the possibility to obtain such patterned buffer. Magneto-optical measurements (P-MOKE) reveal the existence of two different magnetic phases in the wide range of Co thickness. For particular Co thickness between 1.1 and 1.9 nm the magnetization of Co layer grown on Au islands is oriented in perpendicular whereas between islands in parallel direction to the film plane, giving rise to the array of spatially stable dots several dozen nanometers in lateral size with perpendicular magnetization.

This work has been done under the project N N507 452134 granted by the Ministry of Science and Higher Education in Poland.

9.7 cm

13.4 cm

**Subject category :**

5. Nano-structure, Surfaces, and Interfaces

**Presentation mode :**

oral

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