

TEMPERATURE-INDUCED CHANGES IN STATIC AND DYNAMIC MAGNETIC PROPERTIES OF Py/FeMn BILAYERS

Abstract Content

Collective magnetization dynamics has been studied for the exchange-coupled Py/FeMn bilayers with a varied thickness of an antiferromagnetic FeMn layer. In performed ferromagnetic-resonance (FMR) experiments, the collective dynamics manifests itself in two separate FMR lines, which can be attributed to the acoustic and optical resonance modes. The analysis of temperature- and angle-dependent FMR behavior of the acoustic mode yields enhanced effective magnetization of the bilayer and gives evidence of a non-zero magnetic moment in FeMn. The results obtained testify that a combination of ferromagnetic and antiferromagnetic materials may provide extraordinary thermo-magnetic properties which are now of great interest for practical applications in the field of spintronics (memory devices, nanooscillators, etc.).

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