

SPIN TRANSFER TORQUE IN Co/Cu/Py-PILLARS INVESTIGATED BY FERROMAGNETIC RESONANCE

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It is well known from other studies that a spin polarized current in a ferromagnet exerts a torque on the magnetic moments by spin momentum transfer [1,2]. This current can be used to switch the magnetization of one ferromagnetic layer in a ferromagnetic metal / nonmagnetic metal / ferromagnetic metal spin valve device [3]. We investigate the influence of the spin polarized current on the damping in the ferromagnetic layers of the pillar structures directly by means of ferromagnetic resonance (FMR). The pillars are prepared and electrically contacted by high-resolution electron beam lithography (HR-EBL) and electron beam evaporation in a multi step process. The FMR measurements are carried out on a pillar array, in which all pillars are connected in series, so that we are able to increase the current density to a value being sufficient to observe the effect of the spin transfer torque. The influence of the Oersted field is estimated in addition. We further investigate the domain structure of the pillars in an applied field by means of micromagnetic calculations.

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