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Magnetic multilayers on nanospheres FRANK TREUBEL, ILDICO GUHR, TILL ULBRICH, JOHANNES BONEBERG, GÜNTER SCHATZ, MANFRED ALBRECHT, GUOHAN HU, UNIVERSITY OF KONSTANZ, GERMANY TEAM, HITACHI SAN JOSE RESEARCH CENTER, SAN JOSE, USA COLLABORATION — Nanoparticle media using arrays of monodisperse nanoparticles with high magnetic anisotropy are assumed to be the ideal future magnetic recording media [1]. However, key requirements like control of the magnetic anisotropy orientation along with magnetic domain isolation have not been achieved so far. Here, we report on a combination of a two-dimensional topographic pattern formed of self-assembled polystyrene particles [2] with sizes as small as 20 nm and magnetic film deposition. The so formed nanostructures on top of a sphere are monodisperse and reveal a uniform magnetic anisotropy which can be tailored by changing the stack of a Co/Pd multilayer film and the deposition angle. Magnetic exchange isolation depends strongly on the total film thickness and the particle size as observed by MFM imaging and MOKE studies. Moreover, results on the switching mechanism as a function of nanostructure size will be presented. [1] M. Albrecht et al., *Physik Journal*, 10 (2003) [2] F. Burmeister et al., *Appl. Surf. Sci.* 144-145, 461 (1999)

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