

Abstract Submitted
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Nanoparticulate CoPt Thin Films¹ YASAMAN BAREKATAIN, GEORGE HADJIPANAYIS, Department of Physics and Astronomy, University of Delaware, MAGNETICS BLAB TEAM — Equiatomic FePt and CoPt alloys are very attractive for application in high density recording media because of the high magnetocrystalline anisotropy K of their **fct** ($L1_0$) structure with values exceeding $2\text{MJ}/\text{m}^3$. The aim of this study is to fabricate a nanoparticulate CoPt film consisting of CoPt nanoparticles embedded in a matrix. To obtain this we have used co-sputtering of CoPt with different materials $M = \text{BN}, \text{C}, \text{Cu}$ and SiO_2 . Our first experiments were done on CoPt films with thickness of 200 nm. The as-sputtered films had the **fcc** structure and a coercivity of 150 Oe. Annealing at 700 °C for 30 min led to an increase in coercivity to 4 kOe. Optimization studies are under way to find the optimum sputtering conditions to obtain a fully ordered tetragonal structure with the highest value of coercivity which can then be used in the nanoparticulate composites. Work supported by DOE BES- FG02-04ERU4612

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