

Abstract Submitted
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Real-time thermal annealing studies in FePt thin films and nanostructures J. R. SKUZA, M. N. SESTAK, R. A. LUKASZEW, The University of Toledo, D. A. WALKO, APS, Argonne National Laboratory, C. CLAVERO, A. CEBOLLADA, IMM (CNM - CSIC), Spain — $L1_0$ -ordered FePt thin films and nanostructures have been heavily studied for ultrahigh-density recording applications taking advantage of the very large perpendicular magnetic anisotropy this phase exhibits ($\sim 10^7$ erg/cc). A high degree of $L1_0$ order can be achieved by optimizing deposition conditions and/or performing annealing treatments. Here, we report on recent real-time thermal annealing studies of Fe-implanted Pt thin films that begin to exhibit chemical ordering upon annealing at $\sim 400^\circ$ C. Clusters of Fe are implanted onto a Pt thin film using the Toledo Heavy Ion Accelerator (THIA) in which their size and penetration depth can be tailored by modifying the implantation conditions. These annealing studies were partially performed at the MHATT/XOR beam line (Sector 7) at the Advanced Photon Source at Argonne National Laboratory.

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