

High-coercivity FePt sputtered films

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Abstract: Fe₅₆Pt₄₄ thin films have been prepared by RF magnetron sputtering on Si substrates. The substrate temperature was kept at 350°C. The X-ray diffraction patterns of as-deposited FePt films exhibited a disordered structure. Annealing of the films at 650-685°C for 1 h yielded an ordered L1₀ phase with FCT structure. The high value for coercivity H_C of 17 kOe was obtained at room temperature for the 68 nm thick film annealed at 685°C. The hard magnetic properties as well as grain structure of the films strongly depend on the annealing conditions. ?? 2004 Elsevier B.V. All rights reserved.

Author Keywords: Coercivity; FePt; L1₀ ordered structure; Thin films

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