

ABSTRACT

Method of Fabricating a $L1_0$ Ordered FePt Film as a Magnetic Recording Media

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A magnetic recording media with a layered structure formed by using a magnetron sputtering system is disclosed. The layered structure magnetic recording media is fabricated with FePt alloy or (FePt)-Ag ternary alloy as the recording layer, where it is sputter deposited on an intermediate layer and underlayer sequentially on a substrate. Seed layer coated substrate are
10 used to decrease the grain size of the underlayer and magnetic layer. Resulting face centered tetragonal $L1_0$ ordered FePt films with (200) orientation is obtained. Elements or compounds with lattice constant and crystal structure that match well with the magnetic layer and/or chromium alloy underlayer are chosen as the intermediate layer. A minute amount of oxygen, nitrogen or air introduced during sputtering of all layers proved critical in controlling the
15 longitudinal anisotropy of the films.

Fig. 1



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