

**Correlation of texture and growth stress to magnetic properties in  
 $\text{Fe}_x\text{Ni}_{0.48-x}\text{Pt}_{0.52}$  thin films**

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Exchange-coupled composites (ECC) and gradient media allows a lower write field for a given thermal stability relative to conventional media and is proposed to solve the writing problem of high  $K_u$  recording media such as  $L1_0$  FePt alloy thin films. One challenge to implement the gradient media concept is to fabricate thin films whose easy magnetization axis aligns perpendicular to the thin film growth plane with controlled magnetic anisotropy of each magnetic layer. In this study, the texture and growth stress of the (001) FePt thin films are studied and correlated with the magnetic properties. The addition of Ni to FePt thin films is also studied and a gradient (001)  $\text{Fe}_x\text{Ni}_{0.48-x}\text{Pt}_{0.52}$  thin films is fabricated with controlled magnetic anisotropy along the growth direction. The growth stress, texture and magnetic properties of the Fe-Ni-Pt thin films are investigated.