## Numerical Micromagnetic Simulation of Fe-Pt Nanoparticles with Multiple Easy Axes

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## Introduction

High density magnetic storage media require tight control of the grain size, grain size distribution, chemical composition, and microstructure to ensure the thermal stability of the bits and keep the media noise low. However, as the areal density increases, the grain size and the magnetic switching volume decreases. In order to maintain the stability materials with higher uniaxial anisotropy than the common CoCrPt alloys are required. FePt thin films and self assembled nanoparticles [1] are promising candidates for high density magnetic storage media. Their magnetocrystalline anisotropy is 50-100 times larger than in CoPtCr media alloys which may allow areal densities in the Tbit/in<sup>2</sup> regime [2].



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