**L1₀-FePt Based Exchange-Coupled Composite (ECC) Media for Perpendicular Magnetic Recording**

by Huang Lisen

**Date:** 17th April 2013 (Wednesday)

**Time:** 11 am to 12 nn (1st hour of defense)

**Venue:** EA-02-14

**Abstract**

As the promising candidate for the future magnetic recording media, L₁₀-FePt faces serious writability problem due to the ultrahigh magnetic anisotropy and coercivity. This project focuses on the investigation of various L₁₀-FePt based exchange-coupled composite (ECC) media in reducing the coercivity and the magnetization reversal mechanism. The coercivity of L₁₀-FePt exchange spring multilayer was reduced to half, while the thermal stability was maintained. A coercivity reduction factor of 2.5 and a thermal stability gain of 2.25 were achieved in the FePt/Fe bilayer with 3 nm Fe. The magnetization reversal mechanism of the FePt/Fe ECC nanodots was investigated by Hall measurement. Domain nucleation and propagation was revealed in the angular dependent coercivity plot and the simultaneous measurement of in-plane and out-of-plane magnetization components during the magnetization reversal.

**Speaker** Huang Lisen

**Biography**

Miss Huang Lisen received her Bachelor of Applied Science from the Department of Materials Science at the National University of Singapore in 2008. She is currently pursuing her PhD degree under the supervision of A/Prof. Chen Jingsheng. Her research interests focus mainly on the L₁₀-FePt perpendicular magnetic recording media.