Giant Magnetoresistance of Multilayered Co/Cu Nanowires

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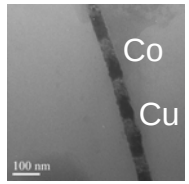
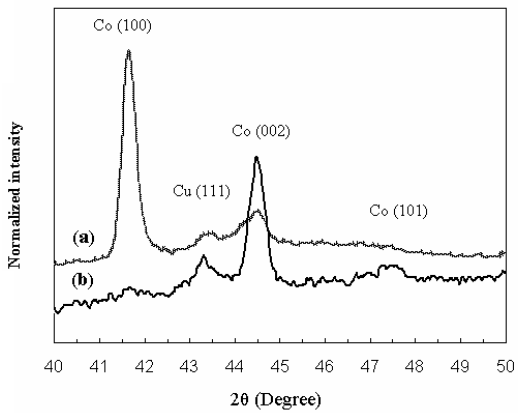
NNIN Facilities utilized: Characterization Facility & Nanofabrication Center

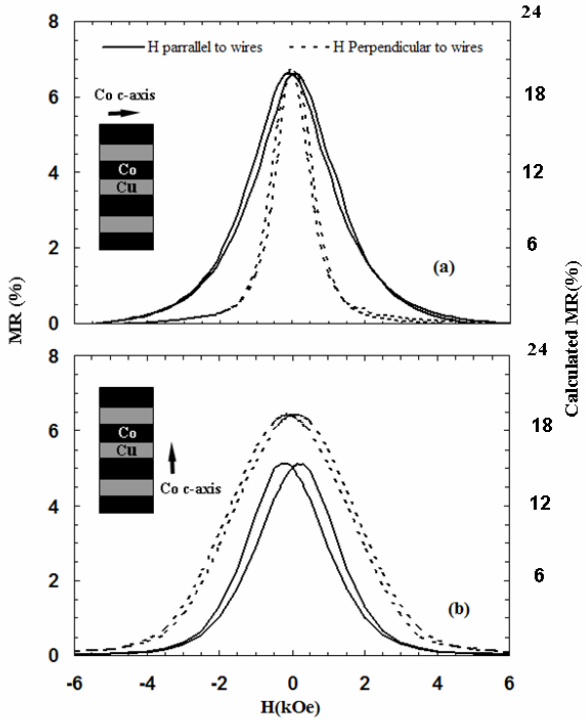
- **Motivation:**
  - ❖ Study giant magnetoresistance and spin transfer torque (STT) effect in Co/Cu nanowires.
  - ❖ Understand angular response of magnetoresistance



- **Experiment:**
  - ❖ Co/Cu multilayered nanowire growth into porous template.
  - ❖ Co crystallographic orientation controlling.
  - ❖ Measurements of the angular dependence on MR and STT at RT

Co crystallographic orientation were tailored by pH and growth rate





Angular response of magnetoresistance in Co/Cu nanowires was related to magneto anisotropy. STT study is on going.

❖L. Tan, P. D. McGary and B. J.H. Stadler, "Controlling the Angular Response of Magnetoresistance in Co/Cu Multilayered Nanowires using Co Crystallographic Orientation", *J. Applied Physics, 103 no1(2008) in press*

❖L. Tan and B. J. H. Stadler, "Fabrication and Magnetic Behavior of Co/Cu Multilayered Nanowires", *J. Materials Research* **21**, 2870 (2006)