

**Magnetic Materials for Nanoelectronics Research Group (MMNRG)**

**Center for Computational Sciences (CCS)**

**will host a 2011 Spring Special**

**COLLOQUIUM**

# **MAGNETIZATION PROCESS IN ELEMENT AND SPIN-VALVE OF VARIOUS SHAPES FOR SPINTRONICS**

**May 5 • 3:30-4:30pm • HPC Room 20**

(refreshments will be served 3:00 - 3:30pm)

## **Professor Yang-Ki Hong**

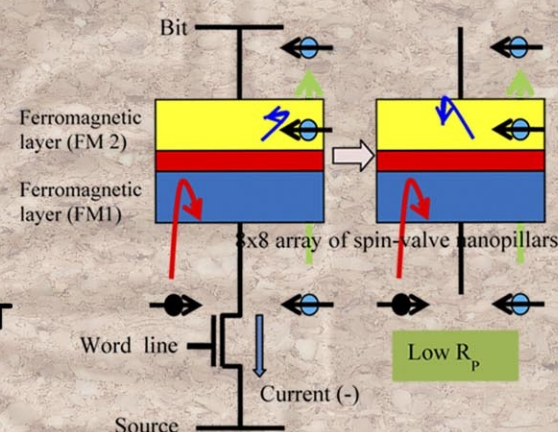
**E. A. "Larry" Drummond Endowed Chair**

**Director of Magnetic Materials and Device Laboratory**

**Department of Electrical and Computer Engineering and MINT**

**Professor of Materials Science Ph.D. Program**

**The University of Alabama, Tuscaloosa, AL 35487**



This talk focuses on magnetic spin configuration and spin-dynamics in element and spin-valve of various shapes for spin-torque transfer magnetic random access memory (STT-MRAM) applications. Magnetization mode of various shapes will be briefly reviewed. The shape includes Pac-man, ring, square, and disk. We will discuss magnetic domain wall structure of submicron permalloy ring, magnetic spin configuration in Pac-man and square elements, magnetization reversal in Pac-man spin-valve and square permalloy element, and magnetic vortex chirality in nanodisk spin-valve. The second part will introduce an S-shaped permalloy element for magnetic logic element and novel hexaferrites for future voltage (electric) switching of spin-valve (MTJ).

For more information, please contact Dr. Seong-Gon Kim at: [kimsg@ccs.msstate.edu](mailto:kimsg@ccs.msstate.edu).



**MISSISSIPPI STATE  
UNIVERSITY**

