

Physics Seminar

“Characterization of Electrodeposited Nickel-Iron-Copper Thin Films”

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Abstract:

The 2007 Nobel Prize in Physics was awarded to two European physicists who discovered in 1988 that multilayered materials with alternating magnetic and nonmagnetic layers exhibit a large change in electrical resistance with the application of an external magnetic field. This effect, called Giant Magnetoresistance (GMR), is being used today in almost every computer hard drive. In this talk, I will describe GMR and how it has been influential in the ever-increasing amount of data you can store on your computer. Electrodeposition is one attractive method for fabricating GMR-type materials. This talk focuses on the electrodeposition of alloy thin films of nickel-iron and nickel-iron-copper. I will present data on the chemical and structural characterization of these materials.