

Fabrication and Characterization of nano-scaled magnetic tunnel junctions

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Abstract

Magnetic tunnel junctions have been of an interesting and important subject in the last two decades or so. The driving forces are mainly due to the emerging of the fundamental understanding of the underlying physics of spin dependent transport and the fabrication techniques developed for facilitating such study. Most of all, the potential applications for the industries of memory, data storage and magnetic field sensing are indeed drawing intensive attention in the science and engineering communities. In this presentation the nanofabrication processes using electron beam lithography in conjunction with ion beam etching for making sub-100 nm scaled magnetic tunnel junctions and the electrical transport properties using the external magnetic field switching and current-driven switching will be illustrated.