

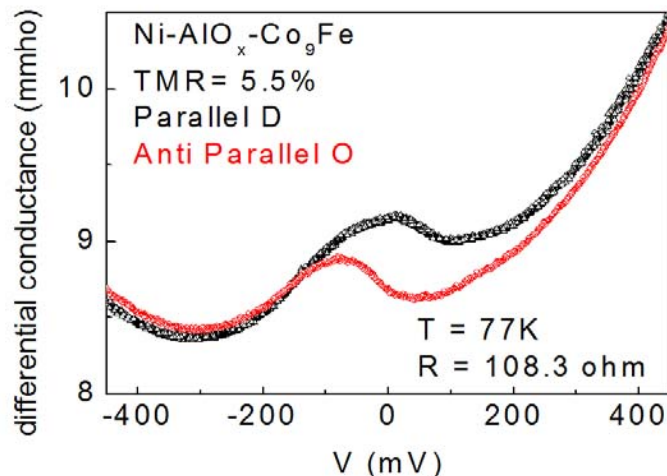
Studies of Magnetic Tunnel Junctions and Superconducting Films

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NNIN Facilities utilized: Characterization Facility & Nanofabrication Center

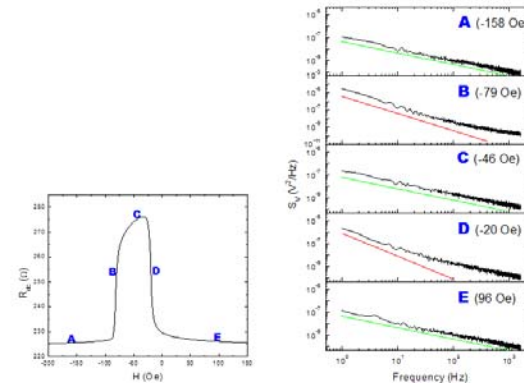
DESCRIPTION OF WORK

- Measurements of density of states effects in magnetic tunnel junctions.
- Understanding magnetic tunnel junction noise.
- Superconducting vortex lattice pinning on the nanoscale.



MAJOR OBSERVATIONS

- For the first time a non-flat magnetic density of states has been observed in Ni based tunnel junctions. (See variation in differential conductance in lower left figure.)
- The apparent f^{-2} noise reported in magnetic tunnel junctions has been shown to be a combination of f^{-1} noise and the magnetic aftereffect.



Publications

- Nickel Magnetic Tunnel Junctions and Density of States Effects, Gregory M. McKusky and E. Dan Dahlberg, to be submitted
- An investigation of the magnetic state dependent low frequency noise in Magnetic Tunnel Junctions, Feng Guo, Gregory M. McKusky and E. Dan Dahlberg, to be submitted