

Abstract Submitted
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Ferromagnetism inside of magnetic tunneling junctions¹ GLENNIE MESA, USU and Cornell — Over this past summer I performed research with different annealing temperatures cooling rates for Magnetic Tunneling Junctions (MTJ's). The MTJ's were composed of a 3nm FeCoB ferromagnet, a 1.6 nm MgO tunneling barrier, and a 3nm FeCoB ferromagnet pinned by a 15nm IrMn anti-ferromagnet. This speech also includes a review of concepts that include; coercivity (of the free and fixed layer), Tunneling Magneto resistance (TMR), exchange bias, and a basic concept of the parallel/anti-parallel configuration of the sample and how this affects resistance. This particular study was on two things;

1. How the maximum thermal annealing temperature affects TMR.
2. How holding the maximum thermal annealing temperature constant and varying the cooling rates (.2 c/sec, 2 c/sec, 137 c/sec) affects the coercivity of the free layer and the exchange bias.

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Glennie Mesa
USU and Cornell

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