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Electro-magneto-thermal characterization of ferromagnetic thin films. SANDEEP KUMAR, DAVIL GARCIA, Univ of California - Riverside — In this work we report electro-magneto-thermal characterization of ferromagnetic multilayer thin films. These thin films include Co/Pd, Co/Pt and CoFeB/MgO multilayers. We carried out in-situ focused magneto optic Kerr effect based hysteresis measurement while the specimen was under DC bias to ascertain the electromagnetic behavior. These experiments are then supplemented with in-situ transmission electron microscope studies to verify the microstructural changes. We also report thermal conductivity measurements using 3-omega method. Thermal conductivity measurements suggest thermo-magnetic resistance due to spin scattering at the interfaces in multilayer thin films.

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