

Seminar

Spin orbit effects in β -Tungsten

Avyaya J. Narasimham

State University of New York, Albany

Spin-orbit coupling in metastable β -W generates spin-orbit torques (SOT) strong enough to flip the magnetic moment of an adjacent magnetic layer. Two reliable deposition techniques, either by introducing either O₂ gas or N₂ gas, to grow β -W films up to 20 nm on various substrates is studied. Inserting a 1 nm Ta insert-layer between the CoFeB and W induces perpendicular magnetic anisotropy in these layers. β -W(5)/Ta(1) channel and the adjacent CoFeB/MgO/Ta layers are patterned into Hall bar and Hall cross structures. The effect of orthogonality between current and external magnetic field on symmetry and coercivity of hysteresis is studied. An empirical model to quantitatively understand the switching will be presented.

Monday, Jan 22nd 2018

04:00 PM (Tea/Coffee at 03:30 PM)

Auditorium, TIFR-H