

Seminar

Engineering Spin-Orbit Coupling in Spin Hall Materials

Chandrasekhar Murapaka

IIT, Hyderabad

Spin-orbit coupling (SOC) plays a key role in realising the spin-orbit torque-based memory and logic devices. The Spin Hall effect originated from strong SOC generates a transverse spin current from a longitudinal charge current. Besides, SOC is responsible for generation of swirling topological spin textures such as skyrmions. In this talk, I will first discuss about the tunability of SOC in heavy metals and topological insulators. Later, I will show skyrmion based logic structures using micro magnetic simulations. Finally, I will briefly discuss about our attempts towards realising room temperature skyrmions in ferrimagnetic thin films.

Wednesday, Aug 28th 2024

16:00 Hrs (Tea / Coffee 15:45 Hrs)

Auditorium, TIFR-H