

Title: Recent Developments in Spin Transfer Torque

While a large current density ($\sim 10^8$ A/cm²) passes through a magnetic nanostructure, spin angular momentum of the spin polarized current can be transferred locally to a thin ferromagnetic layer and provides a local instability. In this talk, the concept of spin transfer torque (STT) in different types of spintronics devices will be introduced. Different application mechanisms of the STT effect, including STT-magnetoresistive random access memory (STT-MRAM) and spin torque oscillators (STOs) as promising devices will be overviewed. Very recent progress in this area, including soliton and propagating spin wave modes, magnetic droplet, vortex, skyrmion and spin Hall effect based STT elements will be discussed.