

# NanoMagnetism Group

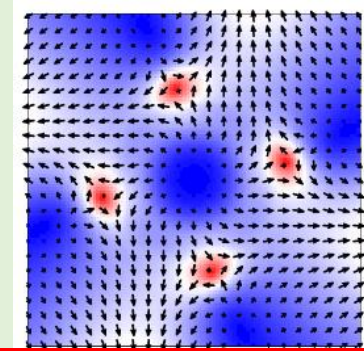
We are working on magnetic thin films and nanostructures, micromagnetic simulation study of magnetic skyrmions and spin ice, magnetic sensors.

## Magnetic Skyrmions

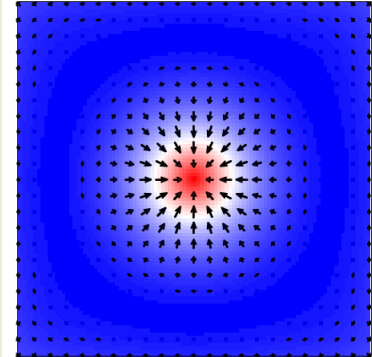
Skyrmions are promising candidates for the next generation energy-efficient spintronic applications due to their unique topological properties. We are studying the creation of magnetic skyrmions using spin-transfer torques in multilayer nanostructures. Our recent studies showed the formation of an isolated skyrmion, skyrmion lattice and antiskyrmion lattice in Co/Pd nanostructure due to magnetization reversal from the system's edges [**Sci Rep 11, 18945 (2021)**]. Our micromagnetic studies suggest that the two distinct lattice phase's evolution could help to design the topological spin textures based devices.

## Gas sensors

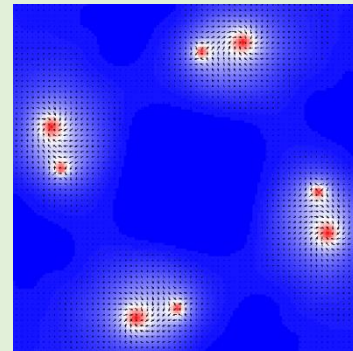
Iron oxide is a widely used gas sensing material to detect toxic gases. It has grabbed much attention by researchers across the globe due to its cost-effectiveness in production, simplicity and sensitivity towards different gases. We are studying the iron oxide films prepared using low cost spray pyrolysis technique for gas sensing applications.



Antiskyrmion lattice



Isolated skyrmion



Lattice of skyrmion and antiskyrmion

## Research group

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## Alumni

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