



Symposium M : Spin-orbit interaction and topological spin texture

Scope of the Symposium

Spin-orbit coupling (SOC), the relativistic interaction of spin and orbital degrees of freedom of electrons, induces electronic and magnetic properties that are often hallmarked by distinct spin textures. Classic examples include spin-split electronic dispersion due to the Rashba SOC and chiral spin texture due to the Dzyaloshinskii-Moriya interaction (DMI) at the surfaces and interfaces with broken inversion symmetry. The symposium aims to cover recent progress in investigating emergent phenomena induced by SOC, with particular emphasis on the topological spin texture. The material systems include magnetic skyrmions, polar skyrmions, Bloch points, magnetic topological insulators and semimetals, and two-dimensional van der Waals magnets. The main goal of this symposium is to bring together worldwide experts in all the areas of synthesis, characterization, device application, and theoretical approaches and create an interdisciplinary forum based on a common interest.

Abstracts will be solicited in (but not limited to) the following areas

- *Synthesis and characterization of magnetic topological materials*
- *Synthesis and characterization of materials with magnetic topological defects*
- *Electronic and magnetic properties of magnetic topological materials and two-dimensional magnets*
- *Study on static and dynamic behaviors of spin textures*
- *Imaging skyrmions, Bloch points, and other magnetic topological spin textures*
- *Device applications of topological spin textures*
- *Theoretical and modeling approaches*

Tentative list of invited speakers (To be confirmed)

Sung-Kwan Mo (LBNL) **Ki-Suk Lee** (UNIST) **Yulin Chen** (University of Oxford) **Wanjuan Jiang** (Tsinghua University) **Claudia Felser** (MPI Dresden) **Teruo Ono** (Kyoto university) **Binghai Yan** (Weizmann Institute) **Christopher Marrows** (University of Leeds) **Kin Fai Mak** (Cornell Univ) .

Symposium Organizers

Mi-Young Im (LBNL) **Soong Geun Je** (Chonnam National University) **Hyejin Ryu** (LBNL) .

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XIX Brazil MRS Meeting