Post-doctoral fellowships in spintronics on magnetic skyrmions at Spintec

Spintec invites applications for postdoctoral fellowships in spintronics on magnetic skyrmions. Magnetic skyrmions are nm scale topological spin textures that hold great promise for storing and manipulating the information at the nanoscale. Spintec has recently demonstrated magnetic skyrmions at room temperature in ultrathin nanostructures [1] and their manipulation using gate electric fields [2], electric currents [3] and light [4]. These results are a first step towards the practical realization of logic and memory devices based on magnetic skyrmions.

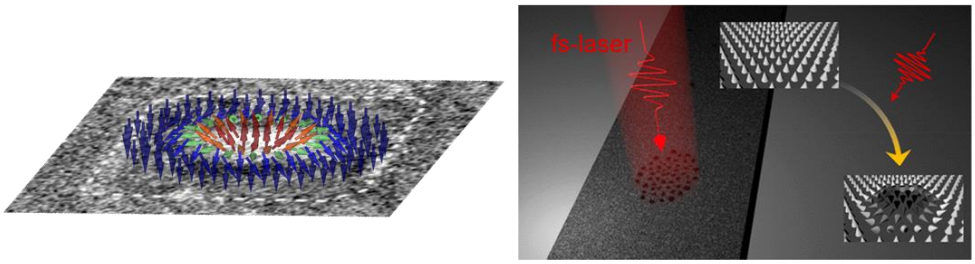

Fig.1 Left X-ray microscopy image of a magnetic skyrmion and its schematic representation [1]. Right: Illustration of the creation of a skyrmion lattice in ultrathin films using fs laser pulse excitation [4].

Spintec proposes several experimental and modelling post-doctoral positions on magnetic skyrmions and their manipulation with the objective of pushing forward fundamental knowledge in view of technological applications for memory and logics. The aims will be 1. to develop novel material systems to achieve nm scale skyrmions stable at room temperature and allow their efficient manipulation (position 1) 2. to explore the skyrmion manipulation by current and electric field and their interaction (position 2) 3. to model the dynamics of magnetic skyrmions and their interaction using analytical and numerical tools (atomistic and micromagnetic simulation) (position 3).

This position is part of a larger project with the aim of pushing forward fundamental knowledge on magnetic skyrmions in view of technological applications for memory and logics. Applicants should hold a phd in solid state physics or related disciplines and have a previous experience in nanomagnetism or spintronics. Applications must include a CV, a motivation letter and be posted at these links: http://bit.ly/2LQSjM6 (position 1&2) or http://bit.ly/2LUt6QR (position 3). The position is expected to start in November 2019. Spintec is located in Grenoble, France.

More information: Olivier Boulle, olivier.boulle@cea.fr.

[1] O. Boulle et al., Nat. Nanotechnology 11, 449 (2016).
[2] Schott et al., Nano Letters, 17, 3006 (2017) T. Srivastava et al., Nano Lett. (2018).
[3] Juge et al., arXiv:1904.08275 (2019)
[4] S.-G. Je et al., Nano Lett. (2018).

SPINTEC
Commissariat à l'Énergie Atomique - INAC
Centre de Grenoble - 17, rue des Martyrs - 38054 Grenoble Cedex 9 France
Tél. : +33 (0)4 38 78 23 83 - +33 (0)4 38 78 21 27 - inac.cea.fr/spintec