

Post-Doc Position in the SPIN Team at the Institut Jean Lamour (IJL), Nancy, France

Combine effect of spin current and light on the evolution of magnetic microstructure

The SPIN team at the Institut Jean Lamour (IJL), located in Nancy, France, is seeking a highly motivated post-doctoral researcher to join our group (<https://spin.ijl.cnrs.fr>) in January 2025. This position offers an exciting opportunity to work on cutting-edge research in the field of nanomagnetism and spintronics.

Project Description: The successful candidate will focus on studying the evolution of magnetic microstructures under ultra-fast laser excitation, with particular emphasis on all-optical magnetization switching (AOS). You will be responsible for operating and further developing a low-temperature Kerr microscope, which will be used to simultaneously perform imaging and transport measurements. This system combines state-of-the-art technologies to study magnetic phenomena at ultra-fast timescales and low temperatures.

Key Responsibilities:

- Lead experimental research on ultra-fast magnetization dynamics using a low-temperature Kerr microscope.
- Perform imaging and transport measurements simultaneously to study the magnetic properties of nanostructures.
- Investigate the mechanisms behind all-optical magnetization switching in various materials.
- Work closely with a dynamic and collaborative research team in the SPIN group, contributing to both experimental and theoretical advancements.

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Required Qualifications:

- PhD in Physics, Material Science, or a related field.
- Strong background in nanomagnetism, spintronics, or condensed matter physics.
- Expertise in Kerr microscopy and cryogenic techniques, with hands-on experience working with cryostats.
- Familiarity with ultra-fast laser setups and/or magneto-optical imaging methods.

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Desirable Skills:

- Experience in handling and developing custom experimental setups.
- Knowledge in spin dynamics, magnetic imaging, and laser-material interactions.
- Strong analytical skills and proficiency in scientific programming (e.g., MATLAB, Python).
- A collaborative and interdisciplinary research environment.
- Access to world-class facilities and equipment, including the Davm competence center for ultra-high vacuum nanomaterial deposition and analysis.
- Opportunities to present your work at international conferences and collaborate with leading researchers in the field.

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How to Apply: Interested candidates should send a detailed CV, a cover letter explaining their research interests, and contact details of two references to **Stéphane Mangin** (stephane.mangin@univ-lorraine.fr).