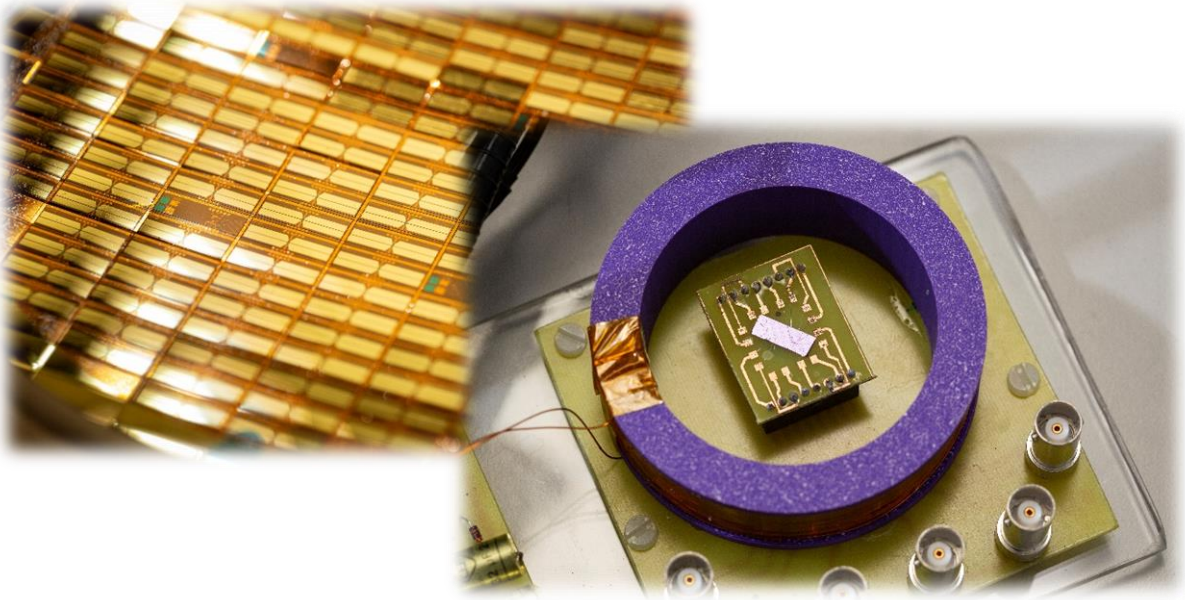
OPEN position for a Research Scientist on MTJ based devices (MRAM, sensors) at SPINTEC

Position:

SPINTEC is opening a researcher position in the field of magnetic tunnel junctions spintronics devices, namely MRAM and magnetic sensors.



Spintronics, with the magnetic tunnel junction as its core component, is an emerging technology poised to tackle the challenges faced by information and communication technologies, particularly in applications demanding high endurance, low power consumption, and minimal operating voltage, such as those in Artificial Intelligence. This technology offers two key advantages: its memory function enables non-volatile computing and storage solutions with significantly enhanced energy efficiency, while its magnetic sensor function pushes the boundaries of sensitivity, measurement range, and compactness.

The "MRAM" team has recently shown that phenomena like spin transfer and spin-orbit torques, traditionally studied for MRAM applications, can be leveraged for magnetic sensors. In parallel, SPINTEC has recently focused on developing sensors with exceptionally low detectivity levels by combining cutting-edge magnetic stacks with innovative approaches to further reduce detection limits.

Within the SPINTEC Devices Group, the MRAM and Magnetic Sensor teams are engaged in developing innovative devices through both national and international academic partnerships. Their proximity to practical applications fosters a strong dynamic of industrial collaboration. The recent establishment of the academic spintronic pilot line, SPIN*fab*, provides access to pre-industrial technological resources, facilitating the development of devices based on magnetic tunnel junctions and strengthening long-term collaborations. Comprising five permanent researchers, along with postdocs, PhD students, and interns, the MRAM and the Magnetic Sensors teams explore innovative concepts for advanced technological applications, pushing the limits of materials and devices. They cover the entire value chain, from fundamental research to technological transfer to industry, with a focus on addressing emerging technological needs with high impact potential.

We are seeking a researcher to bolster our magnetic tunnel junction activities at SPINTEC. The ideal candidate will spearhead pioneering and innovative research in the domains of magnetic sensors and magnetic memories (MRAM), while also fostering partnerships and collaborations at both the French and European levels, as well as industrials. He/She will:

- Leverage an established activity with access to a comprehensive experimental facility, including multiple material deposition systems, clean rooms, and advanced characterization equipment.
- Cultivate and strengthen internal collaborations with other teams within the laboratory, particularly in the areas of design, theory, and experimental work.
- Capitalize on an extensive network of existing national and international collaborations, including partnerships such as the PEPR Electronics and PEPR SPIN national initiatives.
- Contribute to the execution of research programs with industrial partners already underway, by overseeing the collaborative research efforts.
- Drive the evolution and diversification of collaborations through independent research and by mobilizing the necessary support within the laboratory teams.

Profile

SPINTEC seeks candidates with a strong foundation in spintronics, with a particular emphasis on magnetic memories and sensors. The ideal candidate should possess a PhD and have substantial research experience in the development of magnetic tunnel junctions (MTJs) for applications such as magnetic sensors and magnetoresistive random access memories (MRAM). This experience should encompass design and optimization of material stacks, experimental characterization, and performance measurement of devices.

The candidate should also have research experience in one or more of the following areas:

- Development of novel magnetic materials or innovative concepts for spintronic applications, potentially involving the design of scientific instrumentation in analog or digital electronics for specialized measurements.
- Experience in an industrial setting or familiarity with industrial requirements and constraints within academic-industrial collaborative research, particularly in the domains of magnetic memories (MRAM) and/or magnetic sensors.
- Modeling and simulation of the dynamic switching behavior of MRAM cells via spin transfer and/or spin-orbit torques, as well as the quasi-static behavior under magnetic fields for sensor applications, considering magnetostatic interactions or proximity effects.
- Supervision and mentorship of students and researchers at the Master, PhD and postdoc level, project management, participation in research projects, and publication of findings in scientific journals.

How to Apply:

We invite candidates to submit a cover letter and a detailed CV via email to direction.spintec@cea.fr. The application deadline is April 15, 2026.

In the cover letter, candidates should outline how their experience and vision align with and support the long-term interests of the host institution, facilitating the conduct of original research and the establishment and management of research collaborations with both academic and industrial partners.

Shortlisted candidates will be promptly notified and invited for an interview scheduled for the beginning of May 2026.

This position is offered as an indefinite-term contract within the French Alternative Energies and Atomic Energy Commission (CEA, www.cea.fr). The proposed salary will be commensurate with the candidate's experience.

About SPINTEC

Positioned at the crossroad of science and technology, SPINTEC (SPINtronique et TEchnologie des Composants, http://spintec.fr) stands as one of the world's premier spintronics research laboratories.

Established in 2002, SPINTEC has rapidly grown to encompass 120 individuals, including 54 permanent staff from CEA, CNRS, and Grenoble-Alpes University. The laboratory's mission is to bridge the gap between fundamental research and practical applications in spin electronics. Consequently, SPINTEC's outputs extend beyond scientific publications and presentations at international conferences to include a robust patent portfolio, the development of functional demonstrators, and advanced device nanofabrication. Over the past two decades, the lab has successfully launched six startup companies. This dynamic synergy has positioned SPINTEC at the forefront of spintronics research, significantly contributing to the industrial adoption of spintronic memories, known as MRAM, for which the laboratory holds key patents. SPINTEC thrives in an ideal local environment, offering a wide array of opportunities.

SPINTEC is part of the Interdisciplinary Research Institute of Grenoble (IRIG), which encompasses 10 laboratories and boasts a collective of over 1000 researchers, technicians, doctoral, and post-doctoral students. IRIG fosters interdisciplinary expertise across physics, chemistry, and biology, and provides access to state-of-the-art scientific and technological platforms, including the PTA cleanroom and the nano-characterization facility PFNC.

The Giant Campus Site, also known as the Scientific Presqu'Ile, offers an exceptional scientific ecosystem with esteemed partners such as CEA-LETI, the Néel Institute, and major European facilities like the ESRF and ILL on the EPN Campus. The entire Grenoble Alpes University Campus is characterized by a vibrant collective dynamic, addressing research challenges across all fields of knowledge.

Grenoble, nestled in the heart of the French Alps, is a cosmopolitan city where one in five residents is engaged in research, innovation, or higher education. Beyond its academic prowess, Grenoble offers a rich tapestry of cultural and sporting activities throughout the year.