



Post-Doctoral and fixed term R&D Engineer openings at SPINTEC

CONTEXT

Project: SPINTEC offers several 24-month positions for postdoctoral researchers or research engineers, funded by the EU and French National Research Agency ANR. The projects focus on spintronic innovations for a sustainable digital technology, emphasizing advanced magnetic memory and spintronics-based radiofrequency technologies. Work will occur within the 'MRAM' and 'RF-spintronics' teams, in collaboration with 'Nanofabrication' and 'Theory and Simulation' teams.

Research: The candidate will autonomously manage the nanofabrication and electrical characterization of spintronic devices, focusing on their co-integration with CMOS circuits. This includes fabricating advanced magnetic tunnel junctions in a spin transfer torque (STT) configuration using the upstream technology platform (PTA) and other cleanroom resources. The candidate will use MRAM and RF-spintronics teams' tools for electrical and magnetic characterization.

POSITION

The candidate will create complex devices using nanofabrication processes in the lab, including electronic, laser, and UV lithography, resist chemistry, and material deposition by evaporation, sputtering, IBE, and RIE.

Process optimization will take into account physical measurements (structure, topography, electrical transport, and magnetism).

The candidate will conduct both basic and advanced electrical characterization of magnetoresistance in static, pulsed, or dynamic setups to assess memory functionalities (magnetization switching) and RF functionalities (microwave signal generation, detection, and manipulation) related to magnetic tunnel junction composition and nanofabrication steps.

Required skills:

- Basic understanding of spintronics, magnetization dynamics, and magnetic tunnel junctions.
- Basic knowledge of magneto-resistance or high-frequency measurement techniques (spectrum and network analyzers).
- Familiarity with nanofabrication techniques.
- Basic understanding of material structural properties and characterization.
- Ability to collaborate with research teams, document processes and results, and present them clearly in group meetings.
- English proficiency at B1-B2 level (European framework).

How to apply: Please send a CV and a letter of motivation to Ursula EBELS (ursula.ebels@cea.fr) and Ricardo SOUSA (ricardo.sousa@cea.fr)

- Starting date: 3 month after acceptance, based on CV and interview
- Employer: CEA

SPINTEC

SPINTEC (SPINtronique et TEchnologie des Composants, <https://www.spintec.fr>) is a leading global spintronics research lab. Founded in 2002, it has grown to more than 100 people, including 48 permanent staff from CEA, CNRS, and Grenoble-Alpes University. The lab bridges fundamental research and spin electronics applications, producing scientific publications, patents, and device nanofabrication for functional demonstrators. It has launched four start-ups in 12 years, with two more planned. This synergy has placed SPINTEC at the forefront of spintronic memory, MRAM, with key patents.

SPINTEC benefits from an ideal local environment with a large spectrum of opportunities:

- SPINTEC is part of the Interdisciplinary Research Institute of Grenoble (IRIG), which comprises 10 laboratories and 1000 researchers, technicians, and students. IRIG offers expertise in physics, chemistry, and biology, and access to advanced platforms like the PTA clean-room and PFNC for nanocharacterization.
- The [Giant Campus](#) Site, also known as Scientific Presqu'île, provides an excellent scientific environment with partners like CEA-LETI, Néel Institute, and major European facilities such as ESRF and ILL on the EPN Campus.
- [Grenoble Alpes University](#) campus, acknowledged by the national IDEX award, fosters dynamic research across all knowledge fields.

Grenoble, a cosmopolitan city in the French Alps, has one-fifth of its population working in research, innovation, or higher education. It also offers year-round cultural and sports activities.