

Postdoctoral position at CRM2 – University of Lorraine (Nancy, France)

In the framework of the development of barocaloric refrigerators (collaborative European project <https://frostbitproject.eu>), we are looking for a postdoctoral researcher to join us at CRM2¹ at the Université de Lorraine, France. This is a full-time, 24-month position focusing on the measurement of phase diagrams (T, P) of spin crossover (SCO) compounds using X-ray diffraction (XRD), Fourier-transform infrared spectroscopy (FTIR), and optical measurements. The work will be carried out under the supervision of Dr. Maxime Deutsch and Dr. Dominik Schaniel. At CRM2, our research focuses on exploring materials under non-ambient conditions—combining pressure, temperature, light irradiation—with advanced characterization techniques including XRD and IR spectroscopy.

Candidate profile

We are looking for a highly motivated PhD graduate with experience in high-pressure techniques, particularly using Diamond Anvil Cells, and a keen interest in instrument development. The recruited postdoc will work on two main projects:

1. **Development of Experimental Setup:** Implementing and improving our system capable of simultaneous temperature and pressure control for XRD and IR spectroscopy measurements.
2. **Phase Diagram Characterization:** Investigating the structural behavior of selected SCO compounds across various points of their (P, T) phase diagrams.

Applicants should therefore have a solid background in physics, with specific expertise in high-pressure techniques. Experience with PXRD/XRD and/or spectroscopy methods is highly desirable. Familiarity with phase transitions and thermodynamics will be considered a strong asset.

Keywords: Barocaloric effect, pressure, X-ray diffraction, phase diagram

Post-Doc duration: initially 12 months, extendable to 24 months.

Salary (net): of the order of 2100-2700 Euros per month, depending on the researcher's experience

Application procedure

Interested candidates are invited to submit the following materials:

- A complete CV, including a list of publications
- A motivation letter
- Contact information for references (or letters of recommendation)

Applications should be sent to both:

maxime.deutsch@univ-lorraine.fr and dominik.schaniel@univ-lorraine.fr

Deadline for the application: Applications will be considered until the position is filled. Interviews will start on mid-September 2025.

Starting date of the contract: as soon as a suitable candidate is found.

¹ Laboratoire de Cristallographie, Résonance magnétique et modélisation, UMR UL-CNRS 7036, Nancy, France ; <https://crm2.univ-lorraine.fr/>