



Post-doctoral researcher in the NMR group at Grenoble high magnetic field laboratory (LNCMI), M/F

General information

Workplace: LNCMI-Grenoble
Type of Contract: Full Time Contract Scientist
Contract Period: 18 months.
Expected date of employment: 1 May 2023
Remuneration: gross salary from 2395 € per month, depending on experience
Desired level of education: PhD
Required experience: Indifferent
Applications through the UGA web-interface, link given below.

Missions

The postdoctoral researcher will work in the NMR group at LNCMI-Grenoble, employing broadband Nuclear Magnetic Resonance (NMR) for experimental research in condensed matter physics, in the field of quantum magnetism. He or she will join the project whose objective is to valorize the new hybrid magnet that will provide the highest magnetic fields at LNCMI-G, up to 43 T. He or she will investigate samples in which the "exotic" magnetic-field-induced phases, such as Bose-Einstein condensates, magnetization plateaus, supersolid and spin-nematic phases, appear at the highest magnetic field values, and will develop the corresponding NMR probes and instrumentation for the high-field magnets and the cryogenic environment (down to 50 mK). He or she will also assist the scientists that visit LNCMI to perform high-field NMR experiments on their own projects.

Activities

The postdoctoral researcher will perform scientific research using the NMR technique and, as a "local contact", will provide support to scientists visiting LNCMI for high-field NMR experiments on their projects. In particular, he or she will:

- prepare, improve and develop the instrumentation as required by the high-field NMR experiments;
- perform NMR measurements in the high-field magnets at LNCMI-Grenoble;
- analyse and interpret the experimental data;
- disseminate the results through publications, reports and presentations for meetings and conferences;
- collaborate with members of other research groups at LNCMI and in other laboratories, in particular for complementary results by other experimental techniques and for a theoretical description and interpretation.

Skills

The candidate should be motivated for topical research in a high-level international laboratory and is expected to have a strong scientific background. He or she should have experience in magnetic resonance (NMR or ESR, preferably in condensed matter) or in experimental studies of strongly correlated electron systems. Experimental skills are essential. Finally, fluency in spoken and written English is mandatory.

Work Context

LNCMI-Grenoble is one of a few laboratories dedicated to research in the highest available magnetic fields, and is open to visitors for their own high-field research projects. The new LNCMI hybrid magnet will be operational by the end of 2023, to produce continuous fields up to 43 T. Our project will develop and perform the first NMR experiments in this magnet.

NMR is unique and particularly suitable technique to provide microscopic information on magnetism in extremely high magnetic fields. The LNCMI NMR group is a world leader of such NMR research.

Ensuring the role of a "local contact" for the scientists visiting LNCMI on their projects establishes connections with different research groups and scientific subjects and is thus strongly beneficial to young scientists.

Constraints and risks

Some high-field experiments may occasionally be performed during weekends or overnight. Workplace safety regulations regarding high magnetic fields exclude candidates with pacemakers or magnetic metal implants.

Comments

Applications should include a cover letter and a CV mentioning at least two references and a complete list of publications and conferences. Contact for further information <mladen.horvatic@lncmi.cnrs.fr>. Applications exclusively through the UGA web-interface <https://emploi.univ-grenoble-alpes.fr/offres/doctorants/chercheur-e-postdoctoral-e-en-rmn-en-champs-les-plus-intenses-pour-les-phases-exotiques-du-magnetisme-quantique-1203050.kjsp?RH=TLK_DOCTORANTS>. (The interface is in French, please use "Google translate" if necessary.)

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