

BEAMLINE SCIENTIST AT THE CRISTAL BEAMLINE

Soleil is the French national synchrotron facility, located on the Saclay Plateau near Paris, and partner of the Paris-Saclay University. It is a multi-disciplinary instrument and a research laboratory, whose mission is to exploit the use of synchrotron radiation, develop state-of-the-art instrumentation on beamlines, and make them available to the scientific community. SOLEIL, a unique tool for both academic research and industrial applications, is used by over 3 000 researchers from France and abroad, across a wide range of disciplines including physics, biology, chemistry, material sciences, environment and earth sciences etc... It is based on a state of the art 3rd generation synchrotron source, both in terms of brilliance and stability. The facility is a “public” company founded by the CNRS and the CEA, which employs about 350 people.

The CRISTAL beamline is a hard X-ray (5-30 keV) undulator-based beamline, dedicated to X-ray diffraction for the characterization of the structural properties of mater at different space and time scales, possibly in non-ambient conditions. Among “classical diffraction techniques” like single crystals and powders diffraction, other state of the art techniques are offered (high-resolution, time-resolved and coherent diffraction).

See <http://www.synchrotron-soleil.fr/Recherche/LignesLumiere/CRISTAL> .

The CRISTAL beamline serves a wide variety of communities covering a broad range of disciplines: physic, chemistry, biology, materials sciences, earth sciences...

A permanent position is currently offered: the successful candidate will join the current team consisting of 2 permanent beamline scientists, a technician and PhD students. The variety of subjects that can be studied at CRISTAL makes it a very stimulating beamline to work on.

I.Mission

As a beamline team member, the successful candidate will be responsible for the following main tasks:

- maintenance and development of the experimental set-ups (beamline and experimental end-stations),
- provide scientific and technical assistance to external users to help them carry out their own experiments,
- conduct its own research program.

In addition this beamline scientist will be in charge to develop x-ray diffraction based imaging techniques using sub-micron beams.

- He/she will be encouraged to develop collaborations and attract new users.
- He/she will actively participate in user support activities and will be involved in all aspects (scientific, technical, and methodological) of the beamline team's activities.

The responsibilities of the successful candidate will also include:

- Maintain the high level of attractiveness of the beamline, by promoting the existing instrumental set-ups and in particular the diffraction imaging techniques, proposing new instrumental or theoretical developments or new research fields.

- Develop an autonomous scientific research project, either independently or in collaboration (examples of studied materials at the beamline include correlated systems, nano-crystals, battery materials, porous materials...).
- Communicate with the national and international x-ray diffraction communities.

II. Education and Experience

To qualify, applicants must hold a Ph.D. or equivalent, and a significant experience in x-ray diffraction.

The following skills are mandatory:

- Mastering powder diffraction, single crystal diffraction and structure solution methods,
- Good knowledge of crystallography.

In the context of the SOLEIL II upgrade project, the successful candidate must be highly motivated to take part in the beamline upgrade project.

Complementary skills in one or more of the following areas would be a major asset:

- Hard x-ray diffraction-based imaging technique
- Programming skills (in python)
- High pressure sciences (using diamond anvil cells)
- Pair Distribution Function analysis in 1D and 3D
- Basic knowledge of instrumentation: e.g. control and acquisition electronics/computing, detection, cryogenics, robotics, etc.

Complementary ability:

- The candidate should be fluent in English (written and spoken).
- Practice of French is also highly desirable and will be an asset.
- The position requires both autonomy and the ability to work as part of the beamline team.

III. Terms and conditions

This offer corresponds to a permanent position.

The remuneration will be based on the SOLEIL salary scale, and determined according to the professional background, qualifications and degrees held by the candidate.

The place of work will be at Synchrotron SOLEIL, which is located in the Paris suburbs (Saint-Aubin).

Applications should include a motivation letter, a Curriculum Vitae and letters of support. Applications should be preferably registered directly on SOLEIL's web site at:

<https://candidature.synchrotron-soleil.fr/YourApplication/Candidatures.php?ref=EXP-174>