



## EXPERIENCED RESEARCHER FOCUSING ON CORRELATIVE MICROSCOPY IN THE FIELD OF LIFE SCIENCES (M/F)

Permanent contract | Fulltime/40h | Belvaux

### Context

As a key player in research and innovation in Luxembourg, the Luxembourg Institute of Science and Technology (LIST), with its employees, is active in the domains of materials, the environment and IT. As an RTO (Research and Technology Organisation) and with its interdisciplinary impact-driven approach, LIST contributes to the development of Luxembourg's economy and society.

The Materials Research and Technology Department (MRT) translates cutting-edge materials research into applicable technology, with about 180 collaborators. For this, the department cultivates close relationships and joint projects with both academic and industrial partners, and contributes to Luxembourg's and Europe's innovation agenda in Materials Research and Technology.

The Advanced Instrumentation for Ion Nano-Analytics (AINA) group of the MRT department at LIST focuses on the development of scientific instruments based on charged particle beams for nano-imaging and nano-analysis and correlative workflows taking advantage of these instruments. We are a multi-disciplinary team giving the group the complete spectrum of know-how that is required to convert innovative ideas and concepts into prototype instruments. During the past few years we have been developing in particular a Secondary Ion Mass Spectrometry (SIMS) add-on system for DualBeam Instruments (FIB-SEM), the Helium Ion Microscope (HIM) and for a Transmission Electron Microscope (TEM) as well as an Atomic Force Microscopy (AFM) system that we integrated into our NanoSIMS, allowing the advantages of high spatial resolution and high sensitivity chemical information to be combined in a single instrument. These instruments along with dedicated methodologies allow unique in-situ correlative microscopy approaches (SEM-SIMS, HIM-SIMS, TEM-SIMS, AFM-SIMS) in a variety of fields of application including materials science, life sciences and geology.

### Description

In this context, we have an opening for a permanent position for an experienced R&T Associate specialised in electron microscopy and/or ion microscopy and/or mass spectrometry applied to biological applications. The responsibilities of the candidate will include:

- Leading existing project activities in the field of correlative microscopy using electron and ion beams applied to biological applications and life science applications more in general
- Elaborating a roadmap in the field of life sciences for multi-modal multi-scale correlative microscopy and defining a strategy to implement this roadmap, in particular by defining and leading new project activities in this field, including writing and submitting proposals for competitive funding and collaborating with industrial partners such as instrument manufacturers
- Broadening the correlative microscopy concepts beyond electron & ion microscopy and mass spectrometry in the field of life science applications
- Coordinating activities with the Department's Materials Characterization and Testing Platform

Reference: MRT-2019-065

Application documents:

- CV
- Cover letter

Apply online: [MRT-Job offer](#)

Contact: [jobs@list.lu](mailto:jobs@list.lu)

### Your working environment

#### The research department

Through its research into advanced materials and processes, the "Materials Research and Technology" (MRT) Department with its 170 researchers and engineers, to the emergence of enabling technologies that underpin the innovation processes of local and international industry. MRT's activities hinge on three thematic pillars: nanomaterials and nanotechnology, sustainable composite materials and manufacturing and process technologies, including scientific instrumentation.

> [LIST.lu/MRT](#)

- Supervising post-doc researchers and PhD students participating in these projects
- Disseminating, valorising and transferring RDI results (patents, licenses, prototypes, publications, technical reports, participation in conferences, etc.)
- Participating in the management of the group's laboratories and taking charge of some of the group's instrument, including fulfilling the equipment quality and compliance follow-up and training the users
- Reporting to the group leader

## Profile

### Education

- Hold a PhD in biology, chemistry, physics or a related field

### Required seniority

- Have a proven track record of relevant professional experience. The positioning within LIST's grid will be based upon this experience

### Competencies

- Strong experience in microscopy and/or imaging mass spectrometry applied to life sciences (e.g. Secondary Ion Mass Spectrometry (SIMS), Scanning Electron Microscopy (SEM), Focussed Ion Beam instrumentation (FIB), Transmission Electron Microscopy (TEM), etc.)
- Strong experience in sample preparation for microscopy in biological applications. Knowledge of cryo-workflows would be an asset
- Good experience in correlative workflows, data processing and data visualisation, including methodologies and algorithms for image fusion and co-registration
- Experience in setting-up new academic and industrial collaborations
- Experience in grant writing
- Possess a sound experience in valorising scientific and technological results
- Interest in working with prototype instrumentation
- Excellent communication, flexibility, organizational and interpersonal skills with team-oriented mind-set

### Language

- Be fluent in English (both oral and written)
- Knowledge of Luxembourgish, French or German will be an asset