

GROUP LEADER “PROCESS MODELLING, AUTOMATION AND ROBOTISATION (PROMAR)” (M/F)

Permanent contract | Fulltime/40h | Belval

Your work environment

The Luxembourg Institute of Science and Technology (LIST) is a Research and Technology Organization (RTO) active in the fields of materials, environment and IT. By transforming scientific knowledge into technologies, smart data and tools, LIST empowers citizens in their choices, public authorities in their decisions and businesses in their strategies.

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You will be part of the LIST Materials Research and Technology department

Through its research into advanced materials and processes, the department, with over 190 researchers and engineers, contributes to the emergence of enabling technologies that underpin the innovation processes of local and international industry. The department's activities hinge on four thematic pillars supported by dedicated platform specialists as below:

- nanomaterials and nanotechnology,
- scientific instrumentation and process technology
- structural composite materials and manufacturing
- and functional polymer unit

The new group that you will be in charge of

The Scientific Instrumentation and Process Technology (SIPT) RDI unit of the MRT Department is currently composed of the Advanced Instrumentation for Nano-Analytics (AINA) and the Plasma Process Engineering (PPE) groups. In the context of an integrated approach grouping manufacturing processes and characterisation systems, the SIPT Unit is currently setting up the “Process modelling, automation and robotisation (PROMAR)” group.

Such an integrated approach grouping manufacturing processes and characterisation systems is of highest interest not only for (routine) manufacturing, but also and importantly for the discovery/development of new materials. Accelerating the discovery of new materials as well as the associated research required for maturing these technologies into deployment, will require a radical departure from traditional forms of discovery, moving to closed-loop schemes. The SIPT unit will in particular focus on modular materials robotics platforms that can be assemblies of modular building blocks for synthesis and characterisation.

In this strategic context, the field of expertise of the new PROMAR group will need to be concentrated on the following three aspects:

- **Process modelling:** A first level of process modelling is required to integrate and interlace all aspects related to materials manufacturing and the characterisation aspects in a single closed-loop process, allowing an integrated autonomous process/research enabled by data interchange across synthesis/processing, characterisation, and analysis.

Job reference: MRT-2020-024

Application file:

- A CV
- A motivation letter
- References names of two or three referees

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Your working environment

The research department

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- **AI & deep learning:** AI and deep learning strategies will be used as an important tool to implement predictive systems in automated processes in view of developing automated synthesis infrastructure capable of self-optimising and self-parametrising using a number of different input parameters.
 - **Robotics & systems integration:** Designing appropriate robotics and making an intelligent systems integration will be key to move from the process models to hardware. For this third aspect, a close collaboration with MRT's prototyping team will be required.

Following LIST's RTO approach, the developments of the PROMAR group will be progressively implemented into prototypes and pilot lines that are either available within LIST or that will be specifically set up for these activities.

What you will be doing

We are now recruiting the PROMAR Group Leader. The Group Leader is responsible - in accordance with his/her Head of Unit - for the overall management, coordination, development and performance of his/her group. In this framework, his/her main missions will be to:

Strategy definition and implementation

- Define and propose to the Head of Unit a RDI strategy for the group, aligned with the SIPT unit's strategy and with LIST's missions as an RTO;
- Ensure the implementation of the RDI group's strategy and business plan;
- Ensure that the RDI group's contribution to the SIPT unit's performance indicators is achieved;
- Develop industrial partnerships that lead to bilateral research projects/programs, provisions of services and long term collaborations;
- Increase the impact and visibility of the group's and unit's RDI domain at the European level.

Group management

- Overall management, coordination and performance follow-up of the research group: lead a multicultural and multidisciplinary team of researchers and create a stimulating and satisfying work environment within the group, assume the operational responsibility of the group's human resources;
- Manage the portfolio of associated projects and activities related to the group;
- Guarantee the professional execution of the RDI projects of the group;
- Lead the definition of and manage as Principal Investigator large scale research and technology projects, in particular within EU programmes and with industry;
- Promote interdisciplinary collaboration with other RDI groups of the department;
- Be hierarchically the person responsible for the group members and assume the operational responsibility of the group's human resources;
- Insure the financial follow-up of the group's performances;
- Assist the Head of Unit in reporting tasks and other administrative activities;
- Report to the Head of Unit.

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Dissemination and valorisation

- Develop the valorisation of the group's outcomes in terms of publications, patents, licences, prototypes production, spin-offs;
- Develop external collaborations, partnerships and networks.

Scientific and Technology Excellence

- Beside these responsibilities and missions, the Group Leader shall continue to build his/her scientific and technological knowledge and directly contribute to projects relying on his/her high level of expertise.

Which profile we are looking for

- PhD in Materials Sciences, Physics, Chemistry or a related field of Engineering Sciences;
- Minimum of 15 years of professional experience after PhD, with at least three years in RDI group management;
- Renowned scientific and technology expertise in one of the group's fields of activities being process modelling, AI & deep learning applied to the automation of manufacturing processes and robotics & systems integration;
- Proven success in multiannual RDI projects and experience as a Principal Investigator of projects;
- Sound and proven knowledge and comprehension of both the industrial and academic world of automated processes and extensive experience in building relationships with industries;
- Strong communication and interpersonal skills;
- Fluency in English is a must, knowledge of French and/or German would be an asset.

Interested ? Please apply online

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The Luxembourg Institute of Science and Technology (LIST) is a mission-driven Research and Technology Organisation (RTO) that develops advanced technologies and delivers innovative products and services to industry and society. Located at the heart of Luxembourg's vibrant Research and Innovation Campus in Esch-Belval, LIST can ideally connect its over 500 specialists in materials, the environment and IT with virtually all of Luxembourg's other main research players such as the University of Luxembourg, LIH, LISER, Technoport, Luxinnovation and the National Research Fund. **LIST.lu**

The LIST is committed with equality of opportunities and gender balance