



EXPERIENCED R&T ASSOCIATE IN THE DOMAIN OF POLYMER PROCESSING AND ADDITIVE MANUFACTURING / 3D PRINTING (M/F)

Permanent contract | Fulltime/40h | Hautcharage

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

The Materials Research and Technology (MRT) Department of the Luxembourg Institute of Science and Technology (LIST) is seeking to appoint a Senior R&T Associate in the domain of polymer processing and additive manufacturing / 3D printing. As part of a Research and Technology Organization (RTO), the Materials Research and Technology Department develops Key Enabling Technologies (KETs) that underpin a wide range of products in strategic EU value chains and provide innovative solutions to societal challenges. MRT mainly addresses three EU KETs: Nanotechnology, Advanced Materials and Advanced Manufacturing and focuses its research on “new or improved” materials that provide a distinct performance advantage in comparison to the commonly used materials. Activities embrace the development, production or integration of advanced materials and equipment or systems dedicated to the synthesis and the characterization of such materials. KETs having applications in multiple industries in both emerging and traditional sectors, this approach is particularly suitable for Luxembourg which features a significant number of large, medium-sized and small industrial companies covering a broad range of sectors (transport, electronics, energy, cleantech, glass, buildings, cosmetics, metallurgy, space, equipment processing/engineering, health tech and others etc.). MRT aims at being active all along the materials value chain (from Raw Materials to semi-finished to end-products), including advanced capabilities in mature manufacturing, and the materials integration into advanced product technologies truly enabling the industrial innovation. In particular, MRT research focuses on advanced materials and processing paving the way for disruptive technologies in hydrogen energy, autonomous IoT, adaptive digitalized manufacturing, transient electronics, smart biosensors, fully-recyclable bio-based materials, lightweight structural composites and space resources.

The department MRT is currently composed of about 190 collaborators and is engaged in the following activities:

- a Research, Development and Innovation (RDI) unit which focuses on “Nanomaterials and Nanotechnology”. The aim of this unit is to translate the enabling capabilities of nanotechnology/nanomaterials into application-driven solutions, which take advantage of the functional properties of materials.
- a RDI unit dealing with instrumentation and process engineering in the fields of nano-analytical instruments and surface treatments relying on process technology.
- a RDI unit investigating functional and bio-based polymers including bio-degradable and recyclable plastics, macromolecular chemistry, responsive polymers and polymers physics.

Job reference: MRT-2020-018

Application file:

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

Apply online:

https://www.list.lu/en/jobs/materials-job-opportunities/job-offer/?tx_listjob_listjobdisplay%5BlistJob%5D=4004&cHash=776074fb3ca0baede3796efa3bc1a7aa

Your working environment

The research department

<https://www.list.lu/en/mrt/>

<https://www.list.lu/en/jobs/researchers/>

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**

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- a RDI unit studying structural composite materials with a specific focus on the design and durability of high performance and multi-functional composites based on advanced modeling expertise together with interface engineering towards better performance and durability
 - a transversal Platform regrouping materials characterization and testing, composites manufacturing and prototyping, which provides access and R&D expertise to state-of-the-art characterization in the field of Molecular Analysis / Elemental and Isotopic Analysis / Structure, Morphology and Topography / Mechanical Testing and Accelerated Ageing / Fire Testing / Thermal Analysis/ Composites manufacturing / Specific Prototyped high-end home-made processes and equipment.

The Functional Polymers (FP) Unit at the Luxembourg Institute of Science and Technology (LIST) is seeking a Senior R&T Associate in the area of polymer processing. Research into the processing and additive manufacturing / 3D printing of polymeric materials is a key competency in translating innovative solutions from functional polymer science into industrial utilization and real-world applications. The Functional Polymers Unit is part of the Materials Research and Technology (MRT) Department and addresses the tailoring and processing of polymers to achieve specific properties enhancements and multi-functionality through both experimental and numerical approaches, including macromolecular modelling. The unit pursue funding and carries out research through industrial contracts and competitive projects sponsored at the Luxembourgish and European levels, and is presently organized into two research groups focused on 1) the realization of sustainable polymeric materials and 2) the chemistry and physics of smart / responsive polymers. Within this second group, an additional expert domain on polymer processing and additive manufacturing / 3D printing will focus on physical processing (e.g. melt blending) and chemical processing (e.g. reactive extrusion) both generally and as they relate to 3D/4D printing. For this permanent position, we seek an experienced researcher with a strong background in polymer processing, extrusion and additive manufacturing / 3D printing.

What you will be doing

LIST is a Research and Technology Organization (RTO) that is strongly project and team oriented. Consequently, the researcher should be comfortable managing a broad range of research projects from fundamental to industrial. These projects will focus primarily on functional / smart polymeric materials, polymer composites and fibres, their compounding and extrusion and the final 3D/4D printed objects, as well as relevant structural, rheological and functional characterization tasks and proof-of-concept demonstrations of the real-world / industrial applications of such materials. The researcher is expected to secure funding to pursue such research, to publish scientific articles and patents and to contribute to the development of future research and technology activities. Such efforts should be performed in strong collaboration with other members of the group, the unit and the department. The researcher should have an excellent academic background and a strong record of accomplishments regarding publications, patents and proposal writing and project management. Experience with application-oriented research is considered a strong asset, including collaboration(s) with industry and transfer of RDI results to public and/or private partners. Experience organizing and/or participating in multilateral research consortia (such as EU projects) would be an additional asset.

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Which profile we are looking for

Education

- PhD in Chemistry, Physics, Materials Science, Polymer Engineering, or a related field

Required Seniority

- Between 6 to 20 years after PhD completion

Competencies

- Strong expertise in processing, extrusion and additive manufacturing / 3D printing of multifunctional polymeric materials / (nano-) composites together with the underlying polymer science of 3D/4D printed materials is required
- Evidence of significant research productivity (like publications, patents, project reports, technology transfer) is mandatory
- A team player with the ability to work with a diverse range of colleagues in an international environment is needed
- Track record of independently conceiving, executing and successfully completing projects is essential
- The following additional competencies would be considered strong assets:
 - Experience with application-oriented research and industrial partnerships
 - Experience supervising graduate students and post-doctoral researchers
 - Excellent written and oral communication skills e.g. in publications, patents, reports, presentations and/or proposals
 - Ability to effectively mentor and coordinate the efforts of multiple collaborators

Language

- Strong spoken and written English is mandatory
- Knowledge of French, German and / or Luxembourgish is considered an asset

Interested ? Please apply online

https://www.list.lu/en/jobs/materials-job-opportunities/job-offer/?tx_listjob_listjobdisplay%5BlistJob%5D=4004&cHash=776074fb3ca0baede3796efa3bc1a7aa

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