Grenoble INP - UGA is a renowned public institution of higher education and research, and a major player in the Grenoble ecosystem. It is the engineering and management institute of Grenoble Alpes University, and plays a leading role in the scientific and industrial community.

**Researcher in Materials Engineering**

<table>
<thead>
<tr>
<th>Job ad reference</th>
<th>2023-CHERCHINGEMAT-LGP2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research field</td>
<td>Polymer and composite materials, Lignocellulosic materials</td>
</tr>
<tr>
<td>Host laboratory</td>
<td>LGP2 (UMR 5518 Grenoble-INP, UGA et CNRS) <a href="https://lgp2.grenoble-inp.fr/">https://lgp2.grenoble-inp.fr/</a></td>
</tr>
<tr>
<td>Requested profile</td>
<td>PhD Student R1 Chemical Sciences and Materials Sciences- Materials Science / Characterisation</td>
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<tr>
<td>Location</td>
<td>Grenoble, France</td>
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<tr>
<td>Date of recruitment / contract term</td>
<td>15/01/2024 (36 months)</td>
</tr>
<tr>
<td>Contacts</td>
<td><a href="mailto:quentin.charlier@grenoble-inp.fr">quentin.charlier@grenoble-inp.fr</a></td>
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</table>

Grenoble INP - UGA is a leading public institution accredited with the French label “Initiative d’excellence”. It offers innovative engineering and management programs, with an increasing internationalization of its course offers. The courses are grounded in sound scientific knowledge and linked to digital, industrial, organizational, environmental and energy transitions. The Engineering and Management Institute of Grenoble Alpes brings together more than 1300 staff members (teacher-researchers, lecturers, administrative and technical staff) and 8300 students, located on 8 sites (Grenoble INP - Ense3, Grenoble INP - Ensimag, Grenoble INP - Esisar, Grenoble INP - Génie industriel GI, Grenoble INP - Pagora, Grenoble INP - Phelma, Polytech Grenoble, Grenoble IAE and the INP Prepa). Grenoble INP is also a highly-ranked institution of higher education and research, leading the way in the fields of engineering and management on an international scale. It is a member of a large number of international academic and research networks. It is part of the European University UNITE!.

As part of Grenoble Alpes University, Grenoble INP has associated guardianship of 39 national and international research laboratories and of technological platforms. The research conducted there benefits both its socio-economic partners and its students. Grenoble INP is at the heart of the following scientific fields: physics, energy, mechanics and materials; digital; micronanoelectronics, embedded systems; industry of the future, production systems, environment; management and business sciences.

Grenoble INP - UGA is an equal opportunity employer committed to sustainability. Grenoble INP-UGA celebrates diversity and equity and is committed to creating an inclusive environment for all employees. All qualified applications will be considered without discrimination of any kind.
Research

The thesis will be carried out on the premises of LGP2 (Process Engineering Laboratory for Biorefinery, Bio-based Materials and Functional Printing) in Grenoble (Gières Campus) as part of the MatBio team (Multiscale Biosourced Materials). LGP2 is a joint research unit (UMR 5518) involving the CNRS and Grenoble INP, with Quality, Safety and Environment certification. LGP2's research focuses on plant biomass conversion and recovery operations, such as biorefineries and the production of biobased materials (paper, cardboard, composites, films, non-wovens), as well as printing processes for surface functionalisation.

Job description:

Today, the need to find more sustainable solutions and recent advances in our understanding of cellulosic biomass are opening up new challenges in materials engineering. One possible direction is to develop more sustainable processes for producing materials from biomass that could replace plastics. In this context, DRYBIOMAT proposes to assess the potential of dry processes for the manufacture of high-performance 100% biobased materials that are energy- and cost-efficient, sustainable, economically viable and transferable to industrial scale. The dry processes identified are ultrasonic compression moulding and thermocompression. Their development could lead to 100% biobased and biodegradable materials with properties similar to those of conventional plastics, accelerating the emergence of sustainable materials engineering solutions. The direct use of co-products from agriculture and the wood industry could also significantly reduce environmental footprints while promoting circularity. The thesis project focuses on four main lines:

(I) the development of dry processes adapted to the specific characteristics of biomass
(II) assessing the capacity of bioresources to be shaped
(III) the study of adhesion mechanisms leading to the formation of material
(IV) characterising materials and analysing their performance in terms of their environmental footprint

Specific requirements or conditions

Proficiency in English and French is required. In addition, international experience will be a decisive asset.

Specifics of the position

Engineer or Master’s degree in Materials Science and Engineering or Mechanics of Materials. A taste for experimental work is essential. Desired knowledge of polymer and composite materials, lignocellulosic materials and manufacturing processes.

Position assigned to a restricted area: NO

How to apply

Applications must be sent to: quentin.charlier@grenoble-inp.fr
Application deadline: 17/10/2023