



Grenoble INP - UGA is a member of international engineering and management education and research networks. It is widely recognized in national and international rankings.



8 schools + 38 laboratories

8 350 students

1 300 teaching, research, administrative and technical staff

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.

## Associate Professor

Research profile field	Processes, surfaces and interfaces
Requested job profile	Associate professor
Ministerial reference for the position	62/28 MCF 0666
CNU Section	62 and 28
Job location	Grenoble (Saint Martin d'Hères campus – PAGORA – LGP2 laboratory)
Hiring date	01/09/2024 (DD/MM/YY)
keywords	Surface functionalization, Layer deposition processes, Surface and interface phenomena, Microfluidics, Complex fluid formulation, Additive manufacturing

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 8 350 students, located on 8 sites (Grenoble INP - Ense3, Grenoble INP - Ensimag, Grenoble INP - Eisar, 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 38 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.

# Teaching

**School:** Grenoble INP - Pagora

**School website:** <http://pagora.grenoble-inp.fr/>

**Contacts:** [Lionel.Chagas@grenoble-inp.fr](mailto:Lionel.Chagas@grenoble-inp.fr) [evelyne.mauret@grenoble-inp.fr](mailto:evelyne.mauret@grenoble-inp.fr)

## **School presentation:**

Grenoble INP-Pagora is the only public school in France to train engineers for the plant fiber, paper and cardboard, printed communication, packaging and biomaterials industries. Its ambition is to become an international benchmark in these fields. Pagora is at the heart of current societal concerns. The school provides training in the development of renewable, biosourced and recyclable solutions to replace many of the products we use every day, such as single-use plastics. It also provides training in new applications for printing and surface functionalization processes, notably printed electronics. Pagora, in complete synergy with its research laboratory, LGP2, has always known how to innovate and anticipate the expectations of its partners. Pagora offers a three-year training program (initial training and apprenticeship), with two options: (i) Fiber and Biomaterials Engineering - IFB and (ii) Printed Communication Engineering - ICI. Graduates are destined to take up responsible technical and management positions in these professions, including internationally. It also provides access to two Master's courses, one of which is entitled Sustainable printed and integrated electronics (e.PEPS).

## **Teaching Profile:**

The teaching given by the new MCF will be part of the Pagora training program, and may cover the following topics:

- Engineering sciences, such as physical chemistry, thermodynamics, fluid mechanics, applied numerical analysis, etc.
- Deposition process engineering,
- Functional materials.

These courses are given in the form of lectures, practical work and projects as part of the engineering training at Grenoble INP-Pagora. They will take place mainly in the 1st year (engineering sciences) and in the ICI option of the engineering training program. In addition, the new MCF will work with the existing teaching team on the teaching and development of the e.PEPS Master's program. The majority of 2nd year and Master's courses are taught in English.

The person recruited should have a particular affinity for practical teaching and the implementation of projects as part of the curriculum. Like all the school's other teachers, he or she will be supervising apprentices, internships and final-year projects, and will be in regular contact with industry. She or he must have a taste for active teaching methods, and must integrate the skills-based approach deployed at Pagora. He or she will participate in juries and other pedagogical meetings.

The associate professor will have to take account of environmental transition aspects in carrying out his or her assignments. He or she may be asked to participate in their deployment in teaching, with students and staff. Pagora is a pilot school for the UVED (virtual university for the environment and sustainable development).

# Research

**Host laboratory:** LGP2 (UMR 5518 Grenoble-INP, UGA et CNRS)

**Laboratory website:** <https://lgp2.grenoble-inp.fr>

**Contact:** [anne.blayo@grenoble-inp.fr](mailto:anne.blayo@grenoble-inp.fr)

## **Laboratory presentation:**

The Laboratory of Process engineering for Biorefinery, Bio-based Materials and Functional Printing (LGP2) is a Mixed Research Unit, UMR CNRS 5518, created in 1995 and whose supervisory bodies and partners are the UGA, Grenoble INP, CNRS and Agefpi (private partner). The unit's workforce (~ 80 people) comprises 22 permanent researchers, 19 support staff (9 FTE), and around 40 PhD and post-doc students. LGP2 comprises 3 research teams (BioChip/MatBio/FunPrint).

The position will be assigned to the FunPrint team (Functionalization of surfaces by printing processes).

At LGP2, the FunPrint team's research ranges from the formulation of complex fluids to printed materials and objects, with a wide spectrum of applications such as energy management, biomedical and transport, with an approach to the circular economy, lightweighting, miniaturization and resource conservation. The team's scope of action is therefore multidisciplinary. This implies a sound knowledge of the materials used, the parameterization and control of processes, and mastery of the final properties of the objects produced. In this context, the study of fluid/substrate interactions is essential for controlling the transfer of functional liquids, and involves the study of surfaces and interfaces (physical chemistry, topography, etc.).

At present, the team's main research concerns the development and optimization of printing processes for new applications, for example in the energy sector (fuel cells, photovoltaic cells, batteries...) and in printed electronics (conductive tracks for communicating objects, RFID, sensors...).

## **Research Profile:**

The research areas associated with this position include the following:

- Rheological properties of complex fluids,
- Physical understanding and modeling of surface and interface phenomena,
- Flow (modeling, prediction) and microfluidics
- Formulation of complex functional fluids.

Surface functionalization can be achieved by depositing layers of controlled thickness, including printing processes.

The aim is to achieve multi-scale, multi-constituent structuring for applications in 2D and 3D printed electronics, notably for energy (fuel cells, photovoltaics, bio-cells, etc.) and sensors.

The research will incorporate multi-criteria optimization of processes and products, with the aim of reducing resource consumption.

The research activity presented in the application must be proven, in particular by international publications.

## Specific requirements

Administrative activities related to the duties of a lecturer / Professor: he or she will be in charge of a teaching unit, a programme or a year.

## How to apply

Applicants must submit their applications on the Galaxie Platform of the French Ministry of Higher Education and Research from the 22nd of February 2024, 10 a.m. (Paris time zone) to the 29th of March 2024, 4 p.m. (Paris time zone), deadline.

Any document sent outside the Galaxie procedure will not be taken into account.

The interview will include simulation/situational exercises.

The details will be communicated when the invitation is sent out. In addition, part of the interview may be carried out in English.