



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 + 39 laboratories

8 300 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 field	Nuclear processes
Category / Requested profile	Associate Professor
Ministerial reference for the position	62 MCF 0733
CNU Section	62
Location	ENSE3 / SIMAP Laboratory
Date of recruitment	01/09/2025 (DD/MM/YYYY)
Position key words	Coupled transfers, Fluid Mechanics, Energy

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.

Teaching

School : Grenoble INP – ENSE 3

School website: <https://ense3.grenoble-inp.fr/>

Contacts: laurent.davoust@grenoble-inp.fr (Deputy director); philippe.marin@univ-grenoble-alpes.fr (Head of the nuclear engineering master program)

School presentation :

Grenoble-INP Ense3 is a generalist engineering school within the Grenoble INP institution whose mission is to train engineers over a three-year program. Through their knowledge, expertise, and skills, they will contribute to the energy and environmental transitions in industries, sectors, and uses related to water and energy.

Teaching Profile:

The context of this position is nuclear energy and the processes developed within nuclear installations. The recruited individual will either possess, through her/his initial training, or be able to develop over time, skills related to nuclear processes.

The recruited individual will primarily be involved in teaching within the Nuclear Energy Engineering (IEN) program. She/He may also contribute to courses in the Mechanical Energetics (ME) and Energy Systems and Markets (SEM) programs, as well as the international master's program in Fluid Mechanics and Energetics (FME). Participation in professional training or involvement in the apprenticeship program of the school is also encouraged.

The teaching responsibilities, which may sometimes be conducted in English, include:

- **Initially:** Fundamental courses, such as fluid mechanics, single-phase/multi-phase thermohydraulics, coupled phenomena (MHD, plasmas), heat radiation, phase change...

- **Later on:** Specialized courses, for example:

- i) Development of current and future reactor technologies (EPR, SMR, AMR, MMR, GEN IV, fusion).
- ii) Operation of nuclear reactors (supervision of lab work sessions on the SIREP simulator).
- iii) Nuclear fuel cycles (uranium, thorium, waste treatment, vitrification processes, melox process).
- iv) Dismantlement of nuclear installations (aerodynamic challenges, dust capture, water management, etc.).

A teaching effort could also involve contributing to the implementation of a new thermohydraulic practical session on the thermal platform at ENSE3 (cooling of a rod assembly to mimic cooling of a nuclear fuel bundle).

Participation in cross-disciplinary teaching activities at the school is also expected, including supervising student projects in the second and third years (engineering projects or research projects). The recruited individual is also encouraged to contribute to innovative teaching activities or continuing education. The teaching methods may incorporate the international and multicultural aspects of the students (25% of student population). Technological knowledge and interfacing abilities with the FABLAB are also valued.

Initially, the recruited individual may start with fundamental and cross-disciplinary courses. Over time, she/ he will progressively take on specialized nuclear courses and assume educational responsibilities (e.g., course unit responsibilities, supervision of internships in the second year of the IEN program).

The person recruited may also contribute to enhancing the school's reputation with industrial and international partners by leveraging existing networks or developing new ones, for example, through distance learning initiatives.

Research

Host laboratory: EPM (Electromagnetic Processing of Materials), SIMaP Laboratory

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

Contacts : didier.chaussende@grenoble-inp.fr (Head of SIMaP Laboratory)

Laboratory presentation :

The SIMaP laboratory (UMR 5266) conducts research in materials science and chemical engineering. With nearly 90 permanent staff specializing in chemistry, physics, solid or fluid mechanics, and processes engineering, the

laboratory focuses its research on the design, exploration, and optimization of processes for materials and energy developments.

Within the laboratory, the EPM group (Elaboration by Magnetic Processes) is recognized for its expertise in using external fields (magnetic, electric) to study and/or control complex processes.

Research Profile:

The recruited individual will strengthen activities related to nuclear processes development such as:

- i) Fuel cycle processes (glass-embedded wastes, MELOX, pyro-metallurgy, etc.),
- ii) New nuclear reactors (based on fission or fusion: SMR, MMR, GEN IV including thorium and sodium cycles, ITER, Stellarator),
- iii) Non-contact characterization of molten materials (corium, metals, electrolytes).

He/She will engage in either experimental or numerical activities, with a focus on applying external fields to single- or multi-phase electrically conductive or dielectric media. Multiphase media can include stratified systems with fluid/fluid or fluid/solid interfaces or two-phase fluids containing a dispersed phase (bubbles, droplets, particles). The external fields applied may be various (magnetic, electric, acoustic, vibrational, etc.) and are intended either to control or to experimentally characterize the flow.

This activity will be supported by a network of industrial collaborations as well as a long-standing partnership with the CEA (French Alternative Energies and Atomic Energy Commission).

Expected or To-be-developed Skills

- Expertise in experimental or numerical or analytical developments, with research focused on applying external fields in electrically conductive or dielectric single-phase or multiphase fluids.
- Strong interest in multiphysics processes and/or in the development of physical instrumentation.

Work Restrictions

This position is not subjected to restricted-area regulations.

(Note: The position is not governed by the dispositif de protection du potentiel scientifique et technique de la nation, which requires approval by the Security Defense Officer for the appointment of teaching and research staff.)

Specific requirements or conditions

Administrative Activities Related to this position of Associate Professor :

Candidates recruited as Associate professors are likely to take on collective responsibilities such as being in charge of a teaching unit, a teaching programme or an entire year of study.

In the context of research, excellence and increasing internationalization, the quality of candidates' research activities must be attested by recent scientific production (publications, communications, etc.) in the best journals or international conferences in their fields.

In addition to scientific excellence and consistency between both the applicant's and the host laboratory's research strategy, candidates should describe how their integration project meets responsible research objectives that are compatible with the socio-environmental issues applicable to their field of research, and how the principles of open science are taken in account.

How to apply

Applications must be submitted via the Odysée platform of the French Ministry of Higher Education and Research, between Tuesday March 4th 2025, 10am (Paris time) and Friday April 4th 2025, 4pm (Paris time), deadline.

Any document sent outside the Odysée application will not be taken into account.

When candidates are interviewed by the selection committee, they will be asked to take part in a pedagogical work experience, the details of which will be communicated when the invitation is sent out.

Please note that part of the audition may also be carried out in English.