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.

Professor

Research field	Digital Integrated Circuit Architecture: Design, Verification, Test and Reliability Methods
Category / Requested profile	Professor
Ministerial reference for the position	27/61 PR 0718
CNU Section	27-61
Location	Grenoble
Hiring date	01/09/2025 (DD/MM/YYYY)
Key words	

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 - Phelma

School website: https://phelma.grenoble-inp.fr/

Contacts : alice.caplier@phelma.grenoble-inp.fr

School presentation :

Grenoble INP-Phelma is an engineering school of the Grenoble Polytechnic Institute. It offers its students a wide choice of training courses at the cutting edge of scientific and technological progress: micro & nanotechnologies, instrumentation, energy, innovative materials, information technologies, biomedical engineering, process engineering and the environment. It welcomes more than 1,400 students in 12 engineering programs, including two apprenticeships, and a dozen master's programs. The teaching staff is made up of around one hundred tenured professors and over 300 part-time lecturers. The administrative and technical staff numbers around fifty. The school has two sites: the Minatec site in Grenoble and the university campus in Saint-Martin d'Hères. While reaffirming its three main pillars of physics, electronics and materials, Phelma is ensuring that the training of its engineering students and master's students evolves in line with changes in the business world, linked primarily to the ecological and digital transitions.

Teaching Profile:

Embedded digital electronics is a key scientific discipline in several of Phelma's engineering programs, such as Integrated Electronic Systems (SEI), Embedded Systems and Connected Objects (SEOC) and the Microelectronics and Telecommunications (MT) apprenticeship program.

At a time of ecological transition, it is imperative that the school trains engineers who are capable of playing an active role in this transition. As part of the proposed position, the school will be offering new teaching modules on the eco-design of electronic circuits, considering energy constraints as well as factors such as durability, recycling and repairability. This design stage should also be combined with lessons on advanced circuit testing and verification. This position complements the European GreenChips project on green microelectronics and the sustainable electronics chair currently being set up at the school.

Research

Host laboratory: TIMA

Laboratory website: https://tima.univ-grenoble-alpes.fr/

Contacts : giorgio.di-natale@univ-grenoble-alpes.fr

Laboratory presentation:

TIMA (Unité Mixte de Recherche N°5159) is a public research laboratory under the supervision of Grenoble INP (Institut Polytechnique de Grenoble), CNRS (Centre National de la Recherche Scientifique), and UGA (Université Grenoble Alpes). The TIMA Laboratory's research topics cover specification, design, verification, test, CAD tools and design support methods for embedded systems, from basic analog and digital components to on-chip multiprocessor systems and their basic operating systems. TIMA is a cosmopolitan team, with researchers and trainees from all over the world.

Research Profile:

The sharp reduction in the size of CMOS microelectronic devices and the emergence of new technologies are leading to a sharp increase in design difficulties. In the case of digital circuits, a large number of phenomena need to be considered to ensure that a circuit can be designed within a reasonable timeframe, while achieving sufficient quality, guaranteed for a minimum duration of operation. These circuits enable new applications in fields as varied as medical care assistance, transport safety enhancement, environmental monitoring, energy generation and management, and

secure communications. Depending on the field of application, strong non-functional constraints may need to be satisfied (power consumption, safety, security, real-time requirements) in addition to compliance with functional specifications.

To meet these challenges, the study of new design and verification techniques with a view to reliability, operating safety and security, and low power consumption, are key areas of research for nanometric technologies.

The CDSI (Circuits, Devices and Systems Integration) and AMfoRS (Architectures and Methods for Resilient Systems) teams are working on the development of these circuits and systems, with optimized algorithms that can be implemented directly on the hardware resources integrated to perform these tasks. The development of this work requires skills in the design and verification of microelectronic circuits and systems, and in test, robustness and reliability, including aspects of operating safety and security.

The successful candidate will have research experience in several of the following areas: system-on-chip architectures, formal methods, circuit and system design exploiting new energy-efficient techniques (e.g., asynchronous circuits and ultra-low-power semiconductor technologies), dependability (fault detection/tolerance, on-line and off-line testing, self-adaptive circuits, aging).

Specific requirements or conditions

Administrative activities related to the functions of Professor: responsibilities for teaching units, academic programs, or specific academic years.

In the context of research, excellence, and increasing internationalization, the quality of candidates' research activities must be demonstrated through recent publications in the leading international journals or conferences in their field.

Administrative activities

In terms of responsibility, the person recruited will be responsible for overseeing the finalization and deployment of the school's modularization project. Indeed, with the dual aim of allowing a degree of flexibility in the training paths of each student, and of being able to offer course modules within the framework of lifelong learning, the school has embarked on an overhaul of the organization of its teaching models.

Special features of the position

Teaching can take place at any of the school's 2 sites: Grenoble and St Martin-d'Hères.

How to apply

Applications must be submitted via the Odyssée 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 Odyssée 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.