



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

8300 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.

Researcher in Life Cycle Assessment

Job reference number	2024-RESEARCHLIFCYCL-GSCOP
Research field	Ecodesign of sustainable circular complex technical systems, Life Cycle Assessment, Sustainable Circular Economy
Host laboratory	G-SCOP (UMR 5272 Grenoble-INP, UGA et CNRS), www.g-scop.grenoble-inp.fr 46, Av. Felix Viallet, 38000 Grenoble
Researcher profile	Recognized researcher (R2)
Location	Grenoble, France
Date of recruitment / contract term	18/03/2024, (12 months)
Contacts	maud.rio@g-scop.eu

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 internationalisation of its course offers. The courses are grounded in sound scientific knowledge and linked to digital, industrial, organisational, 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 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 position is to be filled within the GSCOP Laboratory, in the CoSYS team. For a number of years now, the team has been conducting research aimed at transforming society towards circular sustainable practices by corporate designers (industrial engineering in the broadest sense). This mission takes place in a context of collaboration on several research projects with the power electronics team of the Grenoble Electrical Engineering Laboratory (G2ELab). Following the ANR VIVAE project, both teams are involved in setting up new national and international collaborations on the subject of sustainable circularity in electronic system design. The work to be carried out is directly linked to the European EECONE project (<https://www.eecone.com/eecone/home/>), which aims to contribute to the development of an integrated ecodesign method that will enable the emergence of power electronics that are sustainable, circular and compatible with planetary limits considerations.

Offer description:

You will be involved in the research activities of the GSCOP CoSYS team, linked to the Power Electronics research activities carried out by the G2ELab, within the European EECONE project. Your main tasks will be (1) to apply relevant and appropriate life cycle assessment methods (advanced level required in LCA) and to adjust LCA models to the subjects of analysis, in order to obtain design guidelines, specifying a collaborative ecodesign tool, in connection with technological developments including the two use cases associated with the PhD student research work and industrial partners. This LCA of modular and circular Power Electronics components/subassemblies/modules, will be conducted within upscaling scenarios (of various types, see the five upscaling archetypes of [Riondet, 2022]), in collaboration with an EP research engineer and a PhD student developing circular EP systems. This work will be published to highlight the methodological and practical contributions made. Publications will be disseminated to the 49 project partners, including researchers in academia and industries (cf. <https://www.eecone.com/eecone/home/>). (2) You will be involved in educational and dissemination activities related to the projects (WP5), including participating to conducting interviews and surveys with the European community.

Scientific activities:

- Carry out advanced LCA adapted to change of scale (upscaling and planetary down limiting) on complex circular electronic systems, involved in the ecological transition and in particular the energy transition.
- Understand the functional analysis of sustainable circular electrotechnical systems in collaboration with G2ELab's Power Electronic experts.
- Apply selected advanced LCA methods to tangible case studies, using accessible data and developing robust, justified hypotheses for project stakeholders.
- Formalize the analysis of LCA results obtained for decision support (circular eco-design of Power Electronic systems), in particular by identifying key knowledge for designers to help design sustainable systems.
- Interacting with other laboratory researchers/project teams, develop online pedagogical materials for ecodesign in a circular economy, and for professionals, based on existing materials of the CoSYS team and with access to those of other partners.
- Design, carry out and analyze surveys describing the European sustainable electronics ecosystem via EECONE partners.
- Disseminate and promote the research work carried out during this mission, and ensure knowledge transfer.
- Write and present scientific articles, popularization documents and pedagogical content.

Specific requirements or conditions

Mastery of LCA fundamentals methods, eco-design and sustainability issues is a must for this position, along with the ability to conduct LCA on specific software such as Open LCA, EIME and Simapro. Expertise in advanced LCA such as upscaling is a definite asset. Good practice in writing scientific articles and a certain mastery of bibliographical research are required, as well as good oral expression skills to present results at scientific meetings. The ability to read, speak and write English is necessary, as the European project conducts most of its meetings in English, as well as the related reports. The ability to understand the technological processes and resources mobilized in electronics engineering for future energy design will be useful, as will the ability to work in a team, including remotely.

Specifics of the position

A plus if you have experience in building educational content (web content, e-learning) and if you are motivated by the transmission of key knowledge on these issues of energy and ecological transition at international level. If you are dynamic, curious about technology and sustainability, and interested in scientific projects of excellence at European level, this project is for you!

Position assigned to a restricted area: No

How to apply

Applications (resume and cover letter) to be sent to maud.rio@g-scop.eu

Application deadline : 29/02/2024