

Assistant Professor in Electrical Energy Conversion

About CentraleSupélec

CentraleSupélec is a leading French ‘**Grande École**’ and a public research university. It operates under the joint authority of the Ministry of Higher Education and Research and the Ministry of Industry. Its core missions include educating high-level global and specialised engineers, Bachelor’s and Master of Sciences, conducting cutting-edge research in engineering and systems sciences, and providing continuing professional education programs. As part of its ongoing development, CentraleSupélec is seeking an Assistant Professor to join the Electrical Energy Systems Department and conduct research in the GeePs laboratory.

The Department of Electrical Energy Systems has a team of 18 full-time Assistant/Associate Professors and Full Professors who provide teaching in electrical energy throughout the three years of CentraleSupélec’s engineering programs (both the general curriculum and certain specialized tracks), as well as in Master’s programs and newer courses such as Bachelor of Science and Master of Science degrees. The fields covered include Electro-technics, Power Electronics, and Electrical Systems (electrical networks, electronic power converters, electrical actuators and machines). The department’s aim is to provide students with the basics for understanding the role and use of the electrical energy vector at the heart of the decarbonization strategies (for energy and mobility applications), and to enable students to specialize in the analysis, modeling, design, optimization, or management of electrical energy systems. The department manages two Master’s programs, is active in executive education with several short training programs (3-5 days), and supervises an executive Master’s program on energy markets.

The GeePs laboratory is a collaborative unit involving CNRS, CentraleSupélec, Paris-Saclay University and Sorbonne University, subject to measures for the protection of scientific and technical potential of the nation. It was established in 2015 and is located on the CentraleSupélec campus of Paris-Saclay University in Gif-sur-Yvette and the Pierre and Marie Curie campus of Sorbonne University in Paris, boasting a comprehensive team of 250 individuals, comprising 130 permanent staff members (consisting of researchers, teacher-researchers, engineers, and technicians) and approximately 90 Ph.D. students. The research activities focus on the study of electrical and electronic components and systems. The Lab is organized into four research departments: Energy Systems (Power Electronic Systems and Actuators; Power Networks), Electronics (Components, Sensors, and Systems), Physics for Materials and Components (Electrical Contacts, Insulating Materials and Plasma; Materials and Components for Photovoltaics, Electronics and Photonics), and Electromagnetism (Near Fields, Multiphysics Coupling; Waves and Propagation).

To reinforce its teaching and research teams on these topics, CentraleSupélec is recruiting an assistant professor in electrical engineering specialized in power electronics and actuators.

Teaching responsibilities

The teaching sessions will be held at CentraleSupélec in the Department of Electrical Energy Systems. The successful candidate will be involved in teaching in the 3-year engineering program (both the global and specialized engineering programs), in two of University Paris-Saclay's Master's programs, and in the Bachelor's and Master of Sciences programs proposed by CentraleSupélec in partnership with overseas universities.

Lecturing in executive education programs may also be required (mainly in French). More precisely, the recruited candidate will participate in courses (experimental activities, tutorials, lectures) in electrical energy in the first and second year of the engineering program. The candidate will participate in thematic sequences (with experimental or project activities) dedicated to modeling, signal processing and statistics, control of energy systems, or energy systems optimization.

The candidate will have the opportunity to propose and supervise projects for first- and second-year students. The candidate will also be involved in the third-year teaching program (Power Energy Grids or Energy Efficiency majors), whether this involves tutorials, experimental sessions, or projects that may be carried out as part of an industrial partnership. Additionally, in close collaboration with professors of the department, the candidate could participate in the development of new teaching programs such as Bachelor's or Master of Sciences in relation to electrical energy systems.

Finally, the candidate will collaborate with various teaching teams to improve the overall curriculum and the specialized program in electrical energy systems, and will address challenges related to climate, energy, ecological transitions, and issues of sovereignty under the guidance of the Provost and the various Program Managers.

The candidate must also be able to teach in English.

Research responsibilities

The recruited researcher will conduct research activities at the Paris Laboratory of Electrical and Electronic Engineering (GeePs <https://www.geeps.centralesupelec.fr/>), within the SEPA team ("Power Electronics Systems and Actuators") of the "Energy Systems" department.

As part of the energy transition and with a sustainability perspective in the field of Electrical Engineering, the researcher's work will focus specifically on the electrification of applications, and the evolution of electric power networks (integration of renewable energy sources and associated storage systems, new applications).

The research will take a systemic approach to designing power conversion chains, incorporating the specific constraints of various fields, including electromobility and electrical networks. The objective is to optimize several key aspects, such as energy efficiency, increasing power density (both mass and volume), improving reliability with enhanced resilience to failures, and ensuring service continuity. Special attention may also be given to the environmental impact of power conversion systems.

Current trends favor increasing operating frequencies and voltages with wide-bandgap semiconductors (GaN, SiC), modularity in conversion systems, and integrating converters as close as possible to loads, and the operation of systems in highly constrained environments, particularly in terms of temperature (including cryogenic conditions). These developments raise several scientific challenges, in which the GeePs wishes to strengthen its expertise, such as :

- The search for converter topologies suited to high frequencies.
- The application of modularity principles to systems integrating power electronics, offering numerous degrees of freedom in control, easing constraints on the design of elementary building blocks, and improving overall system robustness.
- Characterization of semiconductor components (including under high- and low-temperature constraints) and study of their failure mechanisms.
- The study and management of conducted and radiated electromagnetic disturbances, particularly those generated by the switching of wide-bandgap semiconductor components.
- Enhanced reliability (e.g., using digital twins), resilience to fault, and maintainability.
- Conducting Life-Cycle-Analysis of components of power conversion chains.

All these technological advances—applicable to both embedded energy conversion and electrical networks (microgrids and large grids)—enhance performance and integration of solutions.

The research project proposed by the candidate is expected to address one or several of the items above.

To carry out this work, the recruited researcher will leverage the laboratory's various platforms and computational/simulation tools (HIL and PHIL) to develop experimental devices incorporating various innovations. This research will be conducted in collaboration with academic and/or industrial partners. The researcher will also be expected to engage in establishing new collaborations and, in the medium-long term, play a key role in submitting national and international research proposals.

Qualifications and Experience

- Candidate holding a PhD in the field of electrical engineering and/or electrical energy, and having at least one internationally recognized publication in a scientific journal (the publication requirement will depend on their curriculum and years of experience).
- Demonstrate a passion for teaching, research, teamwork, and industrial partnership.
- Possess a willingness to supervise research projects in synergy with the scientific roadmap of the laboratory.
- Have an interest in the practical aspects (for both teaching and research).
- Have an interest in creating new teaching programs.

Application process

Applications must be submitted by email to the following email address :

drh.pole-enseignant@centralesupelec.fr

The deadline for submission is May, 15th 2026 at 11 :59 PM (Paris time). Please include the reference in the email subject line. The electronic application must include the following PDF files :

- A cover letter
- A detailed CV containing teaching experience, research, mobility, publications, etc.
- A 5 to 10-page research and teaching project that meets the requirements of CentraleSupélec
- A copy of the identity card or passport
- A copy of the doctoral degree
- Thesis defense report, if it exists, or any equivalent document
- Letters of recommendation (optional)
- Any other documents that prove your previous experience

Interview process

Shortlisted candidates will be invited to an interview which consists of three stages, allowing us to assess your suitability for the position :

1. Candidates will present their academic background and their teaching and research project.
2. Each candidate will demonstrate their teaching skills by presenting a lesson in English, addressing a common problem specified in the audition invitation.
3. Candidates will then respond to questions from the committee members.

The audition invitations will clearly state the duration for each stage.

Scientific contacts

Emmanuel Odic, director of the GEEPS laboratory : emmanuel.odic@centralesupelec.fr

Marc Petit, director of the Electrical Energy Systems teaching department : marc.petit@centralesupelec.fr

Guillaume Krebs, director the Energy department of the GeePs Lab : guillaume.krebs@centralesupelec.fr