



Fixed-term contract: Project Leader in Solid State Pulsed Power



General presentation

The Energy and Environment Solutions initiative (E2S UPPA) invites candidates to apply for one project leader position in partnership with the CEA. These are part of a substantial, multi-year growth plan (<https://e2s-uppa.eu>). Problem-oriented, inter-disciplinary and transverse research in Energy and Environment is pursued, and emphasis on either industry relevance or high visibility in leading academic journals is fostered.

UPPA is a leading research and teaching university, one of the top 20 in France, located in the beautiful, culturally rich and highly diverse area of the Atlantic Pyrenees. E2S UPPA is the completion of established collaborations between the main national research centers, i.e. the INRAE, INRIA, CNRS, CEA and BRGM. These host several laboratories engaged in research in the core areas of Energy and Environment.

In the framework of the E2S UPPA project, CEA and UPPA have decided to join forces to set up a research program around new solid-state topologies for pulsed power by recruiting a Project Leader.

The main activity for the Project Leader will be to build, develop and steer a research project in line with UPPA and CEA requirements. The start-up package to support this project consists of two PhD candidates, two postdoctoral fellows and associated running costs. The project will be co-funded by CEA and E2S UPPA for 5 years with 400k€ provided by each institution.

Host Lab

This Project Leader will be hosted by the SIAME laboratory, a research unit located in Pau, France. SIAME has got an extensive and highly competitive research program that encompasses fundamental research, particularly in electrical engineering. The Project Leader will conduct research in the High Voltage Processes team headed by Professor L. Pecastaing. This team works primarily in the field of pulsed power physics and technology. More information on the research group is available on their [website](#).



Partner

The French Alternative Energies and Atomic Energy Commission (CEA) is a key player in research, development and innovation in four main areas:

- * defence and security,
- * low carbon energies (nuclear and renewable energies),
- * technological research for industry,
- * fundamental research in the physical sciences and life sciences.

Drawing on its widely acknowledged expertise, CEA actively participates in collaborative projects with a large number of academic and industrial partners. More information is available from its [website](#)

Within the context of this research program, CEA develops, operates and maintains High Pulsed Power (HPP) systems for different applications ranging from a lab-scale simulation of both radiative and non-radiative extreme environments to large accelerator and laser facilities. In order to support this activity, CEA has built over time strong expertise in electrical engineering that relies on both modelling and experimental approaches. Pulsed power groups from CEA CESTA and Gramat have been working together for three years with SIAME within a joint CEA/UPPA Laboratory called LRC SAGE (Laboratoire de Recherche Conventonné Science Appliquée au Génie Electrique). This research program will be integrated within the LRC SAGE to consolidate its action and investigate solid state switching for pulsed power applications.

Details of the junior chair position

The initial research project would aim at exploring innovative designs in pulsed power technology with solid-state components mainly derived from power electronics in order to confirm that solid-state technology could create a technological breakthrough and offer new perspectives for the development of future Pulsed Power Systems (i.e. more compact, more integrated, reduced ancillaries).

In addition to the research project, the Project leader is expected to ensure its representation and promotion in different scientific, industrial and public events. He/She is also expected to supervise two PhD candidates and two postdoctoral fellows and communicate its research results at conferences and in journal publications. Importance will also be given to personal skills such as, for example, the ability to work as part of a team and a positive attitude towards mobility. As the Project Leader will have to manage a team, a personality who has achieved scientific maturity, able to freely share his/her new insights and willing to learn new techniques and methods would be a perfect match.

Requirements

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- * The applicant must be proficient in spoken and written English and have good communication skills
 - * To be eligible for this UPPA employment, the candidate must hold a PhD degree, a Master degree or an engineering degree in the domain of electrical engineering (e.g., high-voltage, pulsed power or electromagnetism).
 - * Proven experience in experimental research in solid-state arrangements and switching would be an asset.
 - * Experience with electric circuit solvers and/or electromagnetic software, would be an asset too.
 - * Ability to manage a team.
 - * Ability to interact effectively in a research environment would be evaluated as well.
 - * Ability to report to the members involved in the project and the authorities of both institutions.

Application

The application should include:

- * A cover letter (describing yourself, your research interests and why you are a suitable candidate for this position)
- * A detailed CV
- * Three to five references (name and contact)
- * Two representative publications

Starting date: December 2020 or as otherwise agreed.

The Project Leader contract and the associated research program will be funded for 5 years, starting from December 2020 -or as otherwise agreed- with a monthly salary (before taxes) in accordance with that of a research engineer (French national grid). The start-up package to support this project consists of two PhD candidates, two postdoctoral fellows and associated running costs.

Contact: For further information about the position in Pulsed Power, please contact Professor Laurent Pecastaing by email at laurent.pecastaing@univ-pau.fr

📧 **Submit your application to Laurent Pecastaing by email at laurent.pecastaing@univ-pau.fr before November 25th, 2020**