E2S UPPA 3rd Call for Applications for PhD Grants

From November 18th, 2019 to January 31st, 2020

Context:
The Energy and Environment Solutions initiative (E2S UPPA) is a substantial, multi-year growth plan (https://e2s-uppa.eu). Problem-oriented, inter-disciplinary and transverse research in Energy and Environment is pursued while putting the emphasis on either industry relevance or high visibility in leading academic journals. Interests span over all areas of Energy and Environment, including but not limited to optimization of geo-resources exploration and exploitation, optimization of energy storage, materials for renewable energy, composites for structural lightening, analytical and microbial environmental analysis for diagnostic and remediation, as well as evaluation of organisms adaptation to environmental stresses in evolving or controlled ecosystems, and social issues about energy and environment.

Aim:
The E2S UPPA consortium (http://e2s-uppa.eu) gathering UPPA-INRA-Inria* invites candidates to apply for 10 PhD grants.

We seek outstanding candidates with a clear passion for research and who are excited by the opportunity to provide future solutions for energy and environment. Applications are invited from highly motivated candidates able to undertake a PhD project in all areas of Energy and Environment, connected to the research priorities of the laboratories hosted by the consortium:

- The Institute of Analytical Sciences and Physical Chemistry for Environment and Materials (IPREM, http://iprem.univ-pau.fr) has developed over the last 10 years sound experience in analytical and physicochemical activities for environment and materials science.
- The research federation Aquatic Environments and Resources (MIRA, http://milieux-aquatiques.univ-pau.fr) drives the activities of biologists, chemists, mathematicians and physicists on natural and controlled aquatic environments and their biological resources.

The indicative list of innovative topics to be tackled by applicants is appended on the last page of this call.
**Procedure:**

Fellowships are opened to highly qualified graduates from any field of Energy and Environment, or from a closely related discipline. We wish to attract candidates who are noticeable by their scientific excellence and to whom we will offer scientific challenges that meet their expectations.

Number of Funding for PhD: Ten doctoral grants are offered over a 3 years period [monthly gross salary before taxes = 1870 €, which includes extra gratification for teaching duties - 32 hours per year].

Employer: Université de Pau et des Pays de l'Adour (UPPA) – Start: September, 2020 - Duration: 36 months

Eligibility:
- Citizens of all nationalities are eligible to apply.
- Entrance requirements: candidates must hold a Master’s degree (or equivalent degree), with outstanding records.
- English language requirements: applicants whose first language is not French or English are required to provide proofs of proficiency of the required language skills.
- Required competencies: Applicants are expected to show outstanding commitment connected to the research priorities of the laboratories hosted by the consortium.

Three steps selection:
- 1st step: Candidates will be selected on the basis of the quality of their curriculum in relation with the disciplinary fields of E2S UPPA.
- 2nd step: Selected candidates will be directed to the appropriate laboratories corresponding to their competencies. They will participate in the development of a doctoral research proposal with the potential supervisor(s) and a three-year work plan schedule. The purpose of this step is to prepare a thesis topic matching the competencies of the candidate, the expectations of the thesis supervisor and the challenges of E2S UPPA. Applicants must be supported by one or several local host laboratory(ies).
- 3rd step: Interview - the candidate will be invited to defend her/his project in front of the selection board.

Criteria of selection of the candidate:
- The candidate’s motivation, scientific maturity and curiosity
- Candidate’s marks and rankings at the Master’s level of their academic cursus
- The adequacy between the research project and his/her skills
- Communication skills in written and spoken English
- Ability to work independently and to take responsibility for the progress and the quality of the project

**Tentative schedule:**

Candidates must send their application written in English and including the documents listed below before January 31st, 2020 (midnight, Paris time), via the submission website only!

https://e2s-uppa-application.univ-pau.fr/

**CAUTION!** Applications received through any other mean will not be reviewed!
Required application documents (single pdf file):

- Cover letter - 1-3 pages where you introduce yourself and present your qualifications and achievements, and emphasis on future goals and research focus.
- Are there any specific projects and research issues you are primarily interested in (see list at the end of this call)? To be indicated in the motivation letter
- Curriculum vitae
- Copies of certificates of any academic degrees and marks reports during their master studies; for candidates with a Master’s degree in progress during the 2019-2020 academic year, please join marks and rankings corresponding to the first semester of the M2.
- Copies of certificates of French and/or English language proficiency (for non French or English speaking applicants)
- Two letters of recommendation.

CONTACT : For general questions about the application assistance, please contact: anna.chrostowska@univ-pau.fr or helene.barucq@inria.fr

Innovative concept and topics to be considered (indicative list):

• Geo-resources exploration characterization and production, innovative industrial process for subsurface investigation and management;
• Sustainable energies and processes development, energy storage and management for the energy transition;
• Innovative industrial processes and methods for management of energy production, transport and use, as well as risk management;
• Smart and green constructions and cities, novel societal organization and approaches to reduce current negative environmental impacts;
• Aquatic environment: biology and dynamic of populations of living organisms, ecological and physical response to environmental disturbances including climate changes;
• Data and big data management and use, smart web and green computing applied to energy transition, risk evaluation and management, industrial processes improvement;
• Mathematical modeling and advanced simulation of problems related to energy and environment issues;
• Impact and pollution reduction, waste and pollutant management, environmental impact analysis and remediation, biological response to environmental and chemical stresses;
• Energy transition and societal acceptance, energy laws and regulations, societal impact and associated societal development, new technologies for societal energy imprint reduction;
• Economic transitions and economic policy issues due to the energy problems and environmental changes.
E2S will tackle this based on the quality of the available task force, among them:

- Numerical, computational and data/software management and development skills;
- Analysis and modeling of natural population of aquatic organisms, population biology, metabolism understanding and nutritional strategies in aquaculture;
- Statistical analysis and probabilistic methods applied to data management and analysis, stochastic and deterministic partial equation analysis, differential geometry and numerical simulation optimization;
- Quantification of natural geological processes and surface and subsurface geological characterization, monitoring and inspection, Laboratory analysis of natural geologic objects;
- Physical and chemical characterization and modeling of natural and artificial materials and material damage, complex fluids mix, high power systems, coupled porous and fluid environments;
- Chemical synthesis and characterization of novel materials, polymers and composite thereof; analysis of chemical and biological processes related to pollution;
- Physical and chemical analytical platforms for quantitative chemical, elementary and isotopic characterization of natural, artificial and biological medias;
- Energy law / environmental law, especially in the perspective of comparative law, international law and European law;
- Analysis of trade and economic transitions, international economy, development, regulations and public policies;
- Spatial reconfigurations and global changes related to energy and environmental transitions.

About UPPA

UPPA is a leading research and teaching university, among the top 20 universities in France, located in the beautiful, culturally rich and highly diverse area of the Atlantic Pyrenees. E2S UPPA is the result of established collaborations with the main national research centers, i.e. the French National Institute for Agricultural Research (INRA), the French National Institute for computer science and applied mathematics (INRIA), the National Center for Scientific Research (CNRS), the French Alternative Energies and Atomic Energy Commission (CEA), the French Geological Survey (BRGM). These hosts several laboratories committed in research within the core areas of Energy and Environment.

Private research is a key asset of southern Aquitaine with Industrial R&D centers settled on its territory, which forms one of the major centers of R&D in France. In this way, E2S UPPA offers a research environment that benefits from a successful relation with private and public sector organizations that have leading positions, more particularly in the Energy and Environment areas. To address societal and/or technical challenges and contribute to industrial leadership, private research is thus a significant strength of the south of the region Nouvelle Aquitaine. Sound collaborations between UPPA and major companies are established on the territory with for instance Total, TIGF, Arkema, SAFRAN Helicopter Engines, Toray and Euralis just to cite a few.

UPPA is committed to building a diverse educational environment in agreement with the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers.

INRIA French National Institute for computer science and applied mathematics [https://www.inria.fr/en/](https://www.inria.fr/en/)