

Junior Chair Position in Biochemistry/Enzymology

Institute of Analytical Sciences and Physico-Chemistry for Environment and Materials (IPREM)

<https://iprem.univ-pau.fr/fr/index.html>

Université de Pau et des Pays de l'Adour (UPPA), Pau, France

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Research Group:

Recently, UPPA was granted the label Initiatives Science Innovation, Territoires, Economie (I-SITE) in the frame of the second Programme d'Investissements d'Avenir (PIA 2) with its project Energy Environment Solutions (E2S). To become an attractive international reference in research in these two areas, E2S UPPA has implemented different research tools, including scientific research chairs: 'Chaires d'Excellence Partenariales'. The proposed position is in the framework of one of these partner-based chairs: MANTA - MARIne MATerIALs.

In the MANTA research chair, led by Dr. Susana de Matos Fernandes, we use marine organisms and the marine environment as a source of inspiration for the development of novel functional (bio)materials and processes combining chemistry, biology, materials science and biotechnology. Our research is funded by large grants from Campus France (Make Our Planet Great Again: MOPGA), FORMAS and public institutions and private partners namely E2S UPPA, Communauté d'Agglomération du Pays Basque (CAPB), Région Nouvelle Aquitaine (NA), Comité Interdépartemental de Pêche Maritimes et des Elevages Marins (CIDPMEM 64 40) through a DLAL project, Laboratoires de Biarritz and Lees.

Host Lab: MANTA is hosted by IPREM that is a joint Research Unit CNRS/UPPA (UMR 5254) in Pau and Anglet, France. IPREM has an extensive and highly competitive research program that encompasses fundamental research in physical chemistry, analytical chemistry and microbiology, as related to the molecular structure of the living world, environmental management and the functional properties of different classes of materials.

More information on the research group and PI's profile is available in the website:

<https://iprem.univ-pau.fr/fr/collaborations/chaieres/manta/presentation.html>

https://iprem.univ-pau.fr/fr/_plugins/mypage/mypage/content/sfernande004.html

Research Project:

This interdisciplinary and intersectorial research chair aims to mimic remarkable phenomena and hierarchical structures observed in the aquatic environment to design functional and environmentally sustainable (bio)materials based on marine molecules and assess their impact on human health and marine ecosystems. To do so, the project involves 4 key areas: (1) marine by-product and

bioresources valorization; (2) marine bio-inspiration for ecofriendly chemistry and development of materials and processes for marine environment; (3) impact of the materials on the marine environment and on marine organisms; and (4) impact of biomaterials on the human health.

Currently, we are a multidisciplinary research group of about 7 people, with diverse technical backgrounds: postdocs, PhD candidates and master students. To strengthen the team, we are now looking to recruit a Junior Chair (equivalent to Assistant Professor, tenure-track position) with a strong background in biochemistry and enzymology to develop a transversal line of research to work on 3 of the key research areas under development.

The start-up package to support this junior chair consists of two PhD candidates (or one PhD candidate and one postdoctoral fellow) and associated running costs. The chair will be co-funded by different partners in the frame of E2S UPPA for 5 years.

Duties:

We want to strengthen MANTA research group's expertise in biochemistry and enzymology applied to the extraction and functionalization of biomolecules and the development of biomimetic materials. We are looking for a creative and ambitious junior researcher with a strong motivation to address current challenges in the interdisciplinary research field involving the use and design of enzymatic tools for polymer functionalization. You will take a leading role in the research project in which enzymes are promising tools. You will be expected to run your own biocatalysis, enzymology and biochemistry studies under close communication with our collaborators and partners. In addition to this, you will provide expert advice regarding biochemistry and enzymology to group members with backgrounds in other disciplines. Your main responsibilities will be carrying out and communicating top-level scientific research in biochemical methods to address the theme of biomolecules extraction, purification, modification and degradation. In particular, the development of novel enzymatic methods to improve the efficiency and the selectivity of extraction and modification of structurally complex marine molecules is expected. These approaches will allow access to bioactive compounds and provide blocks for hemisynthesis of novel valuable products. This will include the characterization of the ensuing products using different analytical methods, optical and magnetic spectroscopies, mass spectrometry, diffraction methods, imaging and biochemical characterization.

This research project requires a highly creative individual with strong analytical skills as well as practical skills regarding enzymatic tools for polymer functionalization. You are also expected to be a good lecturer, as the position also includes teaching duties (64h/year). Moreover, the team is made up of scientists with very different backgrounds and the candidate will have to be able to communicate with all the team members. You should be able to provide support in various disciplines in on-going research projects and collaborations and to apply for new research projects on the topics of marine bioresources valorization and marine bio-inspired materials.

In addition to undertaking research in this role, you are also expected to supervise two PhD candidates (or one PhD candidate and one postdoctoral fellow) and communicate your research results at conferences and in journal publications.

Requirements:

- To be eligible for this UPPA employment, the candidate must hold a PhD degree in Biochemistry, Enzymology, Microbial and Enzymatic Engineering, Biotechnology or similar disciplines, and a large part of the applicant PhD project should be focused on the use of enzymatic tools for polymer functionalization.
- Extensive experience in experimental research in biocatalysis, enzymology and biochemistry. A strong competence in the natural polymer area is a plus.
- Extensive experience in HPLC; GC-MS; NMR; HPAEC-PAD; HPSEC; Crystallogenes, Crystallography, protein-ligand interaction analyses, uniform and specific isotopic labelling.
- The PhD degree must have been obtained no more than five years prior to the application deadline. The 5-year period can be extended on circumstances such as sick leave, parental leave, duties in trade unions, etc. In the ranking of qualified applicants, particular importance will be given to scientific excellence.
- The ranking will also accord weight to the candidates assessed competence in ability to interact effectively in a multi-disciplinary research environment.
- The applicant must be proficient in spoken and written English and have good communication skills.

You are expected to be interested in the development of bio-inspired biomaterials with associated low impact on marine environment and human health benefits, and to contribute to the overall approach around Bio-inspired Materials at UPPA namely the new master BIM (Bio-Inspired Materials) and the future research building calls 'Pôle d'excellence sur le biomimétisme marin' in Biarritz.

You are expected to contribute to the management of the overall MANTA project, to its achievement and to ensure its representation and promotion in different scientific, industrial and public events. Importance will also be given to personal skills. In this case, we place particular weight on the ability to work as part of a team and a positive attitude towards mobility. The applicant will be responsible for a part of a larger project, and the ability to work independently and to take responsibility will be required as well as project management. You should be self-motivated, have reached scientific maturity, naturally identify ambitious goals for your research and possess a strong internal motivation to achieve these. You are not afraid to learn new techniques and methods and freely share your own new insights.

Application:

The application should include:

- A cover letter (describing yourself, your research interests and why you are a suitable person for this position)
- CV
- Three to five references (name and contact)
- A statement of the director of IPREM laboratory (host laboratory)
- A 5 pages research project proposal taking in account the research field described before and teaching interests (1 page).

- Two representative publications.

The application must be written in English.

Please submit your application via <https://aap-e2s.univ-pau.fr> by **August 21th, 2020, 5 pm**

CAUTION! Applications received through any other mean will not be reviewed!

The chair will be funded for 5 years, starting from **December 2020/ January 2021**- at the earliest- with a monthly salary (before taxes) in accordance with that of an assistant professor (national grid). The start-up package to support this junior chair consists in two PhD candidates (or one PhD candidate and one postdoctoral fellow) and associated running costs. Teaching would be limited to 64 hrs academic duty.

For further information about the position in Biochemistry and MANTA group, please contact:

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For further information about general questions or application assistance, please contact:

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