POST DOC POSITION IN PLANT SCIENCE AND SYNCHROTRON TECHNIQUES

- Recruitment grade: young researcher (i.e. with PhD)
- Location: Pau, France
- Duration: 12 months, starting in May 2023
- Deadline: 31 March 2023
- Gross Salary Range: 2490 euros /month

CONTEXT AND AIMS

Manganese (Mn) is an essential element for plants, mainly involved in photosynthesis and defence mechanisms. Mn content in the seeds is also crucial for the vigor of germinating plants, and coating the grains with Mn is a common practice in agriculture. Worldwide, seeds are also the main source of micronutrients for human populations that consume plant-based diets, and the production of nutrient-rich seeds and the design of biofortification strategies in cereals are of high interest. In this context, the knowledge of the processes underlying Mn allocation in the seeds is required. We study the loading of Mn into the seed, how several transporters are involved in Mn allocation, and how Mn is stored in the various compartments.

Several studies on metal transporters revealed the role of the vacuolar Metal Tolerance Protein 8 (MTP8) in Mn transport and accumulation in the vacuoles of the cotyledons of seeds. However, other transporters from the Natural Resistance Associated Macrophage Protein (NRAMP) family are likely involved, and we particularly focus on these.

This Post-doc project will explore the way Mn is loaded and sequestered in plant seeds using a combination of synchrotron techniques. Particularly, seeds will be analyzed by full field and µXRF tomography. The Mn chemical species will be explored in the various seed compartments using XAS and µXAS spectroscopy.

By investigating seeds of wildtype and mutants, we expect to clarify the role of the various transporters in the metal allocation.

TASKS

The post-doctoral fellow will be in charge of the chemical imaging and X-ray absorption spectroscopy of the project.

FUNDING

This post doc position is funded by the ANR project DEFIMAN involving IPREM/Pau and IPSIM/Montpellier.

SUPERVISION AND CONTACT

The post-doc will be supervised by Marie-Pierre Isaure, Iprem (http://iprem.univ-pau.fr) and will work in close collaboration with the collaborators of the ANR project and synchrotron facilities.

For information, please contact Marie-Pierre Isaure by e-mail.

Contact: marie-pierre.isaure@univ-pau.fr

YOUNG RESEARCHER SKILLS REQUIRED

The applicant will be a young doctor with a PhD in Environmental Sciences, Biology, or Chemistry/Physics. Skills in chemical imaging (electron microscopy, µXRF...) and/or X-ray technique are expected. She/he is rigorous, autonomous and has strong interest in working in a transdisciplinary team. Preliminary experience in synchrotron radiation techniques is recommended.

SALARY

The salary will be 2490 euros/month (gross salary).

APPLICATIONS AND DEADLINE

Application must include:
- a cover letter emphasizing the relevance of your research and motivation to this position (max 1 page),
- CV (max 2 pages)
- a publication list
- contact details of at least two relevant professionals who can provide a reference letter based on request
- PhD diploma, as well as report provided after the PhD defense ('*Rapport de soutenance de thèse*' or equivalent) and reports from the principal examinators of the PhD defense jury ('*Avis des rapporteurs'* or equivalent).

Applicants selected in a first step will be interviewed.

Submit your application by e-mail to marie-pierre.isaure@univ-pau.fr before **March, 31th 2023.**