

Post-doctoral position in Biotechnology

Optimization of the production of pigments through solid state fermentation

URD ABI – AgroParisTech

Duration: 24 months

Host laboratory:

Located in the Center for Biotechnology and Bioeconomy (CEBB), at the heart of the Pomacle-Bazancourt biorefinery, the URD ABI (Unit of Research & Development in Industrial Agro-Biotechnologies) is interested in the valorization of biomass through an approach combining biotechnologies, green chemistry and process engineering. Thanks to its expertise in chemistry, polymers/materials, microbiology/biochemistry/molecular biology, chemical engineering and separation process engineering as well as in analytical chemistry, the URD ABI is able to carry out multi- and transdisciplinary fundamental and applied research projects with the ambition of developing and optimizing sustainable industrial processes and high value-added products from agro-resources and industrial by-products.

Context and objectives:

Thanks to the increasing concern for the respect of the ecosystems and the human health, production sustainability of value-added molecules appears as an essential criterium for a majority of compounds (including pigments and colorants) especially in the food industry. Natural alternatives to synthetic compounds notably encompass biotechnological approach and more specifically microbial fermentations. However, these techniques still suffer from high production cost in comparison with the chemical catalysis approach. In an attempt to decrease the production cost, solid state fermentation (SSF) appears promising because it allows the valorization of abundant and low-price agro-industrial byproducts as solid medium and has no downstream effluents to treat.

The postdoc will take part to a project that aims to optimize the production of a solid fermented materials enriched in microbial pigments with interesting bioactivities through SSF using agro-industrial byproducts as substrates.

The key objectives are:

- Screening of different candidate strains
- Screening of agro-industrial byproducts
- Optimization of the process through designs of experiments
- Biological assays of the obtained crude extracts
- Work at the interface of the biotechnology and mathematical modelling teams

Candidate profile:

The selected candidate will hold a PhD in biotechnology and will have skills in fermentation (experiences in solid state fermentation is a plus), in analytical chemistry and in experimental designs. The candidate will also have a strong inclination towards lab work and will integrate easily into a multidisciplinary dynamic team.

Location:

European Center for Biotechnology and Bioeconomy, 3 Rue des Rouges-Terres, Pomacle (51110), France, located at 15 km from Reims (having a vehicle is recommended).

To apply, please send a CV and a cover letter to quentin.carboue@agroparistech.fr