



Toulouse Biotechnology Institute
Bio & Chemical Engineering

A 36-month post-doctoral position in Molecular Modelling and Design of enzymes @TBI, Toulouse, France

A Post-doctoral position is available at the **Toulouse Biotechnology Institute (TBI)** located on the grounds of the INSA-Toulouse, France. The laboratory is also affiliated to the French National Centre for Scientific Research (CNRS, UMR INSA-CNRS 5504) and the French National Research Institute for Agriculture, Food and Environment (INRAE, UMR INSA-INRAE 792). TBI is an interdisciplinary research laboratory of 350 people that develops its research activity at the interface between life sciences and process sciences, with focus on catalysis and enzyme engineering, systemic and synthetic biology, fermentation, process engineering and eco-design (<https://www.toulouse-biotechnology-institute.fr/en/>). The candidate will work in the **Enzyme Catalysis and Molecular Engineering team** that holds a strong expertise in enzyme engineering and synthetic biology.

Job description

The successful candidate will be a key member of a research project funded by the **French Environment & Energy Management Agency (ADEME)**, carried out in collaboration with several partners, both academics and industrials, TBI, the CRITT Bioindustries, TWB and Naturamole. The **CALipSO project** aims at developing new enzyme-based routes to produce natural functional esters of major interest for the fragrance, food, cosmetics and chemistry industry. He/She will be in charge of conducting molecular modelling studies to get a better understanding of molecular determinants involved in substrate specificity and function of several enzymes involved in the targeted synthetic routes. The objective will then be to apply computational enzyme design tools to redesign these proteins to achieve the desired catalytic properties and drive experimental construction of enzyme mutant libraries. This work will be carried out in tight interaction with Post-doc fellows in charge of enzyme engineering tasks in the project.

We are looking for a highly motivated scientist who has research background and expertise in a number of areas of Computational Biology, including protein modelling, molecular docking and molecular dynamics simulations; experience in computational protein design and sequence analysis would be a great plus.

A biology background and a sound understanding of protein modelling and protein-ligand interactions are required. Familiarity with UNIX and Linux is expected.

The candidate will be a key player in the project as he/she will ensure the tight interaction between the different academic and industrial partners. He/She will be based at TBI, Toulouse (31).

Qualifications

- PhD in Molecular Modelling, Structural biology, Bioinformatics or related field.
- Strong communication and organizational skills and enjoying working in a team-oriented environment.
- Good English skills are required and notions of French would be a plus.
- The position is available starting in **June 2024 and for a duration of up to 36 months.**

Applicants should send as soon as possible CV, summary of previous research and contact addresses of two references to:

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