

Post-doctoral Researcher Position in Multi-scale Modelling of Lignocellulosic Biomass Deconstruction

Applications are invited for a two year post-doctoral researcher position in computational modelling of plant cell wall deconstruction at [FARE Laboratory](#), Reims, France.

Duration: 2 years

Deadline: Open until filled (not later than 15/03/2021)

Objective: The main objective of this project is to develop a computational model of lignocellulosic biomass deconstruction during enzymatic hydrolysis.

Description:

Renewable resources from agriculture and forestry such as lignocellulosic biomass (LB) is foreseen as an alternative to fossil carbon to produce biofuel, bio-based chemicals and materials in biorefineries to limit climate change. Nevertheless, due to chemical and structural complexity of LB, it is recalcitrant to biochemical deconstruction by enzymes and requires expensive pretreatment steps. To achieve a cost-effective deconstruction, it is necessary to understand and overcome the chemical and structural parameters conferring the recalcitrance to LB.

You will develop computational models to identify key structural parameters underlying LB recalcitrance using the 4D (space + time) data of LB deconstruction collected in FARE laboratory and a 4D (space + time) image processing pipeline developed at FARE laboratory providing a binary representation of individual cell walls and their evolution over time. You may also be required to assist in the supervision of student projects, provide instructions to students and deliver seminars relating to your research area.

We offer an outstanding scientific and technical infrastructure (such as computing facilities of the [ROMEO HPC centre](#), state of art confocal microscope facility, etc), a highly motivated research team, as well as an international and interdisciplinary working environment offering ideal conditions for successfully conducting the research project.

Requirements:

Candidates should have a PhD in computer science, engineering, applied mathematics, or related fields. Applicants should have good skills in Python/C++ programming languages. Experience in image processing and computational modelling would also be advantageous. Good communication skills are essential as the successful candidate will need to work in an interdisciplinary team gathering different researchers and write up their research work for presentation and publication.

Application: Applicants should send a letter of motivation and a detailed CV, including the contact details of at least two academic referees to :

[Dr. Yassin Refahi](mailto:yassin.refahi@inrae.fr), yassin.refahi@inrae.fr, +33 (0)3 26 77 35 86