Post-doctoral Researcher in Data Analysis and Machine Learning on Mass Spectrometry and Nuclear Magnetic Resonance data for biomarkers discovery in lignocellulosic biomass

IFPEN Lyon – Direction Physique et Analyse

Context

Producing fuels, chemical intermediates, and energy from renewable sources such as lignocellulosic biomass, must be one of the strategic research priorities if we wish to rapidly support the energy transition. However, to consider a better profitability of lignocellulosic biomass conversion processes by the biochemical route, it becomes essential to establish the link between the physical and chemical properties of lignocellulosic biomass and the sugar yield observed after enzymatic hydrolysis step. This question is being addressed in a multi-partner project funded by the French National Research Agency (ANR). This project aims to combine the skills of experts in analytical chemistry and data science to identify reactivity markers of lignocellulosic biomass.

Post-doctoral position

-To analyze industrial biomass samples by LC-HRMS and NMR
-To investigate the usefulness of including additional separation dimensions, such as 2D-LC or ion mobility in the acquisition of data of higher quality
-To process data set: chemical profiling, molecular networking, annotation
-To research biomarkers: data fusion, variable selection algorithm, chemometrics supervised multivariate analyses

Requirements for candidate

-PhD in analytical chemistry, with a first experience in untargeted LC/HRMS analysis
-Prior experience in the field of data processing by using programming and numeric computing platform such as MATLAB
-Programming in language such as PYTHON would be an advantage
-Self-critical, capacity to learn and bring knowledge
-High motivation and ability to be involved in an international multidisciplinary team
-Excellent team working and communication skill

We offer

If we tell you... Nobel Prize? Top 10 in the world for plastic recycling patents? A pioneer in CO2 capture/storage and biomass research? At the heart of 100 industrial partnerships? The answer is IFP Energies nouvelles (IFPEN)! Come and contribute to research that meets the energy challenges of today and tomorrow, with state-of-the-art equipment for R&I. Join a team committed to the ecological transition. We have 1,600 employees spread over 2 research centers: Rueil-Malmaison (92 - near Paris) & Solaize (69 - near Lyon). You'll be based at the Solaize site, in the heart of the Chemical Valley and easily accessible from Lyon (car, TER, shuttle...). Discover our many advantages: flexible working hours and the possibility of teleworking days; 25 days' vacation and up to 27 days off per year; a CSE offering a wide range of services and activities (sports, leisure, travel, etc.); a pleasant, friendly working environment (green spaces, company restaurant, social room, etc.)