

## Post-doctoral Position in Environmental omics

INRAE, National Research Institute for Agriculture, Food and Environment, PROSE, Antony, France

A 42 months post-doctoral position is open to develop fast diagnosis tools to monitor anaerobic digesters functioning in the Environmental biotechnology PROceSses research unit (<https://www6.jouy.inrae.fr/prose/>) in the framework of the METHADIAG project funded by the French National Research Agency.

### Project:

Anaerobic digestion is a process of degradation of the organic matter carried out by a complex network of microorganisms that produces biogas rich in methane, which can be ultimately converted to energy. The process performance hinges on the structure and the interactions among the species in the microbial community, which is at the same time determined by the digesters operational conditions. Currently, the control of the anaerobic digestion process relies on monitoring physico-chemical indicators that do not allow precise identification of the origin of the disturbances. As the microbial community in the digesters is very sensible to the alterations in the operational conditions during AD, our research hypothesis is that the monitoring of the microbial community can be used as a more effective method to evaluate the digesters' functioning than classical physicochemical indicators. The use of high-throughput techniques from the biological field (i.e. 16S DNA metabarcoding and metabolomics) could be a very powerful mean to realize such monitoring and reveal the nature of the process disturbances.

In this line, the Methadiag project has three main objectives:

- 1- Develop specific analytical protocols that could be used on-site or enable a quick response;
- 2- Evaluate to what extent anaerobic digesters are comparable and common diagnosis tools could be developed;
- 3- Establish a set of microbial and molecular biomarkers to monitor digester functioning by the fast diagnostic tools developed.

### Candidate requirements:

Candidates should have a PhD with strong background in microbiology and omic methodologies. Knowledge's in environmental bioprocesses would be appreciated. Applicants should be highly motivated, well organized, proficient in English, and able to work independently as well as collaboratively.

If you are interested, do not hesitate to contact us: [laurent.mazeas@inrae.fr](mailto:laurent.mazeas@inrae.fr)