

Teacher-Researcher in Experimental Modeling Applied to Agro-Mechanics (M/F)

UniLaSalle is a fast-growing engineering school in Earth, Life and Environmental Sciences (2,800 students - 390 employees). It has all the facilities required for teaching and research on three sites: a 20-hectare campus in Beauvais, a campus in Rouen and a campus in Rennes.

We are currently looking for a **Teacher-Researcher in Experimental Modeling Applied to Agro-Mechanics (M/F)** for an opening position in the Agro-Machinery and New Technologies Chair, to reinforce the team currently in place at the UniLaSalle Beauvais College of Agrosiences.

The Teacher-Researcher will collaborate with the TRs in agronomy, agro-equipment, soil mechanics, French or international research networks in agro-equipment, various players of the regional agricultural supply chains and the industrial partners of the Chair (AGCO - Massey-Ferguson, Michelin, Kuhn). The TR will collaborate with the applied mathematics communities in signal processing and experimental modelling (machine learning, automatics and signal processing), to which he/she will disseminate his/her work on the application of methods to agro-mechanics.

The TR will be integrated into the [AGHYLE](#) labelled research unit, whose research focuses on the functioning of eco and agrosystems and more particularly on the interactions between cropping practices, soil functioning and the associated agronomic and ecosystem services.

Missions

Your missions are divided into 3 parts:

20% Teaching:

You will participate in teaching in (1) engineering sciences; (2) mechanics; (3) energy; (4) challenges of agricultural equipment; (5) modeling and model parameterization; (6) initiation to experimentation and scientific valorization. The public is made up of engineering students, mainly from the "Agronomy & Agro-Industry" specialties, but also from "Earth and Environmental Sciences" courses.

20% Student projects supervision and internship:

You will participate in the supervision of students' projects during the 3rd, 4th and 5th years of the 5-year training course for engineering students in "Agronomy & Agro-Industry". You ensure the follow-up with the sponsor. You will participate in the supervision of end-of-study internships and in the juries for end-of-study theses.

60% research, studies and advice:

As part of an innovative research project carried out by the Agro-Machinism and New Technologies Chair and within the AGHYLE research unit, you will:

- Take responsibility for the implementation of the Modelling work package (WP2) of the AMNT Chair's scientific program on the mechanical study of coupled ensemble (tractor-pneumatic-implement) in intervention conditions, using an exploratory method based on experimentation;
- Interact with a post-doctoral position in charge of the experimentation processes to ensure the best data collection and usage;
- Building or adapting mechanical models to identify the best energy and agronomic compromises by technical operation;
- Animate an internal (EC) and external interdisciplinary network (scientific community, contributors...);
- Develop new projects that are part of the scientific program of the AMNT Chair and the AGHYLE unit.
- Promote your results in the scientific community of reference.

Profile

- You have a doctorate in automation/signal processing, mechanical or energetic, with a recognized scientific background (expertise, publication list, etc.) - ideally with a recognized capacity to conduct researches;
- You have significant experience in model development from experimental data (experimental modeling, system identification and/or in parametric estimation methods (Kalman filtering, linear and non-linear optimization));
- You have experience/attraction in modeling complex processes at the interface between mechanics, energy and agronomy and ability to interact with researchers from other fields;
- Knowledge in agronomy and agro-machinery would be a plus;
- You communicate fluently in English (written, oral), and French as much as possible.

Expertise

- Experimental data collection and processing (including instrumentation)
- Applied Mathematics: methods and tools for signal processing, optimization and parametric estimation
- Knowledge in mechanics and energy

Full-time permanent position based in Beauvais, to be filled by January 4th, 2021 the latest.

Remuneration according to profile and experience.

Please send us your application before September 1st, 2020 (CV, LM and scientific references) to the following address: rh@unilasalle.fr