

## Full time scientist position in the field of « Ecosystem Energy Exchanges » at Gembloux Agro-Bio Tech

### Call for candidates

Full time position (first assistant) in the field of « Ecosystem Energy Exchanges » within Gembloux Agro-Bio Tech – University of Liège, for a period of 2 years after which a definitive appointment could be proposed.

The first assistant will contribute to teaching, research and community service activities and will be attached to the axis « Biosystems Dynamics and Exchanges (BIODYNE) : <http://www.gembloux.ulg.ac.be/biodyne/> ».

### 1. Research activities

In direct connection with the strategic plan of GxABT, the proposed theme deals with the issue of the greenhouse effect that weakens terrestrial ecosystems. For example, research activities would focus on characterising the role of energy exchanges in the dynamics of ecosystem growth, and/or the functioning of their soil and their contribution to global climate change. The scientific approach will include experimental and modeling approaches.

In order to optimise production systems of bioresources and to meet the expectations of sustainability, it is necessary to characterise the influence of biotic and abiotic environment on ecosystems services. To this end, GxABT has acquired in recent years, within the TERRA centre, state-of-the-art research infrastructures making it possible to monitor the dynamics of agrosystems in interactions with their environment, both under controlled conditions and in field conditions (Ecotron and ICOS-RI flow tower stations within EnvironmentIsLife CARE (Centre d'Appui pour la Recherche et l'enseignement in French to be translated to « Support Centre for research and teaching ») and field plots within AgricultureIsLife CARE). These experimental devices will be available to the new scientist to study the impact of the components of the energy balance (radiative, convective or conductive energy exchanges) on the dynamics of ecosystems and their role in global warming.

More specifically, this position will be part of the research strategy of the axis BIODYNE, which is interested so far in the influence of abiotic factors such as climate on cycles of elements such as carbon, nitrogen and water and characterisation of the dynamics of ecosystem growth. It will also cover the animation of research activities in one or more of the following sections of this theme :

- The study of ecosystem stress sources related to the management of energy flows (and possibly the consequences of these stresses) ;
- The integration of energy effects (albedo, sensible or latent heat, ...) while studying the impact of the change of land use (cultural practices, change of the type of ecosystem or species) on climate conditions (up to global radiative forcing and in parallel with the greenhouse gas balance of the observed plots) ;
- The development of energy modules within physically based soil-vegetation-atmosphere models ;
- The detection and characterisation of vegetative stress by means of proxidetection in the thermal field.

## 2. Teaching activities

Teaching activities will be progressively requested as part of the courses provided by the axis BIODYNE both in programmes organised by GxABT and in interfaculty courses linked to the areas of competence of GxABT.

The mission will register for a load of about 150 hours of face-to-face services which may include several pedagogical activities (ex-cathedra courses, seminars, field visits, tutorials and practical work, excursions) and supervising of students during their master thesis.

From the academic year 2018-2019, this charge will include a teaching assignment for the course "Energy Systems and Renewable Energy" (18h theoretical, 18h practical work) equivalent to 4 ECTS credits of the Master in Environmental Bioscience engineering.

## 3. Services to the Community

The first assistant will be involved in the community services of the Faculty Gembloux Agro-Bio Tech and the University of Liège, and beyond services to society, in accordance with his/her hierarchical authorities.

## 4. Eligibility criteria

Candidates must :

- Hold of a MSc diploma in Bioscience engineering or MSc diploma from a university and hold a PhD in (agricultural) sciences, and have significant experience in the field of the call ;
- Have a recognised scientific experience with world-class publications in at least one of the areas of the call ;
- Demonstrate ability to work on interdisciplinary themes ;
- Be ready to work in a team and with shared human and material resources within the Faculty and the TERRA research centre and its CAREs ;
- Be available for various community service functions and popular science.

The candidate will also be able to manage technical staff and have a good knowledge of English. The candidate will be available for missions abroad. If the candidate is not French-speaking, he/she will commit to develop sufficient fluency in French to interact with his/her colleagues at Gembloux Agro-Bio Tech within 2 years.

Finally, the candidate will adhere to the general objectives of the quality management and continuous improvement system developed within the Institution.

Upon appointment, the candidate will have to sign an agreement relating to the ownership of the research results.

## 5. More information

For further information, you can contact Gembloux Agro-Bio Tech :

Professor Benoît Mercatoris ([benoit.mercatoris@uliege.be](mailto:benoit.mercatoris@uliege.be)).

## 6. How to apply ?

Applicants are requested to submit their applications to Professor Frédéric FRANCIS, Dean, Gembloux Agro-Bio Tech – University of Liège, Passage des Déportés n° 2, 5030 Gembloux, before September 15th, 2018, with reference « GxABT – Appel 1<sup>er</sup> assistant ».

Complete file will include :

- A complete curriculum vitae ;
- An application letter developing the personal aspirations of the candidate in relation to the call ;
- A summary of their research project related to the field of the call (maximum 4 pages).

A copy of the complete application file will also have to be sent by email at : [doyen.gembloux@uliege.be](mailto:doyen.gembloux@uliege.be)