FULL-TIME ACADEMIC POSITION IN BIOMASS TRANSFORMATION - DOWNSTREAM PROCESSING

Polytechnic School of Brussels

Reference : 2016/A058
Application deadline: 31/10/2017
Start date: 01/02/2018

Job description

The Brussels Bioengineering School is seeking to develop a strong hub in the field of bioresources (biomass) transformation and valorization with activities ranging from the laboratory to the pilot scale. Two positions have been opened, one in "Biomass transformation - downstream processing" and one in "Chemical and biochemical transformation of biomass". A strong collaboration between these two chairs will be highly encouraged.

The candidate for the chair in "Bioresources transformation - downstream processing" must have expertise in the design of biomass transformation processes and downstream operations leading to chemical building blocks or high added value products. He/she must have the scientific expertise required to design and scale-up unit operations and/or processes based on chemical, enzymatic and/or biological methods for the transformation of biomass and the subsequent downstream processing. A specific know-how in the valorization of urban bioresources will be considered an advantage.

The candidate will have to show his/her ability to work in close synergy with existing research teams in the Bioengineering School, the Faculty of Sciences, the Faculty of Pharmacy and the Polytechnic School, particularly in the extraction, characterization and use of high added value products, for which important expertise is already present. A strong partnership will be expected with the new academic in "Chemical and biochemical transformation of biomass", in order to develop a strong bioresources valorization hub focusing on applications from the laboratory to the pilot scale.

Area of Research:

The research should focus on transforming bioresources to obtain chemical building blocks and/or high added value products. The transformation should not be limited to compound extraction as existing research teams at the ULB already deal with this activity. The transformation could be achieved using chemical, enzymatic and/or biological routes. The research will focus on the design, scale-up and optimization of these transformations and downstream processes from the laboratory to the pilot scale.
Educational and scientific goals:

The successful candidate’s teaching activities will have to integrate the existing bioengineering teaching activities and will be expected to develop learning activities dealing with bioresources valorization in a sustainable development framework.

Research activities will have to be of international level and should lead to the development of an autonomous research team. The research activities should reinforce or favor synergies within ULB with existing teams with complementary expertise from the Bioengineering School, the Faculty of Sciences, the Faculty of Pharmacy and the Polytechnic School. Moreover, in partnership with the team of the person that has been appointed on the opening in "Chemical and biochemical transformation of biomass", research activities should lead to the development of bioresources valorization applications, from the laboratory to the industrial pilot scale. With existing teams with complementary interests, this should lead to a value chain going from the prospection of potential valorization pathways to final product development. These collaborations should lead to the positioning at an international level of the Bioengineering School in the field of bioresources valorization.

Courses covered at the time of recruitment:

New courses, in the field of expertise of the successful candidate will be opened, in due course, at the Master level.

Upon appointment the successful candidate will be invited to participate actively in existing courses in the bioengineering curriculum, both at the bachelor and master levels. Depending on his/her expertise, the successful candidate could be asked to participate in one or more of the following courses:

- CHIM-F101 Chimie générale
- MECA-H301 Thermodynamique appliquée
- CHIM-H314 Introduction au génie des procédés
- MECA-H3001 Fluid mechanics and transfer processes
- BING-H4000 Modélisation et contrôle des systèmes dynamiques en bioingénierie
- BING-H4003 Opérations unitaires pour l'environnement et les bio-industries
- CHIM-H413 Génie des réacteurs chimiques et biologiques
- CHIM-H422 Environmental technology / Environmental engineering: current methods and practice
- BING-F531 Bioremédiation
- BING-F502 Principales filières agroalimentaires et valorisation de molécules d'intérêt d'origine alimentaire

The teaching load will be progressive in the first years in order to give the successful candidate time to develop their research activities.

Qualifications required:

PhD Degree (with doctoral thesis) in “Engineering Science and Technology”, or in “Agricultural Sciences and Biological Engineering” or equivalent qualification.

Skills required

- Applicants should have at least 4 years of research experience at the time of their recruitment.
- Post-doctoral experience and an excellent scientific record are a plus.
- Exchange periods outside of the applicants’ home institution (during or after their PhD) will be taken into consideration when evaluating applications.
- Applicants who do not speak French (level C1) may be granted a period of adaptation, but they must be able to teach in French at the end of the third year following their appointment.
Interested?

For more information, please contact Prof. Dimitri GILIS (telephone: +32 2 650.36.15 – E-mail: 
dgilis@ulb.ac.be).

Applications must be sent by e-mail to the rectorate of the Université Libre de Bruxelles
(recteur@ulb.ac.be) and to the faculty deanship (le-doyen-polytech@admin.ulb.ac.be).

They must include the following:

- an application letter
- a Curriculum vitae including a list of publications (a template can be downloaded at
  http://www.ulb.ac.be/tools/CV-type.rtf)
- any relevant documents showing 4 years of research experience
- a 7,000-character report (4 pages) presenting the applicant’s research activities and a research project,
  including how these will integrate into ULB’s research teams
- a teaching dossier including a 7,000-character report (4 pages) on the applicant's previous teaching
  activities and a teaching project for the first five years in this position; these must be relevant to the
  faculty and to the teaching profiles for the programmes to which the applicant is to contribute
- a note on the applicant's international achievements and projects (no more than 4 pages)
- the names and e-mail addresses of five references (with equal gender representation) who may be
  contacted by those in charge of evaluating applications. These references should not have conflicts of
  interest.

By sending in their application, applicants acknowledge they have read and understood the additional
information and the regulations relevant to research staff, available at the following address
n° de vacance : 2016/A058
Domaine : Sciences et techniques / Sciences agronomiques et ingénierie biologique
Discipline : Bioresources transformation - downstream processing
Poste(s) au cadre : 17-C-CCO-243 (H) (1.00 ETP)
Références CoA : 21/11/16 pt III.04
Rattachement Enseignement : HU017 UE en BioModélisation, Bioinformatique et BioProcédés
Rattachement Recherche : HH012 Bioinfo

EURAXESS SPECIFIC INFORMATION

Main Research Field : 15 Engineering - 16 Environmental Sciences - 37 Technology
Sub Research Field : 15.22 Process engineering - 16.4 Natural resources management - 37.1 Biotechnology

Required educational level: PhD Degree (with doctoral thesis) in “Engineering Science and Technology”, or in “Agricultural Sciences and Biological Engineering” or equivalent qualification

Required Languages :
Français : good
English : good

Type of contract : temporary
Hours per week : 38

Required Research Experiences : Engineering (15) ; Process engineering (15.22) : (4)
Environmental sciences (16) ; natural resources management (16.4) : (4)
Technology (37) ; Biotechnology (37.1) : (4)

Researcher profile : Early stage researcher (0-4 years)
Experienced researcher - R3 (4 – 10 years)