

## **Position: Ph.D. Researcher**

# **Dealing with compositional variability in biobased mineral fertilizers**

### *Introduction*

Ghent University (Belgium) is internationally one of the leading institutes in resource recovery and renewable resources. It is home to the BioRefine Cluster Europe ([www.biorefine.eu](http://www.biorefine.eu)), a network of international research and development projects with the dedicated focus of guiding innovation towards applied market implementation.

As part of the AgRefine program, a Marie Skłodowska Curie -European Training Network, we are recruiting a junior expert for a Ph.D. degree at Ghent University (Belgium). The AgRefine integrated training program will facilitate the amelioration of Europe's agri-sector competitiveness and environmental sustainability challenges by creating new and optimizing current agri-resource and agri-waste valorization pathways. The goals of the network will be achieved by a unique combination of "hands-on" research training, non-academic placements, and workshops on research-related and transferable skills.

### *Research content*

This research focuses on the assessment of variability in bio-based fertilizers, on-line sensory technology (e.g. operational reliability of NIR sensors), and blending strategies to obtain optimal NPK ratios. The candidate will investigate mass flows of both major and minor nutrients as well as organic carbon in the downstream processing of digestates, a cascade of recovery techniques that will allow production of multiple refined organo-mineral fertilizers, soil enhancers, and growth substrates.

The aspirant will investigate the recovery and re-use of macro- and micronutrients from different fractions of digestate, taking into account crop-specific requirements. Product assessment will consist of both scrutinizing the availability of recovered nutrients to the plant as well as assessing the product's microbial, organic- and inorganic-pollutant contents. Special attention to the GHG emissions and carbon footprint modelling during the process will be taken. The candidate will also examine the regulatory aspects governing the use of digestates.

### *Your profile*

- You are interested in and motivated by the research topic, as well as in obtaining a Ph.D. degree
- You have mastered the English language, both in writing skills and oral presentations
- You have the required communicative skills to interact independently with the scientific community, business community, and farming community
- You are keen to learn about industrial lab practices
- You have a relevant degree – Master level in applied biological sciences (agriculture, environmental technology, microbial engineering...)

### *We offer*

- Full-time employment for a period of 3 years – with possibility of 1 year extension
- Being embedded in a team of young, dynamic experts on nitrogen and phosphorus recovery from academia and industry
- Involvement in a world-class consortium with experts from five European Universities (with expertise in biorefinery technology, engineering, life cycle assessment, economics), one applied research institute, eight industry partners (from engineering, AD and biorefinery industries), one regulatory body and one industry network representing six countries
- Possibility of mobility across partner countries to visit innovative nutrient recovery processes at practical industrial scale
- An innovative and hot-topic research scope with clear, practical applications
- Close supervision and guidance in the conducting of the planned research
- The possibility to develop a broad network
- Stimulation to self-improvement by encouraging participation in summer schools, workshops, and conferences
- Career option (to be discussed with the selected candidate based on mobility/travel interests and research opportunities): for short or longer stays at partner organizations and the possibility to obtain Dual Degree Ph.D. from both institutes as a result of such an exchange.

### *How to apply*

Send (I) CV and (II) motivation letter to [ana.roblesaguilar@ugent.be](mailto:ana.roblesaguilar@ugent.be) before January, 31<sup>st</sup>, 17h (Central European Time) (put „AgRefine“ in the email title). Selected candidates will be invited for an interview in the second half of February.

Documents to be provided:

(A) Professional résumé (CV)

(B) motivation letter