RESEARCH CONTRACT IN THE FRAME OF THE EUROPEAN PROJECT "NUTRITIVE"

Position's characteristics

A research contract is offered to develop a PhD thesis in the Environmental Biotechnology Group (Biogrup) of the University of Santiago de Compostela in the framework of the European project NUTRITIVE. The contract would start with a training period of 6 months (gross salary of approximately 1150 €/month and 14 payments/year) followed by a 3-year predoctoral contract (1300 €/month and 14 payments/year during the first year, 1500 €/month and 14 payments/year during the second year and 1700 €/month and 14 payments/year during the third year).

Project description

European policies, based on Europe's Green Deal, aim at a sustainable agricultural system that combines environmental, economic, and social approaches. Among the different agricultural sectors, livestock plays an essential role in the supply of global food: 34 % of the protein consumed comes from meat, eggs, and milk; 40 % of the world's gross domestic product (GDP) is related to livestock; livestock farming represents 40 % of the total agricultural activity in Europe and a total value for products in the EU-28 equal to € 170 billion. However, there are increasing concerns of livestock farming's contribution to environmental pollution. It is a major source of air, soil, and water contaminants, being responsible for 12-17 % of the EU's total greenhouse (GHG) emissions, and a key driver of biodiversity loss in Europe. During the period 2016-2019, animal farming generated more than 1.4 billion tonnes/year of manure in the EU-28. These lead to significant GHG (CH_4, NO_2) and other (NH_3, NO_X) air pollutant emissions. There is also soil and water contamination caused by hazardous manure chemicals and biological pollutants like heavy metals, antibiotic residues, antibiotic resistant bacteria (ARBs) and genes (ARGs), and livestock-associated pathogens. One of the areas of greatest concern is manure management and the lack of specific measures and policies. In this context, extensive effort has been carried out for years by governments and researchers to assess the detrimental effects of farming systems and to develop abatement methods to be implemented. However, despite major advancements, success in protecting the environment is still questioned and many fundamental issues are beyond the scope of existing legislation. NUTRITIVE project will develop a decision-making tool (DSS, decision support system) able to define the most efficient and sustainable manure management strategy for a given livestock farm. Based on three pillars (environmental, economic, and social) it will limit manure air emissions as well as soil and water contaminants.

NUTRITIVE is an ambitious project of HORIZON-CL6-2023-ZEROPOLLUTION-02 call with 22 international partners (Spain, France, Germany, Belgium, The Netherlands, Portugal, Ireland, Italy, China) coordinated by MEDRAR Smart Solutions, S.L. The project aims to address existing gaps translating current challenges associated with manure management into policy recommendations and technical guidelines towards the implementation of sustainable and cost-effective ad hoc solutions for livestock farming systems. This implies that the person hired will have an excellent opportunity for conducting research stays in the different institutions of the consortium.

Research area

Removal of emerging contaminants during anaerobic digestion of livestock wastes

Supervisors
Marta Carballa Arcos and Sabela Balboa Méndez

Brief work description

- Characterization of livestock wastes in terms of emerging contaminants.
- Optimization of anaerobic digestion of livestock wastes by temperature to maximize emerging contaminants removal.
- Optimization of anaerobic digestion of livestock wastes by carbon materials addition to maximize emerging contaminants removal.

Requirements

- Candidates must have a master's degree in chemical or environmental engineering, environmental sciences or similar, and present an adequate training in biological wastewater treatment and, in particular, in biological solid waste treatment.
- Candidates must have a clear interest in developing a research career culminating in the completion of a PhD thesis.
- Candidates must have a good level in English.
- Candidates must show the ability to travel abroad to attend project meetings or conferences.

Selection process
Applications must be sent to marta.carballa@usc.es (including in the subject: "NUTRITIVE PhD position") before 21st June 2024 at 14:00.

Applications must contain the following documents:

- Motivation letter (not more than 1 page), indicating the contact details of the candidate and a brief description of the reasons why he/she should be selected.
- Curriculum Vitae

The selection process involves the following steps:

1. Evaluation of applications (motivation letter and CV)

The adequacy of applicant's profile to the requirements of the call will be tested. It is a qualifying stage and it accounts for 30% of the total score.

2. Screening test

Successful candidates from the first stage will be invited to a qualifying screening test, which will account for 25% of the total score. The objective of this test is to evaluate candidate's competency to develop a research career as well as his/her reading and writing skills in English.

3. Personal interview

Successful candidates from the second stage will be invited for a personal interview in which, among others, his/her oral skills in English will be assessed. The personal interview and English level account for 25% and 20%, respectively, of the total score.

The selected candidate will be invited to sign the research contract and a waiting list with the following 3 candidates will be elaborated.