



M2ex – Exploiting metal-microbe applications to expand the circular economy

Marie Skłodowska-Curie Action H2020-MSCA-ITN-EJD-2019

ESR13-UP/CIIMAR: Trace metals fate and speciation in soils after contamination – interactions with organic micropollutants and effects on bioremediation processes.

Job description

We are looking for a motivated Early Stage Researcher (ESR) in the field of metal bioremediation. The research fellow will be hosted at the Faculty of Sciences of Universidade do Porto (UP) and CIIMAR. The research group involved has long expertise in bioremediation processes, in trace metals and organic pollutants interactions, analysis and modelization, leading and participating actively in several projects on these topics. He/she will be recruited by the Faculty of Sciences of UP for a period of 36 months with the aim of obtaining a PhD degree in co-tutel of UP and Università degli Studi di Napoli Federico II (UNINA).

The M2ex European Joint Doctorate offers to the ESR13 an innovative series of Network-wide training events to ensure a high-quality, engaging and inspirational training environment including secondments in research units at UNINA (Italy) and Université de Reims Champagne-Ardenne (France) and in companies, namely TratoLixo, Tratamento de residuos solidos (Portugal) and C&F Società Agricola S.r.l. (Italy).

Objectives

To study the influence of soil physico-chemical properties, namely with different organic matter contents, on the fate and speciation of trace metals present in soils after metal contamination (namely through industrial wastewater effluents or AD digestates). Soils intrinsic properties will be correlated to metals sorption behaviors and their effect on microbial communities assessed. Influence of organic micropollutants on metal speciation will be also considered. Moreover the fate of contaminants will be modeled to assess metal speciation through different methodologies (analytical techniques and modelization). All data will be integrated to assess effects on bioremediation processes.

Expected Results

Obtained results will elucidate on the effect of soil physico-chemical on metal speciation as well as on the role of organic microcontaminants on this speciation and the effect on microbial communities and bioremediation processes. These will contribute for the development of strategies for metal manipulation, creating opportunities for their recovery and reuse and promoting circular bioeconomy.



Candidate's profile

We are looking for a candidate with Master Degree related to Chemistry, Biochemistry or Environmental Sciences.

Our Offer

You will receive an employment contract for 3 years according to the EU contribution for ITN recruitments and general conditions at the host institution. It includes full social security coverage and will start in September 2020.

Enrolment in Doctoral degree(s): UP / UNINA