



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

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

### **ESR5-UNILIM: Characterization of the role of microbial constituents and by-products from (bio)reactors on metals speciation**

#### **Job description**

We are looking for a motivated Early Stage Researcher (ESR) in the field of chemical characterization of microbial matrices and by-products and their impact on metals speciation/distribution in (bio)reactors. The research fellow will be hosted at the Université de Limoges (UNILIM). This group has long expertise in characterization of biological sludges components (e.g. ExoPolymeric Substances) and their interaction with trace metal(loid)s, leading several projects in this area. He/she will be recruited by UNILIM for a period of 36 months with the aim of obtaining a joint PhD degree between UNILIM and Università degli Studi di Napoli Federico II (UNINA, Naples, Italy).

The M2ex European Joint Doctorate offers to the ESR5 an innovative series of Network-wide training events to ensure a high-quality, engaging and inspirational training environment including secondments in UNINA (Italy) and COGEI S.r.l (Italy).

#### **Objectives**

Many constituents of microbial matrices can interact with metal and metalloids and strongly affect their speciation. For example, cell walls and extracellular polymers can induce sorption or complexation which in turns affect the bioavailability or mobility of the element. The objective of this project will be to characterize the main fractions of the microbial matrix that influence the speciation/distribution of metals and metalloids.

#### **Expected Results**

Isolation and characterization of the microbial matrix fractions that mainly interact with metals/metalloids. Determination of stability constants that could be used to improve the modelisation of metals/metalloids speciation in bio(reactors).

#### **Candidate's profile**

We are looking for a candidate with Analytical/Water Chemistry, Chemical Engineering or Environmental Science Degree with skills or at least strong interest in mathematical modeling

#### **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/October 2020.

**Enrolment in Doctoral degree(s): UNILIM / UNINA**