An early stage researcher (ESR) PhD position is available at the Università degli Studi di Bari Aldo Moro (UNIBA) as part of the Marie Curie Innovative Training Network "PANORAMA"

Ph.D.

Evaluation and characterization of REEs toxicity in aquatic and terrestrial plant models

ORGANISATION/COMPANY		**TYPE OF CONTRACT**	*Temporary*
RESEARCH FIELD		**JOB STATUS**	*Full-time*
RESEARCHER PROFILE	*First Stage Researcher (R1)*	**HOURS PER WEEK**	35
APPLICATION DEADLINE	*15th June - Europe/Brussels or until position is filled.*	**OFFER STARTING DATE**	*As of 01/10/2020*
LOCATION		**EU RESEARCH FRAMEWORK PROGRAMME**	*H2020 / Marie Skłodowska-Curie Actions*

Host institution

Aldo Moro Bari University (UNIBA) is a multidisciplinary institution, with a tradition of excellent research. It is one of the most important public universities in southern Italy with about 45000 students, more than 1500 professors and researchers, 1500 administrative and technical staff, 115 degree courses, 23 departments and 19 courses of PhD with more than 500 students. UNIBA has a dinamic program of student and teacher international mobility, a doctorate program offering courses and activities for PhD students finalized to project management, research activity, publishing, academic English ensuring supervision and training to the students. Biology department has many infrastructures and equipment such as laboratory equipped to study morphological, physiological, genetic and metabolic aspect of plants and living organisms.

Research objectives

The project will provide a comprehensive database on Rare earth elements (REE)-associated effects and potential toxicity across the whole REEs series on different organisms. The goal of the research is the comparative evaluation of toxic effects of single element and/or REE mixtures in plants on the basis of their bioavailability in soils and waters. The effects of some representative REE of selected speciation will be studied in different aquatic and terrestrial plant models grown in controlled condition. Plant growth, cell metabolism parameters and accumulation in tissues will be analysed in order to improve the knowledge of the actual toxicity of single REE.

Presentation of the research project (cooperative aspect)

This PhD position is within the framework of a European ITN project named PANORAMA: EuroPean trAining NetwOrk on Rare eArth elements environMental trAnsfer: from rock to human involving 15 PhD positions.

Under the supervision of Prof. Tommasi Franca e Paciolla Costantino, the PhD student will investigate the responses of plant models to single and/or mixture of Rare Earth Elements.
The project involves a strong collaboration with HAW (Prof. S. Heise) including required research stays (secondment) for aquatic organism bioassays (M12 M16) and UNINA (Prof. M. Guida, Prof. M. Trifuoggi) including required research stays (secondment) for multiple model testing and REE concentrations in plant tissues (M24 M28).
The PhD student will be also involved in scientific/soft-skills meetings and in research activities conducted in other laboratories/companies from Europe and associated countries.
An important component of the training will be the participation to 3 main major **training events**:

WS1-(December 2020) REE as emerging contaminants: Properties, uses and dissemination –Germany-fundamental REE biogeochemistry and currently known anthropogenic REE inputs into the environment.

SS1 (May 2021) - AMD and REE contamination mitigation - Portugal-Management and remediation solutions of AMD in old mining areas and Management of WEEE, recycling areas

WS2 - Colloids and nanoparticles as REE vectors -France- Structural characterization of colloids and nanoparticles by innovative and fine spectroscopic and scattering techniques: X-Ray absorption fluorescence and scattering, light scattering. REE interactions with bearing phases.

SS2 - (Eco)toxicology of REE –Germany- Eco/toxicological concepts and approaches, Physico-chemical properties of REE for bioavailability, ecotoxicity and environmental risk

In addition to these major milestones of the program, the PhD students will 1) continuously develop their **core research skills via their own research project** locally and within the network while at secondments and conferences, 2) receive a mandatory amount of **hard and soft-skills training** specific to their own doctoral school, along with mentoring by joint supervising bodies, 3) use **conferences both as dissemination events for ESRs results and network events for progress reports and evaluations**, and 4) **collaborate into practical activities aimed at network-structuring legacy deliverables.**

PANORAMA's research objective is to elucidate the man-induced environmental dissemination of REE and the associated effects on the environmental health. For that purpose, interdisciplinary approaches are **required** combining geochemistry, ecotoxicology, hydrology, chemical analysis and coupling field monitoring, original in and ex situ experimental set-up and modelling from the element speciation to the environmental impact

PANORAMA's key aim is to **set-up an optimal scientific and non-scientific training to the understanding and forecasting of the environmental impacts of new emerging pollutants such as REE.**

Benefits

With *indicative* financial conditions of the research project (in local currency)

- *3-years full-time employment contract*
- *Attractive salary tuned to living standards of the hosting country. Brut salary, and excluding family and mobility allowance will be around 2900 €*
- *Conditional family allowance of 500 € per month (potentially subject to taxes).*
- *Net mobility allowance of 600 € per month (potentially subject to taxes)*

- Based in Dipartimento di Biologia Università degli Studi di Bari Aldo Moro, with registration in the doctoral course "Biodiversità, Agricoltura e Ambiente", Dipartimento di Scienze del Suolo, della Pianta e degli Alimenti, Università degli Studi di Bari Aldo Moro. Cooperation with leading institutions in Environmental Science in Europe: Hochschule fur Angewandte Wissenschaften Hamburg University (4 months) and Università degli Studi di Napoli Federico II (4 months), with excellent staffs from these institutions and working conditions.

Possibility to collaborate with a large network of international research groups engaged in the ITN

Requirements

The candidate should be in the first four years of their research career. They should not have a doctoral degree and fulfil the eligibility criteria and mobility rule (see below)

The candidate should hold or be about to obtain a Master's degree in Earth Science or Biology, Chemistry, Environmental Sciences or other relevant field.

- Excellent technical skills including experience in responses of plants to abiotic stress.
- Previous experience working with plant culture in laboratory, greenhouse and field or/and plant and cell culture or/and toxicity tests in plants.
- The ability to work both as part of a team, and independently, coupled with excellent communication, organizational and problem-solving skills
- Availability to travel for training events and research secondments.

ELIGIBILITY CRITERIA

Recruiting is in accordance with the European rules for Marie Curie Initial Training Networks. Early-stage researchers (ESR) can be of any nationality. They must be, at the time of recruitment by the host organization, in the first four years (full-time equivalent) of their research careers and have not yet been awarded a doctoral degree. The research career starts after the degree that enables a student to proceed with a PhD (usually, the Master degree).

MOBILITY RULE

At the time of the recruitment by the first host institution, the ESRs must not have resided or carried out their main activity (work, studies, etc.) in the country of their first host institution for more than 12 months in the 3 years immediately before the recruitment date. Short stays such as holidays and/or compulsory national service are not taken into account.

How to apply

Send your complete application before *15th June* **to both contacts below**

(application will remain open until position is filled).

A **single pdf file** needs to be submitted including:

a cover letter, stating your research motivation and interests; including relevant background and career plan (max 1 A4 page)

a Curriculum Vitae, including academic background, previous research and/or industrial experience (max 2 A4 pages)

Degree transcripts (with marks)

English language qualification certificates (or equivalent)

Reference letters: at least 2 confidential reference letters from academics or/and research leader (including name, position and email address of the referee) (max 1 A4 page, with substantiated assessment of the applicant's technical skills, creativity, innovation ability, working capacity, efficiency and level of independence) must be sent directly to the contacts below.

Contacts:

ESR Supervisor: Franca Tommasi (franca.tommasi@uniba.it); Costantino Paciolla (costantino.paciolla@uniba.it)

Recruitment committee: to be completed after the kick-off meeting
Project website: Created by Cordis when grant agreement will be signed