

Open PhD position in Geomicrobiology

‘Nitrate-reducing Fe(II)-oxidizing microbes in a geochemical and mineralogical Mars terrestrial analogue (Rio Tinto, Spain)’

We are seeking a PhD student (geomicrobiologist or microbial ecologist) to investigate nitrate-reducing Fe(II)-oxidizing (NRFeOx) bacteria in the estuary of the Rio Tinto river (Spain). This Fe(III) mineral-rich biosphere characterized by physico-chemical fluctuations will serve as terrestrial analogue for fluvio-lacustrine systems on early Mars. In this project we will use a combination of geochemical, physiological and molecular approaches, including metagenomics and metatranscriptomics, to isolate and characterize NRFeOx microorganisms from anoxic Fe(II)-rich sediments at the estuary and headwaters of the Rio Tinto river and from subsurface core samples collected in the Rio Tinto region. The isolated strains will be identified and their metabolic activity and contribution to Fe(II) mineral oxidation, primary production and N₂O formation will be evaluated. Other techniques used are XRD, Mössbauer spectroscopy and cryo-FIB-SEM.

The candidate will be a member of the Geomicrobiology group and the Microbial Ecology group and given many opportunities to be creative and innovative, to apply state-of-the-art geochemical analyses, microbial physiological studies, molecular ecological (omics), and microscopic techniques, and to work on a challenging and fascinating topic within a large network of (inter)national collaborators.

Start date for successful applicants is summer/fall 2021. Employment (TVL E13, 65%, 3 years) will be arranged by the University of Tübingen. The university seeks to raise the

Requirements:

- Strong background and/or interest in Geomicrobiology and Microbial Ecology
- Ability to work independently and in a team
- Excellent management and communication skills
- Highly motivated for interdisciplinary research
- Good computer and language (English) skills

number of women in research and teaching and therefore urges qualified women to apply. Disabled persons will be preferred in case of equal qualification.

For more information and to apply, please send a CV, motivation letter and overview of techniques and methods previously used by email before April 25th, 2021 to: Prof. Dr.

Andreas Kappler (andreas.kappler@uni-tuebingen.de), Geomicrobiology, Center for Applied Geosciences, University of Tübingen, Germany. <https://uni-tuebingen.de/de/104138>