‘Biomineralization by phototrophic Fe(II)-oxidizers under complex geochemical conditions’

Microbial formation of iron minerals plays a key role in almost all soils, sediments and aquatic habitats yet much of our fundamental understanding of this process comes from unnaturally simple laboratory systems. A fundamental knowledge gap exists as to how mineral-forming bacteria behave under the low concentration, mixed substrate conditions more typical of the natural environment. In this project, we will determine how competing substrates influence rates and extent of iron biomineralization by one of the most metabolically flexible types of mineral-forming bacteria, anoxygenic phototrophic Fe(II)-oxidizers, using state-of-the-art techniques including cryogenic electron microscopy, synchrotron x-ray absorption, in situ spectroscopy, and more. Such processes have implications on the fate of nutrients and contaminants in the environment, greenhouse gas emissions, and are relevant to understanding the role of bacteria on the ancient earth. The successful candidate will join our interdisciplinary and international team at the University of Tübingen, Germany.

Requirements:
- Strong background in (Bio)Geochemistry and/or Mineralogy
- Have a relevant Masters or equivalent degree
- An interest in Geomicrobiology
- Ability to work independently and in a team
- Excellent management and communication skills
- Highly motivated for interdisciplinary research
- Good computer and language (English) skills
- Field work experience is highly beneficial

Start date for successful applicants is late 2019. Employment (TVL E13, 65%, contract length 3 years) will be arranged by the University of Tübingen. The university seeks to raise the number of women in research and teaching and therefore urges qualified women to apply. People with disabilities and candidates 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 June 15th 2019 to: Dr. James Byrne (james.byrne@uni-tuebingen.de), Geomicrobiology, Center for Applied Geosciences, University of Tübingen, Germany.  
https://uni-tuebingen.de/de/104138