

08.08.2017

## Research associate positions (wissenschaftliche/r Mitarbeiter/in) in the field of microparticles in the aquatic environment

The Technical University of Munich (TUM) has openings for research associates (60% - 75% TV-L 13) in the area of "microparticles in the aquatic environment" starting in October 2017. The positions are part of a research initiative coordinated at TUM. The open positions are embedded in a collaborative consortium at TUM involving the Chairs of Aquatic Systems Biology, Animal Physiology & Immunology, Urban Water Systems Engineering, Analytical Chemistry and Water Chemistry, Food Chemistry and Molecular Sensory Science and Food Packaging Technology. This offers the opportunity to interact with scientists active in different disciplines and/or cultures.

### Available positions

We are looking for motivated applicants in organic and environmental chemistry, analytical and water chemistry, environmental engineering, microbiology, biology, ecotoxicology or similar areas. A recent MSc degree in the respective field is required. Suitable candidates have scientific research skills, outstanding communication skills and a teamwork attitude. First candidate selection will be performed based on the excellence of the CV. Selected candidates will be then invited for an interview at TUM.

Applications are desired for the following thematic fields:

**Topic I** – Analytical procedures for identification and quantification of microparticles in environmental samples and food, preparation of reference materials.

This includes the identification of suitable reference materials, method development for extraction of polymer particles from complex matrices (sediments, tissue, food items), method development for quantitative and qualitative analysis of polymers and the development and optimization of procedures for monitoring of microparticles.

Applicants for this topic should be experienced in the field of analytical and water chemistry (Raman and FTIR Spectroscopy, Field-Flow Fractionation, Scanning Electron Microscopy). Knowledge of polymers and their characterization, particle technology, physico-chemical interactions between polymeric and liquid phases and determination of surface energy is desired.

**Topic II** – Behavior of microparticles in the aquatic environment

This includes investigating the interaction of microparticles with organic solids and biofilms, determining ageing and degradation dynamics of microparticles, the characterization of particle surface/structure activity relationships and migration of additives and contaminants.

Applicants for this topic should be experienced in analytical techniques including chromatographic methodologies and mass spectrometry. Experience in pyrolysis GC/MS and environmental fate modelling would be advantageous but is not mandatory.

**Topic III** – Effects in the aquatic environment

This includes ecotoxicological bioassays to determine uptake and depuration of microparticles in benthic and pelagic organisms, effect assessment with a focus on sublethal endpoints, the determination of bioavailability and bioaccumulation/-magnification potential depending on particle characteristics as well as transcriptome analysis and biomarker development.

Applicants for this topic should be experienced in performing ecotoxicological bioassays, behavioral analysis and molecular analysis (RT-qPCR, RNA sequencing).

**Topic IV** - Effects of microparticles in the gastro intestinal tract (GIT)

This topic includes the establishment of GIT cell culture models and bioassays to determine the uptake and depuration of microparticles in the GIT, and to determine the bioavailability or accumulation. Cell integrity, cell morphology and cellular tight junction integrity will be investigated.

Applicants for this topic should be experienced in performing advanced cell culture technologies, histological methods, and high throughput molecular analysis like RNA sequencing technologies and RT-qPCR.

**We provide**

A researcher position with a salary in accordance with the German state regulated public service salary scale (TV-L E13). The positions are intended for the preparation of a PhD thesis. We offer excellent working conditions and a state-of-the-art infrastructure in a highly dynamic environment.

TUM is an equal opportunity employer. TUM aims to increase the proportion of women and therefore particularly welcomes applications by women. Applicants with severe disabilities will be given priority consideration given comparable qualifications.

**Application**

Please file your complete application via Email to [aquasys@tum.de](mailto:aquasys@tum.de).

Applications should include a i) a full CV, ii) a short statement of research interests and experience, and iii) two letters of reference (or contact information of potential references). In the application the relevant topic(s) (I, II, III, IV) should be indicated. Starting date is October 2017, but applications will be accepted until the position are filled.

For applications / more information please contact:

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