# Postdoc position

## Photocatalytic Membrane Processes for the Removal of Trace Pollutants in Water Reuse

**Project**

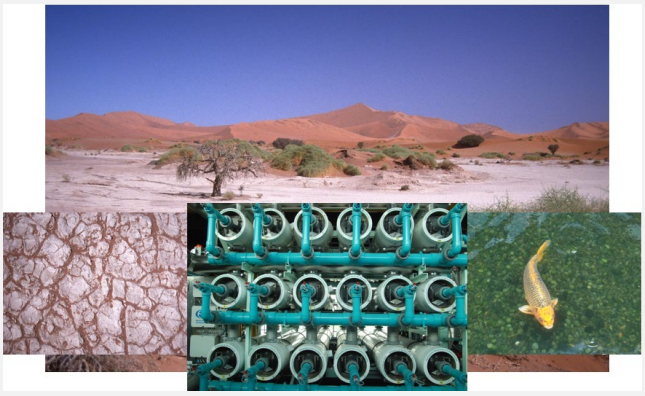
This Postdoc position builds on ongoing research projects in the area of Photocatalytic Membrane processes for the removal of trace pollutants during water reuse. The main aim of this project is to fabricate photocatalytic membranes (both polymeric and ceramic in nature) and extend its applications in environmental monitoring and remediation.

The research is carried out on several projects including collaboration with i) the University of Namibia, ii) the National Tsing Hua University in Taiwan and iii) several industry partners.

The project is developed with the following objectives, i) design and set-up of an photocatalytic membrane filtration system, ii) develop a suitable membrane with good photocatalytic properties and long term stability, iii) study the effectiveness of this membrane for the removal of micropollutants where firstly steroid hormones are investigated while new groups of contaminants will be explored.

This research will investigate the following research questions;

- Which kind of photocatalytic membranes and process configurations are suitable in water reuse application?
- How to determine the chemical stability of the photocatalytic membrane?
- What are the mechanisms involved in trace pollutant removal in photocatalytic membrane filtration?



Further, the postdoc will be responsible for process development, setup and control of this membrane filtration system in the laboratory as well as in depth material characterization working with workshops, industry partners, collaborating institutes and suppliers.

At postdoctoral level the preparation of research proposals and publications, participation in team responsibilities and activities as well as the supervision of students is a key requirement. Management of the funded projects involves the preparation of reports, budget controls and organization of project meetings. Throughout the project, there will be additional opportunities for cooperation with internal and external partners, team events, as well as contributing to (a minimal amount of) teaching.

**Qualifications**

You will hold a PhD in Chemical, Process, Environmental Engineering, or equivalent. You are a naturally curious person who is eager to learn more and has a strong interest in research. Experience with membrane filtration and photocatalytic systems (of any scale) is a definite advantage, as well as being comfortable in specifying system components and sound experimental problem solving skills, water analysis and micropollutant experience – as well as good common sense. Excellent English language proficiency is essential, basic German language skills of advantage. Willingness to travel to Namibia and Taiwan for project meetings as well as a valid driver's licence is required.

**KIT**

KIT is one of the biggest research institutions worldwide and has access to state-of-the-art research facilities resulting from the merger of the National Research Centre of the Helmholtz Association and the former Technical University of Karlsruhe. This project is hosted by the new Institute for Advanced Membrane Technology (IAMT).

**Position details**

TvOD E13 100% for 3 years

**Contact**

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**Applications**

Please send applications with cover letter addressing position requirements, CV, publication list and your contribution to the publication (if relevant), academic transcripts, degree certificates, contact details for three references and a preliminary research proposal to the above contact(s).

**Closing date: 31 July 2021 (or later when filled)**