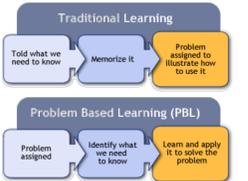


INTERNATIONAL CONCEPTS OF WATER TECHNOLOGIES

- ◆ Bachelor Wahlpflichtfach VL 22644
- ◆ Innovative concept of problem based learning
- ◆ Lectures & impulse lectures as topic introduction
- ◆ International desalination/water reuse project
- ◆ Team work with one tutor for every 2 projects
- ◆ Workshop presentation and report as 'exam'



GRADUATE ATTRIBUTES

- ◆ Membrane technology example as state-of-the-art water treatment technology
- ◆ Confidence in technical English
- ◆ Literature search and management (Endnote)
- ◆ Industrial design software
- ◆ Report Writing and oral Presentation
- ◆ Industry relevance/real world example

- ◆ WATER-ENERGY NEXUS
- ◆ INTERNATIONAL DEVELOPMENT
- ◆ RELEVANCE TO INDUSTRIAL APPLICATIONS

PROJECTS RELEVANT TO GLOBAL CHALLENGES

- ◆ Masters/Bachelor/Study Project/HIWI/PhD & postdoc projects adjusted to student interests
- ◆ Visit <http://mt.ifg.kit.edu/24.php> for current opportunities or notice board CS Bldg 10.91

 <p>Diplomarbeit / Masters Project</p> <p>Project Summary: PhD research project on photocatalytic degradation of microplastics. The project focuses on the development of a photocatalytic process for the degradation of microplastics in water. The project involves the synthesis of photocatalytic materials, their characterization, and their application in the degradation of microplastics. The project is supervised by Prof. Dr.-Ing. Andrea Iris Schäfer.</p> <p>Required Skills: Knowledge in photocatalysis, material synthesis, and analytical chemistry. Proficiency in English is required.</p> <p>Start Date: To be determined.</p> <p>Application Deadline: To be determined.</p> <p>Contact: Prof. Dr.-Ing. Andrea Iris Schäfer, andrea.iris.schaefer@kit.edu</p>	 <p>Diplomarbeit / Masters Project</p> <p>Project Summary: Evaluation of contaminants removed by novel bio-inspired membranes (BIM) membranes. The project focuses on the development of a bio-inspired membrane for the removal of contaminants from water. The project involves the synthesis of BIM membranes, their characterization, and their application in the removal of contaminants. The project is supervised by Prof. Dr.-Ing. Andrea Iris Schäfer.</p> <p>Required Skills: Knowledge in membrane technology, material synthesis, and analytical chemistry. Proficiency in English is required.</p> <p>Start Date: To be determined.</p> <p>Application Deadline: To be determined.</p> <p>Contact: Prof. Dr.-Ing. Andrea Iris Schäfer, andrea.iris.schaefer@kit.edu</p>	 <p>Diplomarbeit / Masters Project</p> <p>Project Summary: Membrane removal of pharmaceuticals using proton-exchange membranes (PEM). The project focuses on the development of a PEM membrane for the removal of pharmaceuticals from water. The project involves the synthesis of PEM membranes, their characterization, and their application in the removal of pharmaceuticals. The project is supervised by Prof. Dr.-Ing. Andrea Iris Schäfer.</p> <p>Required Skills: Knowledge in membrane technology, material synthesis, and analytical chemistry. Proficiency in English is required.</p> <p>Start Date: To be determined.</p> <p>Application Deadline: To be determined.</p> <p>Contact: Prof. Dr.-Ing. Andrea Iris Schäfer, andrea.iris.schaefer@kit.edu</p>
 <p>Diplomarbeit / Masters Project</p> <p>Project Summary: Research of water and membrane fouling (MFM) membranes under varying conditions. The project focuses on the development of a membrane for the removal of fouling from water. The project involves the synthesis of MFM membranes, their characterization, and their application in the removal of fouling. The project is supervised by Prof. Dr.-Ing. Andrea Iris Schäfer.</p> <p>Required Skills: Knowledge in membrane technology, material synthesis, and analytical chemistry. Proficiency in English is required.</p> <p>Start Date: To be determined.</p> <p>Application Deadline: To be determined.</p> <p>Contact: Prof. Dr.-Ing. Andrea Iris Schäfer, andrea.iris.schaefer@kit.edu</p>	 <p>Diplomarbeit / Masters Project</p> <p>Project Summary: Synthesis and characterization of novel PEG-coated membranes for water treatment applications. The project focuses on the development of a PEG-coated membrane for the removal of contaminants from water. The project involves the synthesis of PEG-coated membranes, their characterization, and their application in the removal of contaminants. The project is supervised by Prof. Dr.-Ing. Andrea Iris Schäfer.</p> <p>Required Skills: Knowledge in membrane technology, material synthesis, and analytical chemistry. Proficiency in English is required.</p> <p>Start Date: To be determined.</p> <p>Application Deadline: To be determined.</p> <p>Contact: Prof. Dr.-Ing. Andrea Iris Schäfer, andrea.iris.schaefer@kit.edu</p>	 <p>Diplomarbeit / Masters Project</p> <p>Project Summary: Development and characterization of novel PEG-coated membranes for water treatment applications. The project focuses on the development of a PEG-coated membrane for the removal of contaminants from water. The project involves the synthesis of PEG-coated membranes, their characterization, and their application in the removal of contaminants. The project is supervised by Prof. Dr.-Ing. Andrea Iris Schäfer.</p> <p>Required Skills: Knowledge in membrane technology, material synthesis, and analytical chemistry. Proficiency in English is required.</p> <p>Start Date: To be determined.</p> <p>Application Deadline: To be determined.</p> <p>Contact: Prof. Dr.-Ing. Andrea Iris Schäfer, andrea.iris.schaefer@kit.edu</p>

PhD

PhD Position (Doktorarbeit)

Project: The PhD project focuses on the development of a membrane for the removal of contaminants from water. The project involves the synthesis of a membrane, its characterization, and its application in the removal of contaminants. The project is supervised by Prof. Dr.-Ing. Andrea Iris Schäfer.

Required Skills: Knowledge in membrane technology, material synthesis, and analytical chemistry. Proficiency in English is required.

Start Date: To be determined.

Application Deadline: To be determined.

Contact: Prof. Dr.-Ing. Andrea Iris Schäfer, andrea.iris.schaefer@kit.edu

Postdoctoral researcher position: Engineering of photocatalytic-powered water-treatment systems

Project: The project focuses on the development of a photocatalytic-powered water-treatment system for the removal of contaminants from water. The project involves the synthesis of a photocatalytic material, its characterization, and its application in the removal of contaminants. The project is supervised by Prof. Dr.-Ing. Andrea Iris Schäfer.

Required Skills: Knowledge in photocatalysis, material synthesis, and analytical chemistry. Proficiency in English is required.

Start Date: To be determined.

Application Deadline: To be determined.

Contact: Prof. Dr.-Ing. Andrea Iris Schäfer, andrea.iris.schaefer@kit.edu

Masters & Bachelors

Postdoc/Group Leader

STATE-OF-THE-ART FACILITIES

- ◆ **Process Engineering Laboratory:** nanofiltration, electrodialysis, photocatalytic membranes, solar powered systems
- ◆ **Water Analysis & Radiotracer Laboratories:** full characterization of waters before and after treatment (nanoparticles, organic matter, ions, micropollutants)
- ◆ **Membrane Manufacturing & Characterization Laboratory**



DYNAMIC RESEARCH TEAM

- ◆ English language research team
- ◆ Multi-cultural background and mobility
- ◆ Structured supervision with regular group meetings, seminars and in-depth feedback
- ◆ Transdisciplinary team work
- ◆ Publication focused work from masters project through to academic independence
- ◆ International recognition and extensive network



OPPORTUNITIES

- ◆ International collaboration and travel opportunities
- ◆ Field work in remote locations (Australia, Ghana, Tanzania with many other opportunities)
- ◆ Research exchange sabbaticals
- ◆ International projects and conferences
- ◆ Career opportunities & scholarships



NEW LABORATORIES

INTERNATIONAL TEAM

TRAVEL & CAREER