Diplomarbeit / Masters Project

Project Summary:	**Micropollutant removal using photosensitizer-assisted membranes** In the modern world, the course to sustainable development is more than ever vibrant. In this regard, the concept of using a sunlight for chemical transformations is a hot topic. The research field of photocatalysis continues to grow and attract significant research interest. However, the removal of micropollutants from water is a global challenge. This has led to the development of a number of hybrid processes, including photocatalytic membrane reactors. This master thesis is mainly experimental and based on the combined knowledge of several scientific fields such as catalysis, photochemistry, and environmental engineering. While working with the cutting-edge characterization methods applied in the group of Prof. Schäfer, you will also obtain an overview working experience with each of them.

The following tasks are to be performed:

- Literature review on the current status of these scientific fields;

- Conduct degradation experiments of trace amounts (ng/L) of micropollutants using an existing photocatalytic filtration set-up;

- Separation of the mixtures of pollutant by-products using a liquid chromatography method;

- Data analysis and scientific writing (contribution to the writing of a paper)
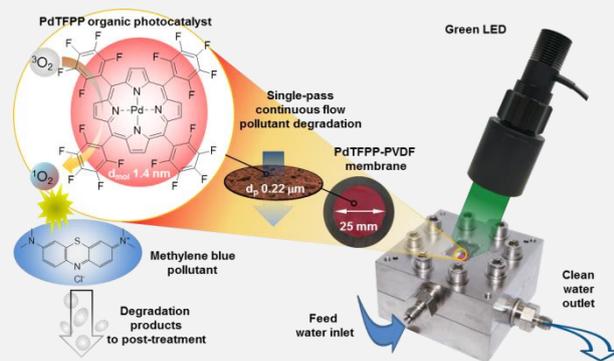
Required Skills:	**Studies in Chemical/Process Engineering or equivalent (Uni, TH)** Lab work experience, in particular water quality & analysis Knowledge in the field of catalysis, organic chemistry, membrane technology Desirable knowledge of principles of HPLC separation Evidenced writing skills in English language Confident use of Origin Labs software for data analysis and graphing
Institute/Dept:	Institute for Functional Interfaces (IFG) / Membrane Technology Department c/o KIT Campus North
Start Date:	To be discussed
To apply:	Email CV, transcripts and motivation letter with available time period for evaluation.
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