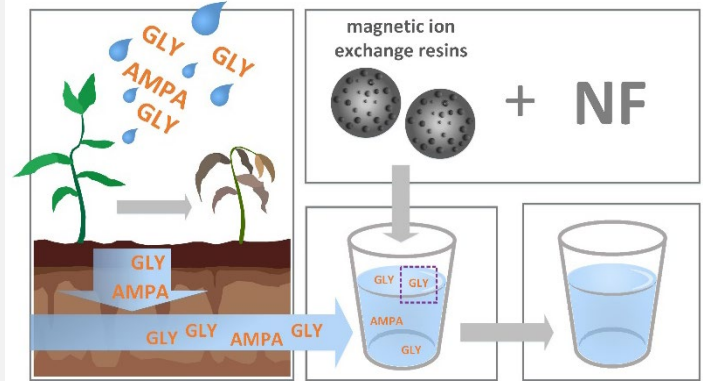


## Project

Chemicals for weed control applied to plants cultivated for food are commonly used in agriculture. Despite numerous controversies and a drive to encourage organic farming practises, organophosphate herbicides, including glyphosate (GLY, also known as Roundup) and its main metabolite (aminomethylphosphonic acid, AMPA) have recently been extended for continued use in the EU. However, water contamination with pesticide residues increases global concerns since it adversely affects human health and ecosystems. The EU has set the limit for GLY concentration in water at 0.1 µg/L. Over the years, multiple methods have been applied to remove GLY and AMPA from water.



This Master's project relates to an ongoing research project at IAMT in the area of organophosphorus pesticide removal by hybrid systems based on magnetic ion exchange resins with membrane techniques.

The aim of this project is to develop a hybrid experimental protocol based on magnetic ion exchange resins with membrane techniques for organophosphorus pesticide removal. Specific project tasks are:

- ◆ Literature review on the topic (occurrence of organophosphorus pesticides in surface waters, GLY and AMPA properties, etc.),
- ◆ Performing filtration experiments and assisting in quantifying trace amounts of GLY and AMPA in water samples,
- ◆ Analyzing experimental data, writing/co-authoring a research publication (in English), and taking part in IAMT team activities.

## Qualifications

The project is the final research project in a Master's degree. The candidate will be studying for a Master's in Chemical, Process, Environmental Engineering, or equivalent, and is naturally curious, eager to learn, and has a strong interest in research. Basic knowledge of water chemistry, water treatment processes, and membrane technology is essential. Evidence of writing skills in English language, ability to learn/use OriginLab for data analysis/graphing as well as EndNote for literature management, and the willingness to lead or contribute to writing a scientific publication are a must.

## KIT

KIT is one of the biggest research institutions worldwide and has access to state-of-the-art research facilities. This project is hosted by the relatively new Institute for Advanced Membrane Technology (IAMT) in new laboratories and state-of-the-art equipment. IAMT is part of the Division Earth and Environment at KIT and the Faculty of Chemical and Process Engineering. The research team is international and the language is English (oral and written communication)

## Contact

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## Applications

Please send applications with CV, motivation letter interests and preferred start date, academic transcripts, and degree certificates.

## Start Date

Flexible/negotiable.