



Institute for Automation and Applied Informatics (IAI)

## Master's Thesis Development of an optical system for imaging microplastics in water samples

The goal of this Master's thesis is the development and optimization of an automated system for microplastic detection. Various flow cells will be designed, tested, and integrated to enable reliable particle identification. The work includes experimental investigations into the efficiency and compatibility of the components, as well as the evaluation of different setup and control concepts. This thesis offers the opportunity to contribute to an innovative solution addressing an urgent environmental issue.



## Tasks:

- · Research into the state of the art
- Concept development
- · Design and integration
- · Validation and evaluation

## Education, experience, and skills:

- · High motivation and ability to work independently
- Interest in optics and automation
- Experience with Python
- Thesis can be written in German or English

[1] https://www.forschung-und-lehre.de/forschung/mikroplastik-verteilt-sich-auch-ueber-die-luft-1691

Leonard Saur, M.Sc. Prof. Dr. Christian Pylatiuk E-mail: leonard.saur@kit.edu Institute for Automation und Applied Informatics (IAI) Karlsruhe Institute of Technology, Campus North Hermann-von-Helmholtz-Platz 1 76344 Eggenstein-Leopoldshafen



Image: Picture of a microplastic particle size < 300Micrometer