

## Bachelor or master Thesis/Internship (SS 2023)

### Engineering of plastic degrading enzymes

#### Description

Synthetic polymers are versatile materials used in different areas of our daily life, but they are not widely recycled in regular recycling processes because of the difficulties in treatment and the generated by-products toxicity. Therefore, enzymatic degradation by enzymes rises as a promising alternative for environmental impact reduction of “plastic” waste. An essential problem in using available polymer degrading enzymes is their low compatibility with industrial processes conditions, and protein engineering of plastic degrading enzymes represents a promising approach to overcome this obstacle.

#### What we offer/Techniques you will learn

In the project, you generate plastic degrading enzymes and evaluate improved variants. In this process, you will learn different techniques in microbiology (e.g., handling of *E. coli* and *P. pastoris*), molecular biology (e.g., gene cloning, PCR, DNA extraction, electrophoresis, and quantification), and biochemistry (enzymatic assays in 96-plate format, enzymatic assay on polymeric and enzyme characterization via quartz crystal microbalance with dissipation (QCM-D)). You will enjoy working in a professional and international biotechnological environment with close industrial cooperation and focusing on re-engineering industrial relevant enzymes.

#### Qualifications

- Bachelor/Master student (f/m) in the field of biotechnology, biology, chemistry, or related
- Confident in using MS Office programs
- Good knowledge of English (spoken and written)
- Creativity, flexibility, high motivation, and strong commitment

**Estimated time:** According to “Studienordnung”

Applications will be considered until a proper candidate is found

#### Contact

Francisca Contreras

Lehrstuhl für Biotechnologie, Worringer Weg 3, 52074 Aachen

Room 4.136

Phone: +49 241 80 20676

E-Mail: [f.contreras@biotec.rwth-aachen.de](mailto:f.contreras@biotec.rwth-aachen.de)