



(Micro)plastic degradation

ACIB HAS DEVELOPED

i) standardized and rapid enzyme based tests for the investigation of (bio) polymer biodegradability and ii) enzymes for the fully natural degradation of different plastics such as PET, PU, etc. This allows for novel recycling approaches, as well as novel solutions for microplastic in wastewater treatment facilities.

BACKGROUND

400 million tons of plastics are being produced per year. The majority of it is not recycled, but burned, processed into low-grade plastics or ends up in the environment, where it can take centuries to degrade, accumulate in the food chain and poses an immense concern.

TECHNOLOGY

1) acib offers standardized and novel rapid enzyme based procedures for the investigation of biodegradation of synthetic and bio-based polymers in a range of different environments including (anaerobic) composting, aqueous systems (rivers, lakes, ...), animal digestion models and others. Structurally different model substrates are synthesized and labelled to elucidate the influence of chemical composition and environmental factors onto biodegradation.

2) acib develops advanced enzymes for natural degradation of various synthetic and bio-based polymers into their building blocks. With different enzymes it is possible to fully degrade even composite materials consisting of e.g. PET (polyethylene terephthalate), PU (polyurethane), etc. It is possible to develop a novel process for polymer-recycling without prior need of plastic being sorted.



Foto: www.pikabay.com

OUR OFFER

acib seeks investors and industrial partners to develop this technology to commercial scale. Under protection of a CDA/NDA we provide you with details on bioleaching and bioremediation opportunities. Any IP developed in a joint project would fully belong to the investor/industrial partner.

EXPERTS

Prof. Dr. Georg Gübitz
Dr. Doris Ribitsch

AVAILABLE FOR

- Joint Research Project
- Contract Research
- Investment

DEVELOPMENT STATUS

Technology Readiness Level 3-5
(Technology validated in lab)

IPR

Will be generated for our industrial partner / investor

KEYWORDS

- Microplastic
- (Bio)Polymers
- Enzymatic degradation
- Biodegradation
- Enzyme engineering

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