



Bachelorthesis/Masterthesis/Internship

Immobilization of Proteins to Magnetic Nanoparticles

Keywords: Process Intensification - Magnetic Nanoparticles – Immobilization

Project Description

In this research project, genetically optimized *E. coli* strains expressing different extracellular high-value proteins will be used to establish different concepts of process intensification.

The focus of this work will be the development of a protocol for the immobilization of an industrial-relevant enzyme to functionalized magnetic nanoparticles. Therefore, different parameters need to be investigated like:

- Effect of different buffers on immobilization
- Incubation times
- Particle to protein ratio
- Reusability
- Remaining activity after immobilization
- Application to relevant use cases

Your Tasks/Methods

- Production & purification of the enzyme with *E. coli*
- Determination of enzymatic activity
- Functionalization of particles
- Analytics
 - SDS Page
 - Various assays
- Magnetic nanoparticles

Your Profile

- Independent and structured way of working
- Experience with laboratory work
- Student in the field of biotechnology, biochemical engineering chemistry or similar

Contact

Start: From now

Language: German/English

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