

Master's/ Semester Thesis

Techno-Economical Analysis of High-Gradient Magnetic Separation (HGMS) through Modular Cost Modeling

Keywords: HGMS, Magnetic Separation, Nanoparticles, Techno-Economics

Project Description

High-Gradient Magnetic Separation (HGMS) is a cutting-edge technique predominantly used for the separation of biomolecules from complex mixtures. This method is particularly effective in isolating specific proteins such as antibodies, and nucleic acids, thereby playing a crucial role in biopharmaceuticals and diagnostics. By leveraging magnetic fields, HGMS offers high selectivity and efficiency, making it an attractive option for biomolecular separation in various industrial applications. However, despite its technical advantages, the economic aspects of HGMS have not been thoroughly explored, which is the focus of this thesis project.

The primary objective of this research project is to develop a modular cost model based on a dummy process to evaluate the economic feasibility and efficiency of HGMS in various industrial applications.

Please send your application along with your CV and current grade transcript to the email address below.

Research objectives

1. Comprehensive literature review on HGMS and existing economic models
2. Develop a dummy process
3. Create a modular cost model
4. Assess the economic feasibility of HGMS

Profile

- Structured and independent work
- Creativity and craftyness
- Bioprocess-, Chemical-, Mechanical-, Medical-, Industrial-, engineering, or similar

Ideal, but not required:

- Lab experience

Start: flexible

