

## Master's or Bachelor's thesis / Internship

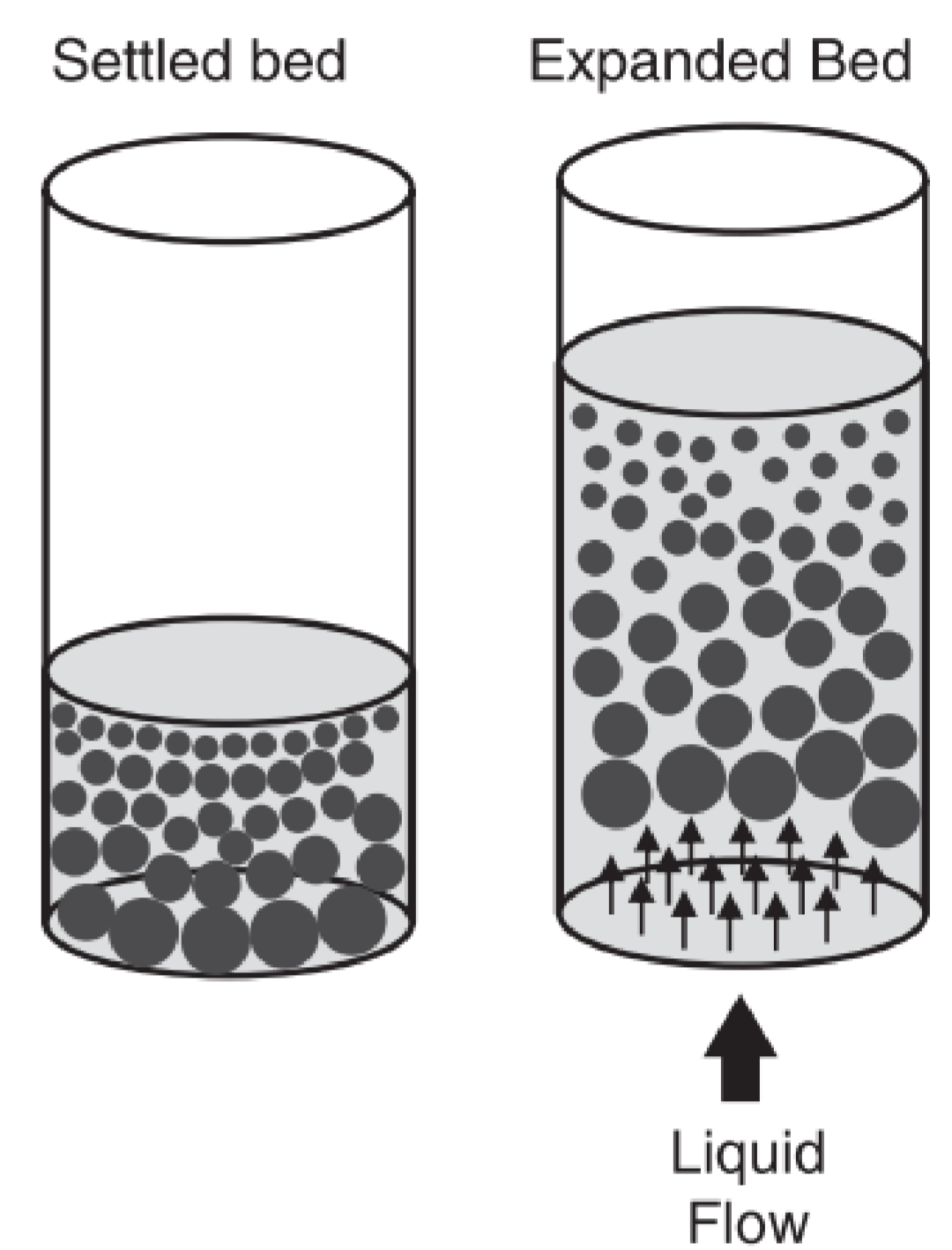
# Purification of HR4-tagged protein through silica-based expanded bed chromatography (EBC)

Keywords: HR4-tag – Expanded Bed Chromatography – DSP – Method development

### Project Description

The EBC was introduced at the beginning of the 1990s and combines the unit operations clarification and capture of downstream processing. Unlike a commonly packed column, the particles will be fluidized through an upward-flowing liquid stream in a vertically arranged column. Therefore, the void volume will be large enough to purify protein from a crude feedstock. It has been shown that HR4-tagged protein can be purified in a chromatographic workflow with silica particles.

The objective of this study project is to develop a new method for purifying HR4-tagged protein from crude feedstock using silica-based expanded bed chromatography.



Koppejan et al. (2018), DOI: 10.1002/jctb.5595.

### Profile / further Information

- Independent and structured way of working
- Team player
- Experience with laboratory work is of advantage
- Student in the field of biotechnology, biochemistry, chemistry or similar
- Student enrolled at TUM

- Start: From January 2026
- Location: Garching
- Language: German/English

### Possible tasks

- Optimization of binding/elution buffers
- Evaluation of static/dynamic binding capacities
- Working with an ÄKTA system
- Analytical methods: BCA-assay, UV-Vis absorption, fluorescence, SDS-PAGE
- Protein purification with a packed silica-based chromatography column
- Protein purification with silica-based EBC
- Researching of suitable silica particles

### Contact

Nadja Kohn | [n.kohn@tum.de](mailto:n.kohn@tum.de) | Chair of Bioseparation Engineering | Room MW 3433