



Prof. Dr. rer. nat. et Ing. habil.

Kerstin Eckert

Kontakt: Behnam Keshavarzi

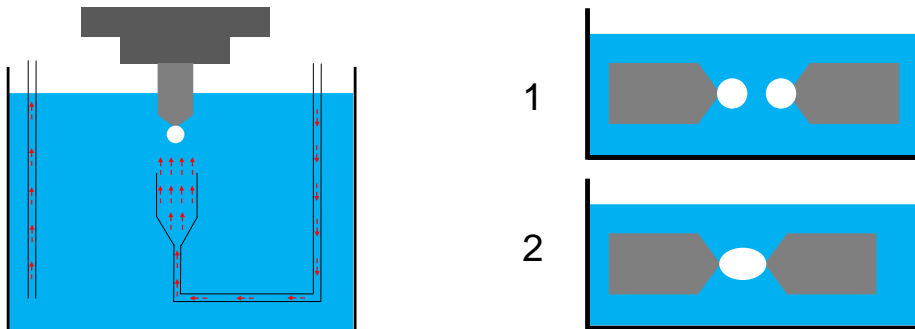
Telefon: 0351 463-42447

E-Mail: b.keshavarzi@hzdr.de, behnam.keshavarzi@tu-dresden.de

Protein adsorption on bubbles in flow field

Master theses / Diploma theses / Compulsory Internship

Many of the water-soluble proteins bear hydrophobic sites on their structure. This is the reason that they adsorb on the air-water interface and make foams. Here, we aim to study the adsorption of proteins in the flow field in the capillary pressure method. Here, we apply flow on a bubble held on a capillary tip and measure the surface tension changes during the flow. The capillary pressure method measures the pressure difference inside and outside of the bubble and is a robust method for surface tension measurement. In the next stage, the coalescence of two bubbles, which are pre-loaded with protein, is studied using the DBMM setup. DBMM consists of two ODBAs and can measure the pressure inside the both bubbles and the pressure inside the new bubble after the coalescence.



We aim to investigate:

- Dynamic surface tension changes of the bubble in the flow field.
- The adsorption change after the coalescence of the two bubbles.

Experimental methods:

- Oscillating drop and bubble apparatus (ODBA)
- Drop and bubble manipulating method (DBMM)

The experimental methods can give you good insights in interfacial phenomena that is important in many industrial areas such as mineral processing, water purification, pharmaceuticals, cosmetics, painting and so on.

Requirements:

- Study in process engineering, chemical engineering (or comparative field of study)
- Motivation, interest in this field of research, experimental experience

Conditions:

- duration min. 6 month, start: from 1st November, workplace: TU Dresden and HZDR

Postadresse (Briefe)
TU Dresden, 01062 Dresden
Postadresse (Pakete u.ä.)
TU Dresden
Helmholtzstraße 10
01069 Dresden

Besucheradresse
Sekretariat:
Helmholtzstr. 14
Merkel-Bau
EG, Zi. 17

Internet
[https://tu-dresden.de/
ing/maschinenwesen/ifv
u/tpg](https://tu-dresden.de/ing/maschinenwesen/ifv/u/tpg)
www.hzdr.de

