



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

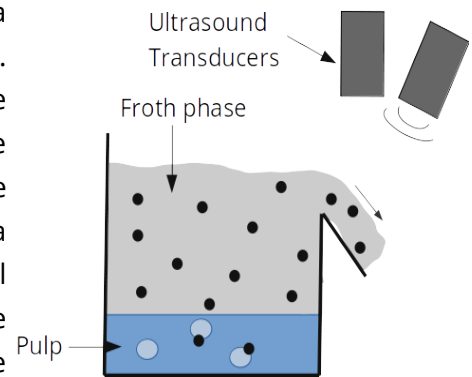
Kerstin Eckert

Kontakt: Leon Knüpfer
Telefon: 0351 463-42447
E-Mail: L.knuepfer@hzdr.de

Characterizing overflowing froth using ultrasonic reflectometry

Beleg / Bachelor Thesis / Master Thesis / Diplomarbeit / SHK

Froth flotation is a widely applied process in the separation of materials. There, the froth phase which consists of foam with particles has a tremendous impact on the overall process performance. An efficient control in such processes requires suitable measurement systems. However, resulting from the opaque nature of such multiphase systems, on-line monitoring of the froth in industrial settings displays a major challenge and is mostly done by means of optical systems. As an alternative for froth characterization, the use of acoustic measurements could provide a simple solution. It was observed, that a sound wave which is sent towards the froth/air interface will be reflected and the strength of the reflected signal contains information on the froth composition. This has the potential for advanced measurement systems. In the next step, a deeper understanding of the relationship between reflected signal strength and the froth composition is required. Additionally, the influence of the froth surface has to be studied in more detail. The work aims at investigating this relationship and the influencing parameters in a laboratory flotation cell.



Basic measurement principle of the ultrasonic technique.

Working packages:

- Conducting laboratory scale flotation experiments with parallel ultrasonic measurements
- Characterizing the froth and froth surface including image processing
- Post-processing the ultrasonic signals

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/
ifvu/tpg](https://tu-dresden.de/ing/maschinenwesen/ifvu/tpg)
www.hzdr.de

