

FineFuture

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FINE FUTURE PRESENTED AT PROCESSNET

Multiphase flows are an important area of research for various industries, including froth flotation. Therefore, the ProcessNet, a German platform for process engineering, chemical engineering and technical chemistry, annually hosts a conference to bring together experts in the field to discuss and exchange knowledge and present their research and application results to a broad audience.

On 21 and 22 February 2022, ProcessNet organised an online event with 160 attendees. This year members of FineFuture, PhD candidate Anna Sommer and her supervisor Kerstin Eckert, joined the online event to talk about the impact of the turbulence on the bubble-particle interaction. Turbulence is essential to enhance the flotation of fine particles because it increases the collision frequency. Therefore, they developed a novel measurement method to investigate the collision between bubbles and particles under turbulent conditions. The results were compared with available numerical models, showing possible limitations of the previous models. This new insight improves our understanding of the interaction between rising bubbles and fine particles and helps forecast recovery and grade in froth flotation.

Anna and Kerstin presented their work during the “bubbly flows” session. The audience well-received their work. Currently, the authors are preparing a publication about the topic titled “Particle-bubble collisions in a turbulent flow”.

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FINE FUTURE PARTNERS:

COORDINATE BY: 

PARTNERS:



Conclusion and Outlook

- Modeling of froth flotation → Modeling collision frequency
- Limited available models and validation data
- Solution? 4D PTV to experimental investigation of collision frequency
- Comparison models vs. experiment

$$\frac{dN_p}{dt} = -Z_{pb} E_{coll}$$

