

# FineFuture

NOVEMBER 2021 #14

## FINE FUTURE PRESENTED AT THE MULTIPHASE FLOW WORKSHOP

Multiphase flows are an important area of research for a variety of industries, including flotation. Helmholtz-Zentrum Dresden-Rossendorf (HZDR) annually hosts the Multiphase Flow Workshop to bring together experts of the field to discuss and exchange knowledge and present their research and application results to a worldwide audience.

This year members of FineFuture, PhD candidate Mazen Draw and his supervisor Roland Rzehak, joined the online event to discuss the numerical validation of a hydrodynamic model that describes the gas-solid-liquid flow in a bubble column. The hydrodynamic model is an essential part of the flotation system model, which is the primary motivation behind the work. The model combines previously well-validated gas-liquid and solid-liquid baseline models in addition to a turbulence model for the liquid phase. Using the hydrodynamic model, preliminary results that are already in good agreement with experimental data could be obtained.

Mazen and Roland presented their work during the poster session. The audience well-received their work, and their poster won second place for best poster design. Currently, the authors are preparing a publication about the topic titled "Euler3 Simulation of Gas-Solid-Liquid Slurry Bubble Column".

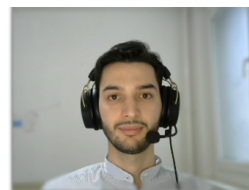
Funded under H2020-EU  
Overall budget: € 6 195 022,50  
EU contribution: € 6 195 022,50

Grant agreement ID 821265  
Start date: 1 June 2019  
End date: 31 May 2022

### FINE FUTURE PARTNERS:

COORDINATE BY: 

### PARTNERS:



## FROTH FLOTATION

### MOTIVATION

- Process of selectively separating valuable materials (hydrophobic) from gangue (hydrophilic):
  - Paper recycling (de-inking)
  - Wastewater treatment
  - Mineral processing
- Prediction of three-phase flow hydrodynamics is necessary for creating a CFD flotation system model

