

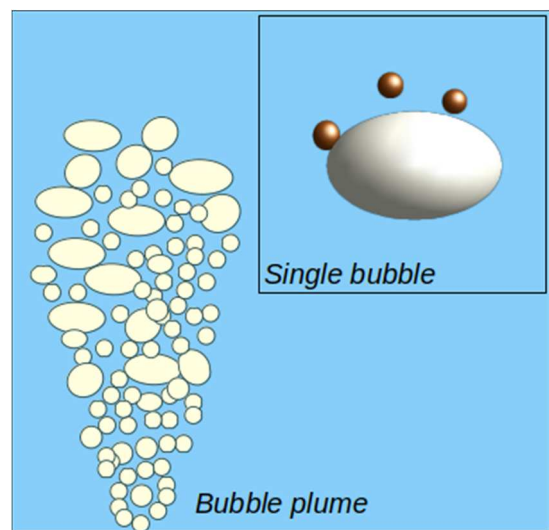
Open PhD position in

Multiphase CFD simulation of bubbly flows and flotation for clean steel production

The **Department of Particulate Flow Modelling (PFM)** at the Johannes Kepler University Linz, Austria, and **K1-MET metallurgical competence center** in Linz join forces for multiphase CFD simulation of bubbly flow applications in inclusion removal and steel cleanliness. We aim to strengthen our abilities in physical understanding and simulation of complex metallurgical flows through a new PhD project on the bubble-particle interactions and numerical simulation of gas bubbling for non-metallic particle flotation.

This PhD thesis covers:

- Interface-resolved simulation of single bubble hydrodynamics (using the VOF method) at lab-scale and real-plant metallurgical environments
- Multiphase CFD simulation of bubble plume behavior under different conditions and validation of its macroscopic characteristics
- Investigation of bubble-particle interactions and flotation of non-metallic inclusions by single bubbles and bubble plumes at different wetting and cross-flow conditions



This PhD project should start in **July 2023** and is planned for 4 years. The prospective PhD researcher will be employed by K1-MET metallurgical competence center (www.k1-met.com) during his/her PhD with the gross salary of € 3400 (paid 14 times a year) which is according to the collective labor agreement of mining and iron-producing industries.

We are looking for students in the field of **engineering science, physics or mathematics**. Candidates should have experience in numerical simulations of fluid flow. Experience in modelling multiphase flows (preferably with OpenFOAM) and programming in C++ is a plus.

Interested candidates are required to **prepare a two-page application**. The first page covers information on the applicant (name, photo, date of birth, email, academic career, titles of selected projects and publications) and the second page features an abstract of the applicant's Master thesis (or equivalent research project).

This short application is due on **April 14th, 2023** and should be sent by email (pdf file) to andrea.scharinger@jku.at

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