

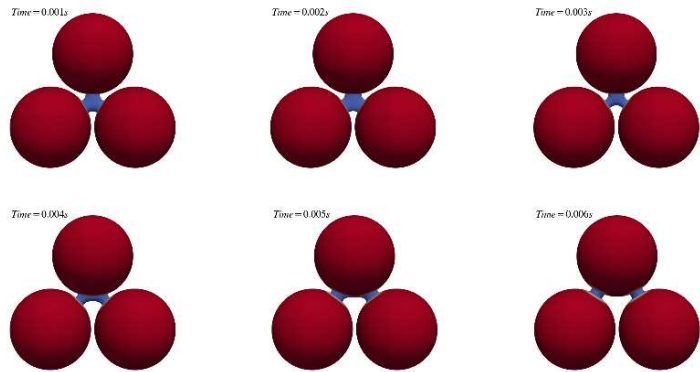
PAID DIPLOMA / MASTER'S THESIS

Experimental Study of Particle-Droplet Interactions in a particle assembly

To dedicated students of Chemical, or Mechanical, Civil Engineering, Physics or related disciplines, we offer an opportunity to write a paid Diploma/Master's thesis. This thesis is conducted at the Research Center Pharmaceutical Engineering in collaboration with Institute of Fluid Mechanics and Heat Transfer.

Objective

Granular matters are extensively used in various industrial sectors. The presence of liquid is known to significantly affects the granular cohesion via capillary bridges but their dynamic remain poorly described. Consequently, the mechanism of agglomeration and de-agglomeration taking place during granulation is not well understood, making the control and optimization of this process extremely challenging. In the GranSys-CG project, we focus on **the fundamental investigation of wet particles' interaction using multi-scale simulation approaches.**



To realize this, we have developed a

solver to simulate the interaction of particle-particle-droplet in the OpenFOAM platform.

To validate our solver, we are hiring a Master's student who will conduct an experimental study. The investigations will focus on particle trimers and combine force measurements with optical imaging of the liquid bridge. The data analysis should provide i) the liquid distribution on the particle trimer, and ii) the dynamics of inter-particle forces.

Qualifications

- Basic knowledge of fluid mechanics, and multiphase flow
- Strong interest in expanding your knowledge of interfacial phenomena
- Interest in conducting experimental study

Within the framework of this diploma/master's thesis, we offer the following:

- Extensive participation in a top-level and industrially relevant research project in an international environment
- Supervised training in the task to acquire experience in interfacial phenomena.
- Assistance with the publication of results and presenting at the conferences
- Access to modern infrastructure on the campus of Graz University of Technology

Financing

- Compensation on the basis of a service contract

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