

The **Research Center for Pharmaceutical Engineering (RCPE)** is a global leader in pharmaceutical engineering sciences. We help our partners to create and manufacture advanced medicines for patients around the world, through optimizing products and processes.



WE ARE OFFERING A

PAID DIPLOMA/ MASTER'S THESIS

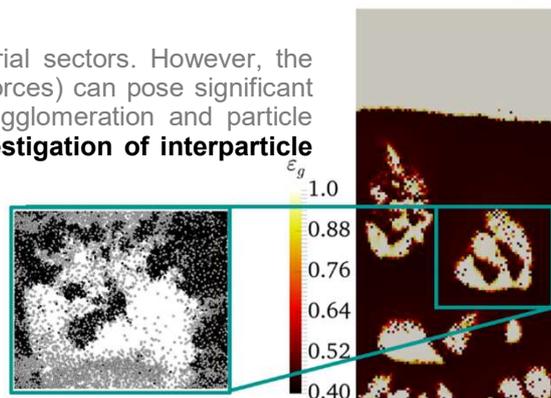
CFD SIMULATION OF COHESIVE PARTICLES'
INTERACTION IN THE FLUIDIZED BED
(GRANSYS-CG PROJECT)
REF. NO. DA152

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. The project is conducted in close cooperation with the Institute of Process and Particle Engineering, TU Graz.

OBJECTIVE:

Wet and cohesive powders are extensively used in various industrial sectors. However, the cohesivity of such powders (due to the liquid bridge and cohesion forces) can pose significant challenges in the smooth operation of process, such as particle agglomeration and particle stickiness to the wall. In the GranSys-CG project, we focus on **investigation of interparticle forces using multi-scale simulation approaches**.

In the framework of this project, we are hiring a Master's student to evaluate the conditions under which the agglomeration formation occurs for wide range of particle cohesiveness (see the figures). He/she will use our CFD platform developed to predict the flow behavior of cohesive powders in a fluidized beds.



Formation of agglomerate in a fluidized bed

QUALIFICATIONS:

- Strong interest in fluid mechanics, multiphase flow, particle technology, and computational fluid dynamic (CFD)
- First experience in programming with MATLAB®, as well as interest to expand your programming knowledge
- First experience in mathematical modelling and numerical simulation (e.g., with MATLAB®). First experience with the CFD code MFIX is preferable, but not required.

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 CFD simulation of multiphase flow
- Assistance with the publication of results and presenting at the conferences
- Perspective for future collaboration depending on the progress and qualification
- Adequate compensation and opportunities for personal and professional development



FINANCING:

- Compensation on the basis of a service contract

IF YOU ARE INTERESTED IN WRITING YOUR THESIS AT THE INTERFACE BETWEEN UNIVERSITY RESEARCH AND INDUSTRY/ BUSINESS AND TO CONTRIBUTE TO THE OPTIMIZATION OF PRODUCT AND PROCESS DEVELOPMENT IN THE PHARMACEUTICAL INDUSTRY, PLEASE CONTACT US INDICATING THE REFERENCE NUMBER.

Contact:

Research Center Pharmaceutical Engineering GmbH

Inffeldgasse 13, A-8010 Graz

Sandra Sünkel

Head of Human Resources

email: sandra.suenkel@rcpe.at - Tel.: +43 316 873 30904

LEADING PHARMA INNOVATION

rcpe.at