

BIOENERGY2020+ GmbH as an interdisciplinary research institute in the area of biomass to energy, looks for an highly qualified student for a project in the framework of COMET program together with AVL List, TU Graz and TU Wien as partner:

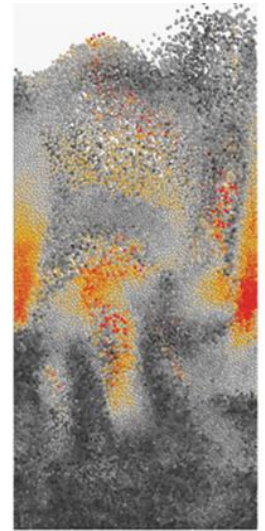
## PhD Position

### Simulation of reactive fluidised bed reactors

#### Scope of work:

Due to an efficient mixing and heat and mass transfer in fluidized bed reactors, they are used for a wide range of applications in chemical, metallurgical, pharmaceutical and energy industry. Many gas-solid multiphase models have been put forth by researchers and commercial vendors. This project aims at the development of a multi-physics simulation model for industrial scale reactive fluidized bed reactors as an indispensable tool for better understanding the undergoing processes in the bed zone.

Focus of the PhD thesis is the description of industrial scale systems based on a proper understanding of the physical core phenomena, present on micro and meso scales. Prospective PhD student will implement an Eulerian-Eulerian gas-solid multiphase model and further improve the already available Eulerian-Lagrangian gas-solid multiphase model in AVL FIRE™. Moreover the developed Eulerian-Lagrangian gas-solid multiphase model will be validated with in-house experimental data as well as with sets of well-defined data from literature.



#### Requirements:

- Knowledge in Computational Fluid Dynamics
- Knowledge in programming (e.g. C++, MATLAB, Fortran)
- Interest in multiphase flow research topics
- Good communication skills and teamwork

#### We offer:

- a research topic relevant for many industries
- close collaboration with AVL List and the Institute of Thermal Engineering TU Graz, Prof. Robert Scharler
- remuneration in compliance with the collective agreement for employees in industry and trade, in service as well as in information and consulting.

#### Contact:

Bioenergy 2020+ GmbH  
Dr. Ramin Mehrabian Bardar  
ramin.mehrabian@bioenergy2020.eu  
Inffeldgasse 21b,  
A-8010 Graz, Austria

#### Starting date:

January 2019