



## Position for a PhD Candidate

# Institute of Fluid Mechanics and Heat Transfer at Graz University of Technology in cooperation with the Institute of Fluid Dynamics at TU Darmstadt

#### **OPENING**

The Institute of Fluid Mechanics and Heat Transfer (ISW) at Graz University of Technology, Prof. Dr. G. Brenn, and the Institute of Fluid Dynamics at Darmstadt University of Technology (D), Prof. Dr. M. Oberlack, work together on the simulation of motions of viscoelastic liquids with free surface. The research project is entitled "Experimental, numerical and analytical investigation of droplet oscillation of a viscoelastic fluid". The three-year project is financed jointly by the Austrian Science Fund (FWF) and the German Research Foundation (DFG). We announce the opening for the position of a PhD candidate at the ISW of Graz University of Technology.

#### THE RESEARCH PROJECT

Non-Newtonian liquids are used in many technical processes. Especially viscoelastic liquids are a part of many production processes, e.g. in biotechnology. Related to the formation of sprays from such liquids, oscillatory motions of drops are important. The project investigates drop oscillations experimentally, analytically and numerically, also in the non-linear regime. The ISW of TU Graz is responsible for the analytical and experimental parts of the project. The institute has wide experience with the scientific methods and techniques relevant to the study, in particular with the experimental investigation of acoustically levitated drops and the weakly non-linear analysis of the oscillations. The aim of the work in Graz is the modelling of nonlinear oscillations of drops of viscoelastic liquids, paralleled by the experimental determination of liquid material data. Numerical methods will be developed at TU Darmstadt.

### **REQUIREMENTS AND OPPORTUNITIES**

We invite applications from graduates in Mechanical Engineering, Chemical Engineering, and Physics. We require sound knowledge in fluid mechanics and a good mathematical basis. Experience with experimental methods of fluid mechanics is welcome. We offer an international, interdisciplinary and professional environment of work at the institute, and an intense and professional supervision.

LANGUAGES: German, English.

**EMPLOYMENT:** The candidate will be employed as a research assistant at TU Graz. Salaries are according to the Austrian Kollektivvertrag. There is the option for doing a PhD.

**STRATING DATE:** from April 1, 2018 at any time, earliest possible **DURATION:** 3 years **LOCATION**: Institute of Fluid Mechanics and Heat Transfer, Graz University of Technology (see contact information below)

#### **CONTACT INFORMATION**

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