Graz University of Technology

Institute of Fluid Mechanics and Heat Transfer

Smart Technology for Assorted Plastic Waste Recycling

Opening for a PhD student at the
Institute of Fluid Mechanics and Heat Transfer
Graz University of Technology

OPENING

The Institute of Fluid Mechanics and Heat Transfer (ISW) at Graz University of Technology and the Chair of Materials Science and Testing of Polymers at the Montanuniversität Leoben cooperate in a project for the development of a recycling process for polymeric materials. The project is financed by the Styria Fund for Future (Zukunftsfonds Steiermark).

PROJECT DESCRIPTION

Recycling of polymeric materials is a current research subject around the globe. Present research activities aim at the processing of the material flows. Examples are multi-sensor based sorting systems with artificial intelligence and so-called tracing systems. Those systems have the drawback that composites, such as multi-layered packaging materials, cannot be separated selectively. Those wastes mostly enter the way of down-cycling, down to thermal use, and disappear from the materials circle.
The present project aims at closing the circle for non-sortable or difficult to separate polymeric materials by development of and research on a new separation process. That technique will be able to separate the material flows in a molten state of the polymers. A continuously running centrifuge is used for converting the polymer fractions into separate material flows. Furthermore, the high temperatures generated in the process have the positive side effect that low-molecular materials, such as oils and fats in the polymers are removed. The task of the ISW is the simulation of the flow through the centrifuge and of the separation process.

REQUIREMENTS AND EDUCATION

We are searching for a graduate of Mechanical Engineering or Mechanical Engineering- Economics, of Chemical Engineering or Technical Physics. We expect sound knowledge of thermodynamics, fluid mechanics and heat transfer. Experience with computational fluid mechanics and programming is an advantage. We expect skills for teamwork and interest in scientific work. We offer supervision in a team on a high scientific level.

LANGUAGES: German, English.

EMPLOYMENT: at Graz University of Technology, full position of a project assistant.

START: At any time **DURATION:** 2 years

PLACE: Institute of Fluid Mechanics and Heat Transfer, Graz University of Technology (see contact information below)

CONTACT INFORMATION

Please send your detailed application to

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