

Cotutelle PhD research project:
Magnetorheological elastomers under large deformations

A Cotutelle PhD research position is available at the Centre of Polymer Systems of the Tomas Bata University in Zlín (Czech Republic) in a close collaboration with the Institute of Polymer Product Engineering of the Johannes Kepler University Linz (Austria). The position is within the framework of Cotutelle PhD meaning the research will be jointly enrolled at the two mentioned universities and the student will spend time in both universities.

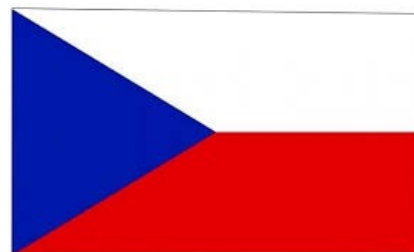
Topic: The project focuses on investigating the mechanical behaviour of magnetorheological elastomers (MREs) at the macroscopic scale of large deformations in the presence of an external magnetic field. Magnetorheological elastomers are composite systems of magnetic particles embedded within an elastomeric matrix, which are able to precisely change their mechanical properties in a controlled manner under the influence of an external magnetic field, which is a phenomenon that can be used, among other phenomena, in various damping systems. The involved person in this project will be exposed to both material science and physics in terms of designing novel MREs (type of elastomeric matrix, concentration of magnetic particles and the modification of the particle's surface for a better affinity with the matrix will be the most important parameters) and investigation of their mechanical properties under large deformations in the presence of an external magnetic field (fatigue analysis etc.), respectively.

Requirements: We invite applications from highly qualified and motivated individuals with one of the following degrees: materials science, physics, chemistry or chemical engineering. Provide a detailed curriculum and ranking for the last grade (M.Sc. or equivalent) with an average grade of at least 12/20 (or equivalent). English proficiency as communication and teaching language is highly recommended.

Start date (planned): 01. Nov. 2022 – 28. Feb. 2023

Contact

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