

Applications are invited for the following a PhD studentship for the following project:

The structural and viscoelastic properties of nanosheet networks

The position will be based with the Möbius group (School of Physics) within the Advanced Materials and Bioengineering Research Centre (AMBER) centre in Trinity College Dublin.

Summary of project

Nanosheets, such as graphene, MoS₂ and clays, can be used as fillers in polymers to create nano-composites with enhanced mechanical properties. This behaviour is controlled by the structure of the nanosheet network inside the matrix, which determines the mechanical (rheological) properties. In this project, we will study the interplay between microstructure and bulk properties of both nanosheet composites and suspensions. We will characterise the rheological properties of these materials for various nanosheets and explore how the mechanical properties of single sheets, which depend on their thickness, and the mesoscopic sheet structure influence the bulk mechanical response. The goal is to understand and tune the mechanical properties of these materials.

For more information please contact Prof. Möbius (mobiusm@tcd.ie)

The ideal applicants will have a 1st Class Honours Bachelor's degree in *Physics*. Excellent written and oral communication skills are essential. Previous experience in Matlab, Python or nanomaterials would be advantageous but not essential.

How to apply: CVs with the names and addresses of three referees should be submitted to. Please send your CV with the names and addresses of three referees by email to Prof. Matthias Möbius, mobiusm@tcd.ie.

Positions will remain opened until filled but the preferred start date is between *September and October 2020*. Only short-listed applications will be acknowledged.

This position is funded by AMBER, SFI Research Centre for Advanced Materials and BioEngineering Research & CRANN Institute. The AMBER research centre, as a community of researchers, welcomes its responsibility to provide equal opportunities for all. We are actively seeking diversity in our research teams and particularly encourage applications from underrepresented groups.