

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

Synthesis and studies of new materials for printing applications

The position will be based with the Prof. Yurii Gun'ko, School of Chemistry and be part of the Engineered functional materials platform within the Advanced Materials and Bioengineering Research Centre (AMBER) centre and Trinity College Dublin.

Summary of project

This project is on the preparation of new functional ink agent formulations for 2D and 3D printing for a range of potential applications including biomedicine, photonics and electronics. Particular attention should be paid to anisotropic nanomaterials such as nanoplates, nanowires or nanotubes as these nanomaterials can provide much better interconnection and for example, achieve a necessary percolation threshold at much lower content of the nanomaterial. The work will involve following stages: (i) Preparation of functional anisotropic nanomaterials (metal, semiconductor and magnetic nanostructures) with a high aspect ratio (nanowires, nanotubes, nanorods and nanoplates); (ii) functionalization of nanomaterials with appropriate monomer functionalities to be used as additives to existing thermoplastic agent formulation for 3D printing; (iv) testing of the functionalised nanomaterials and their thermoplastic blends in photopolymerisation reactions and characterisation of produced thermoplastic composites by various instrumental techniques; (v) preparation of prototypes of biomaterials, interconnects, magnetic functional devices and light emitting models using the nanomaterials above and printing techniques. This project is in line with the 2D and 3D printing activities in Amber research center and Trinity College Dublin

For more information please contact **Prof. Y.K. Gun'ko** (igounko@tcd.ie)

The ideal applicants will have at least II-1 Class Honours Bachelor's degree in *Chemistry or Materials*. Previous experience in synthesis of nanomaterials would be advantageous but not essential.

How to apply: CVs with the names and addresses of three referees should be submitted to: Prof. Yurii K. Gun'ko, email: igounko@tcd.ie

Positions will remain opened until filled but preferred start date is September 2 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.