

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

Electrospun nanofiber membranes and applications

The position will be based in Polymeric Materials and Nanocomposites (PMNC) group led by within Prof. Ramesh Babu at the School of Chemistry at Trinity College Dublin. The project will form part of the Engineered Functional Materials platform within the Advanced Materials and Bioengineering Research Centre (AMBER) centre.

Summary of project

Electrospinning, an electro-hydrodynamic process is a versatile platform technology for the production of nano fibrous materials. Engineered electrospun nanofibers can be adopted for a wide range of applications, from energy and environment to medicine and health to food and agriculture. Given the pressing demands of the circular economy or zero waste vision, new material design is paramount. Electrospinning, being one core technique in the nanotechnology realm, needs to be able to give such materials that can be used in a wide range of applications and be high-performance.

The diverse real-world applications of electrospinning process have continued to grow over recent years in developing high performance membranes for separation applications. The aim of this project is to understand the process of electrospinning to produce electrospun membranes suitable for various separation processes (Micro, Nano and Ultrafiltration processes). The fibre diameter and surface properties dictates the capability and selectivity of electro spun membranes for different applications. The PhD project focus on understanding the formation low dimensional nano fibers and production of electro spun membranes using various polymer and bio based polymer systems. The student will work in state-of-the art dedicated polymer laboratory and receive hands on training on various polymer analysis techniques. More details about the facilities can be found at <https://www.tcd.ie/Physics/research/groups/pmnc/facilities/>. The student will also have the opportunity to attend international conferences to present their research results as well as visiting collaborators in Ireland and abroad.

The ideal applicants will have a 1st Class Honours Bachelor's degree in Chemistry, Physics, Materials Science or similar.

The researcher will work closely with other members of a multidisciplinary project team. Excellent written and oral communication skills are essential.

How to apply:

CVs with the names and addresses of three referees should be submitted to: Prof. Ramesh Babu via email at babup@tcd.ie

Positions will remain opened until filled but preferred start date is September 2 2020. Only short-listed applications will be acknowledged. Interested candidates are encouraged to contact Prof. Babu directly to discuss the project and their suitability for this PhD studentship prior to submission of their application.

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.