



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

3D-Printed Rechargeable Lithium-ion Batteries for Future Wearable, Medical and IoT Technologies

The position will be based with the *Applied Nanoscience Group* at the School of Chemistry, University College Cork and be part of the Materials for Energy platform within the Advanced Materials and Bioengineering Research Centre (AMBER) centre.

Summary of project

Advanced battery technologies underpin virtually all areas of sustainable energy research due to the need for storage and power balancing. This project will design and implement a customizable 3D-printed battery that would outperform the state-of-the-art and open up the design space for wearable, internet of things devices and medical devices, which existing form factor batteries cannot do. The project will investigate the development 3D-printed rechargeable Li ion batteries with high volumetric energy density and stable operation and long lifetime with lightweight, allowing the battery to conform to the device or product design, rather than the other way round. The research will develop high performance and high capacity battery nanomaterials and 3D-printed Li-ion battery cells with customizable shape by synthesis of new, low-cost advanced electrode materials in a low-volume form, to provide a scalable battery solution for human-centric devices, personal technologies, new wearable options and medical devices without wires directly from 3D printing. The project will be conducted in a well-funded research group with existing postdoctoral researchers and PhD student working on 3D printing of rechargeable batteries using FDM and PolyJet methods, advanced battery materials synthesis and methods to incorporate them in 3D printable materials, and full cell battery characterization. The PhD student will also have a full suite of electrochemical and materials characterization, and advanced electron microscopy and analytical facilities at the groups laboratories at UCC, Tyndall National Institute, and Trinity College Dublin.

More information on the groups research can be found at:

Web: www.appliednano.ie

Twitter: @appliednano

The ideal applicants will have a 1st Class Honours Bachelor's degree in *Chemistry, Chemical Physics, Material Science or closely related discipline*

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. Colm O'Dwyer, email: c.odwyer@ucc.ie

Positions will remain opened until filled but preferred start date is *September 2 2019*. Only short-listed applications will be acknowledged.

This position is funded by the SFI-research centre AMBER.

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.

