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

Machine-learning design of novel permanent magnets

The position will be based with the *Computational Spintronics group (http://www.spincomp.com)* at the School of Physics & CRANN and be part of the Materials for Energy platform within the Advanced Materials and Bioengineering Research Centre (AMBER) centre.

Summary of project

The aim of the project is to computationally design novel permanent magnets for energy applications (electric motors, turbines, etc.). We will use machine-learning methods trained over large experimental and theoretical datasets to explore a vast chemical and structural space. These will provide a first pool of materials prototypes, whose electronic and magnetic properties will be calculated with advanced electronic structure theory (density functional theory). Then for the most promising materials we will investigate their finite-temperature behaviour with state-of-the-art force fields. The project will maintain a close collaboration with experimental groups at Trinity, who will attempt the synthesis of the most promising magnets identified by the theory. Part of the research will be conducted in collaboration with Prof. Curtarolo's Materials Lab at Duke University. For more information please contact Prof. Sanvito (sanvitos@tcd.ie).

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

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. Stefano Sanvito, School of Physics, Trinity College, Dublin 2, Ireland. Email: sanvitos@tcd.ie

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

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.