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

Multiscale modelling of spin-transport devices

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 Information and Communication Technology (ICT) within the Advanced Materials and Bioengineering Research Centre (AMBER) centre.

Summary of project

The aim of the project is to model the interplay between spin-polarised currents and the magnetic structure of materials. This interplay can be exploited in a multitude of memory, logic and combined memory-logic devices, where the currents can be used for both reading and writing the information. The theoretical tool of choice will be quantum transport theory implemented with state-of-the-art electronic structures, computed at the level of density functional theory. Furthermore, the dynamics of the magnetization induced by the currents will be computed with atomistic spin-dynamics tools, namely by solving the micromagnetic problem at the atomic level. The theoretical work will be integrated in a larger effort, which includes the growth and characterization of devices, in the groups of Prof. Coey and Prof. Stamenov, also at Trinity College.

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.

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.


AMBER