CRANN

2 Postdoc positions in high-throughput materials design

Two postdoctoral researcher positions are available immediately in the CRANN Institute (www.crann.tcd.ie) at Trinity College Dublin (Ireland). The successful applicants will join a team of 8 PhD students and 8 Postdoctoral researchers and will be hosted by Prof. Sanvito's *Computational Spintronics Group* (www.spincomp.eu). Both projects will include algorithm development and materials science, and will involve collaboration with both theoretical and experimental groups, as well as with industry.

First position: 2D materials heterostructures
This project aims at developing a high-throughput electronic structure approach to the design of new heterostrucutres made of layered compounds. The project will combine advanced electronic structure theory and data-mining/artificial intelligence methods to design new heterostructures for energy applications. The project is sponsored jointly by Science Foundation of Ireland through the AMBER center and by Industry.

Second position: materials for extreme conditions
This project aims at developing new composite materials for applications in extreme conditions (high-temperature and high-pressure). The project will comprise a materials search component and the investigation of surface adhesion between different compounds, whose results will be input in engineering software for materials mechanical properties. The position is sponsored by the European Union within the Horizon 2020 project, C3HARME.

Essential/Desirable Criteria
Strong overall motivation and a keen interest in theory and computation, as well as in interdisciplinary work between physics and materials science. Previous experience in UNIX/Linux environment and with programming in either Fortran and/or C/C++ is essential. Ability to work independently and also function as an active and efficient team player. Excellent writing skills. Previous knowledge of density functional theory and/or materials thermodynamics will be considered essential.

How to apply?
Applications must include a cover letter detailing how you meet the selection criteria for the post, together with a CV and the name and contact details of referees (e-mail address). Informal enquiring and applications should be sent to:

Prof. S. Sanvito (Trinity College Dublin, sanvitos@tcd.ie)

Trinity College Dublin
The University of Dublin

CRANN

Trinity College Dublin

Trinity College Dublin is Ireland's university on the world stage. Recognized for its transformative research and education conducted at the frontiers of disciplines, Trinity is ranked 61st in the world by the QS World University Rankings 2013. Spread across 47 acres in Dublin's city centre, Trinity has a 17,000-strong student body, 3,000 staff and over 100,000 alumni around the world. Of the student body, 16% come from outside Ireland and, of those, 40% are from outside the European Union, making Trinity's campus cosmopolitan and bustling, with a focus on diversity.

Trinity has developed significant strength in a broad range of research areas, including the 21 broadly based multi-disciplinary thematic research areas, see www.tcd.ie/research/themes. Trinity is home to Ireland's first purpose-built nanoscience research institute, CRANN, housing 150 scientists, technicians and graduate students in specialised laboratory facilities. Meanwhile, the state-of-the-art Trinity Biomedical Sciences Institute is carrying out breakthrough research in areas such as immunology, cancer and medical devices. Trinity College Institute of Neuroscience (TCIN) leads brain research in Ireland and is the country's only dedicated neuroscience research institute.

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CRANN, the Centre for Research on Adaptive Nanostructures and Nanodevices, is Ireland's first purpose-built research institute whose purpose is to perform nanoscience research. CRANN is focused on delivering world-class research and innovation through extensive proactive collaborations with industry and is committed to attracting and training graduate students to the highest international standards. CRANN works at the frontiers of nanoscience developing new knowledge of nanoscale materials, with a particular focus on new device and sensor technologies for ICT, the biotechnology and medical technology sectors and a growing interest in energy related research. The institute employs a team of over 300 researchers from 45 different countries, led by 19 principal investigators, each of whom is an internationally recognized expert in their field of research. In addition CRANN has built partnerships with 17 additional Investigators based across multiple disciplines including physics, chemistry, medicine, biochemistry and immunology, engineering and pharmacy.

Since its inception in 2003, CRANN has greatly assisted in radically transforming Ireland's international reputation for research. A Thomson Reuters report in late 2010 placed Ireland 8th globally for materials science research based on citations per publication for the decade 2000-2010. CRANN researchers were responsible for > 70% of the outputs leading to this national ranking. In Nanotechnology, Ireland's global ranking is sixth in terms of both the quality of its publications and the volume output per capita.

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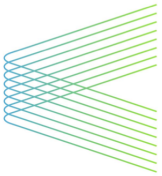

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