



Post Specification

Post Title:	Post-Doctoral Researcher in Materials Chemistry
Post Status:	Fixed term 1 year contract
Department/Faculty:	School of Chemistry
Location:	School of Chemistry, Chemistry Building
Salary:	This appointment will be made on the postdoctoral researcher salary scale in line with current Government Pay Policy.
Closing Date:	17.00pm on Friday 20th of December, 2013

Post Summary

Development of novel optically active semiconducting nanomaterials for advanced opto-electronic applications and bio- and chemo- sensing.

Background to the Post

Applications are invited for a 1 year Post-Doctoral Fellowship with Prof. Yurii Gun'ko at the School of Chemistry, Trinity College Dublin, Ireland. This project is sponsored by the Science Foundation Ireland. The main goal of the project is to develop novel optically active semiconducting nanomaterials for advanced opto-electronic applications and bio- and chemo-sensing.

Standard duties of the Post

The research will involve the synthesis of quantum dot based materials and their characterisation by various instrumental techniques (including SEM, TEM, confocal microscopy, FLIM and using a range of spectroscopic methods).

Funding Information

This appointment will be made on the postdoctoral researcher salary scale in line with current Government Pay Policy. An additional conference travel allowance will be provided.



Person Specification

Qualifications

Applicants must hold a PhD in Synthetic Inorganic Chemistry or Chemistry of Materials and have a track record of publishing in peer-reviewed journals.

Knowledge & Experience (Essential & Desirable)

An experience in the preparation and characterisation of quantum dots and related materials are essential. The knowledge of confocal microscopy and FLIM techniques is highly desirable.

Skills & Competencies

The ideal candidate should have synthetic inorganic chemistry skills and a deep knowledge of various instrumental techniques including Scanning Electron Microscopy, Transmission Electron Microscopy, Uv-Vis, PI, CD, Raman and FTIR spectroscopy. The candidate should be able to write research manuscripts and reports and supervise undergraduate and postgraduate students.

Department Summary

General Department Information

The School of Chemistry, Trinity College Dublin, <http://www.chemistry.tcd.ie/> was ranked 36th in the 2011 QS world rankings. On a national level, a recent Thomson Reuters analysis of the citation impact of Chemical Science papers produced in Ireland and Northern Ireland shows that the TCD School of Chemistry comfortably leads the national research field. The number of academic staff in the School has expanded from 19 to 24 during the last 3 years, with 2 further positions currently being progressed. There are 104 registered postgraduate students undertaking PhD degrees by research and approximately 30 postdoctoral research fellows.

The School runs Dublin Chemistry, <http://www.dublinchemistry.ie/> the first Graduate School in Chemistry of its kind in the country, together with University College Dublin, and has recently made substantial investments in high-end spectroscopic and analytical equipment. Many members of the School are affiliated with CRANN (see below) and with the Centre for Synthesis and Chemical Biology (the CSCB, <http://www.ucd.ie/cscb/>) and these clusters provide a further equipment resource. These facts, and the School's reputation for producing top quality graduates, make it an extremely attractive location for incoming research-active staff.

The School provides Honours degree (Moderatorship) courses in Chemistry, in Medicinal Chemistry and in Chemistry with Molecular Modelling. The School also offers, jointly with the School of Physics, a Moderatorship in Nanoscience: Physics and Chemistry of [Advanced Materials](#) (NPCAM) - a course specialising in the physics and chemistry of materials for electronic, optoelectronic and related applications.



The School has been very successful in competing for funds from National Funding Agencies such as Enterprise Ireland and Science Foundation Ireland, for both basic and strategic research, and in its applications to the EU "Cooperation", "Human Capital and Mobility" and "Training and Mobility of Researchers" programmes. Funding has also been obtained recently from industrial companies (Dupont, Elan, Harris, Henkel, Schering Plough), from the Health Research Board and from charitable trusts such as the Cancer Research Campaign. Three members of staff currently hold major ERC funding awards.

Research in Inorganic & Synthetic Materials Chemistry includes synthetic work involving the preparation of metal-based compounds for advanced materials (non-linear optics, semiconductors, molecular magnets, nanomaterials, MOCVD) and biomedical (sensors, anti-cancer agents) applications. Current areas of specialisation are in coordination chemistry, catalysis, metallosupramolecular chemistry, structural analysis, opto-electronic materials, metallo-oxo clusters, magnetochemistry, *f*-block, inorganic nanomaterials and bioinorganic chemistry.



Trinity College Dublin

Founded in 1592, Trinity College Dublin is the oldest university in Ireland and one of the older universities of Western Europe. On today's campus, state-of-the-art libraries, laboratories and IT facilities, stand alongside historic buildings on a city-centre 47-acre campus.

Trinity College Dublin offers a unique educational experience across a range of disciplines in the arts, humanities, engineering, science, human, social and health sciences. As Ireland's premier university, the pursuit of excellence through research and scholarship is at the heart of a Trinity education. TCD has an outstanding record of publications in high-impact journals, and a track record in winning research funding which is among the best in the country.

TCD has developed significant strength in a broad range of research areas including the 18 broadly-based multi-disciplinary thematic research areas listed below.

Sustainable Environment	Next Generation Medical Devices	Identities in Transformation
Smart and Sustainable Cities	Creative Technologies – Digital Media, Arts and Entertainment	International Development
Cancer	Neuroscience	Immunology and Infection
Nanoscience	Telecommunications	Creative Arts Practice
Inclusive Society	Mathematics of Complexity	Intelligent Media and Human Communication
Ageing	International Integration	Digital Humanities

Its current flagship interdisciplinary research institutes are in areas such as biomedical science, arts and humanities, neuroscience, international integration studies, and nanostructures and nanodevices. The construction of Ireland's first purpose built nanoscience research institute, CRANN, was opened in January 2008, which houses 150 scientists, technicians and graduate students in specialised laboratory facilities.

The building also includes an innovative public venue, the Science Gallery. In 2011, it received the Shorty Award for Best Cultural Institution on Twitter globally and the Irish Web Award for Best Education and Third Level Website. These joined a list of awards that includes European Museum of the Year Award – Special Commendation 2010 and National IT award for best use of technology in education, 2009.

The recently opened Trinity Biomedical Sciences Institute (TBSI) is an unprecedented development for Biomedical Research in Ireland, both in terms of scale and ambition. It



provides a facility for TCD to continue its upward trajectory in both basic and translational research programmes, notably in the areas of Immunology, Cancer and Medical Devices.

The Library of Trinity College is the largest research library in Ireland and is an invaluable resource to scholars. In addition to purchases and donations accrued over four centuries, the College has had 200 years of legal deposit. By this right Trinity can claim a copy of every book published in Ireland the UK. The Library has over 4.25 million books, 22,000 printed periodical titles and access to 60,000 e-journals and 250,000 e-books. The Library's research resources also include internationally significant holdings in manuscripts (the most famous being the Book of Kells), early printed material and maps. Its collections and services support the College's research and teaching community of 15,000+ students and academic staff.

Trinity continues to attract intellectually strong students from Ireland and abroad. More than half of its incoming undergraduates have earned in excess of 500 out of a maximum 600 points in the national Leaving Certificate examination. The accessibility of a Trinity education to all students of ability is also very important. Trinity College was the first university in Ireland to reserve 15% of first year undergraduate places for students from non-traditional learning groups – students with a disability, socio-economically disadvantaged students as well as mature students. The College has met its target in this respect. There is also an exciting international mix of its student body where 16% of students are from outside Ireland and 40% of these students are from outside the European Union. TCD students also have an opportunity to study abroad in other leading European universities through Trinity's partnership agreements.

Students also benefit from a scholar teacher model where they have the opportunity of being taught by world-leading experts in their field. Interdisciplinarity forms a key element in the College strategy in increasing Trinity's international standing as a research-led university.

Many of Trinity College Dublin's alumni have helped shape the history of Ireland and Western Europe. They include author, Jonathan Swift, philosopher, George Berkeley, political philosopher, Edmund Burke, wit and dramatist, Oscar Wilde, historian, William Lecky, religious scholar, James Ussher, scientists, John Joly, George Johnstone Stoney, William Rowan Hamilton and physicians, William Stokes and Denis Burkitt.

Two of Trinity College's alumni have won Nobel prizes – Ernest Walton for Physics in 1951 and Samuel Beckett for Literature in 1968. The first President of Ireland, Douglas Hyde was a graduate as was the first female President of Ireland, Mary Robinson.

Equal Opportunities Policy

Trinity College Dublin is an equal opportunities employer and is committed to the employment policies, procedures and practices which do not discriminate on grounds such as gender, civil status, family status, age, disability, race, religious belief, sexual orientation or membership of the travelling community.



Application Procedure

Candidates should submit a cover letter together with a full curriculum vitae to include the names and contact details of 3 referees (email addresses if possible) to Prof. Y.K. Gun'ko, School of Chemistry, Trinity College Dublin, Dublin 2, Ireland.
e-mail: igounko@tcd.ie