London Centre for Nanotechnology
17-19 Gordon Street
London WC1H 0AH
www.london-nano.com

Title: Research Associate

Reference: 1726147

Grade: UCL Grade 7

Salary: £34,635-£41,864 per annum including London Allowance. Appointment at Grade 7 is dependent upon having been awarded a PhD; if this is not the case, initial appointment will be at research assistant Grade 6B (salary £30, 316-£31, 967 per annum) with payment at Grade 7 being backdated to the date of final submission of the PhD thesis.

Terms and Conditions: In accordance with the conditions of employment as laid down in the relevant UCL Staff policies

Accountable to: Dr Hidekazu Kurebayashi

Job Summary:

The EPSRC have recently funded a Programme Grant on Superconducting Spintronics for multiple groups across the UK: http://gow.epsrc.ac.uk/NGBOViewGrant.aspx?GrantRef=EP/N017242/1. Applications are invited for a Research Associate in device design and measurement. This position is available immediately for 16 months in the first instance and each will involve work on a number of research projects within the programme.

The project is focused on dynamic measurements of spin transport in the superconducting state. For instance, we have very recently reported “observation of possible spin currents carried by superconductors” in Nature Materials: https://www.nature.com/articles/s41563-018-0058-9. There are many exciting research ideas based on this observation, which this research associate will work on. We are looking for a highly motivated and enthusiastic candidate with a strong background high frequency low temperature transport measurements, and preference will be given to candidates who have a strong background in magnetism or superconductivity. The appointed Research Assistant/Associate will be part of a dynamic team and will be expected to actively interact with the different groups involved in the programme and to actively support activities such as outreach events and small focused workshops. This position will be based in spintronics group at the London Centre for Nanotechnology: http://www.ucl.ac.uk/spintronics Candidates should have (or expect shortly to get) a PhD in a relevant subject. Applications should include list of publications. Applications by email will not be accepted.

Duties and Responsibilities:

- Fabricate spintronic devices with superconductive thin-film layers using cleanroom facilities
- Measure transport and spin-dynamics properties using microwave set-ups
- Contribute to the induction and direction of other research staff and students where requested
- Prepare progress reports on a regular basis as required
- Prepare manuscripts for submission to peer-reviewed journals
- Prepare presentations, including text and images, for delivery by self as well as others
- Travel to meetings both domestically and abroad to discuss results and to learn about related developments elsewhere
- Contribute to the overall activities of the research team and department as required
- Carry out any other duties as are within the scope, spirit and purpose of the job as requested by Dr Kurebayashi
- Actively follow UCL policies including Equal Opportunities and Race Equality policies
- Maintain an awareness and observation of Fire and Health and Safety Regulations

Person Specification

Essential Qualifications

- Applicants should have a PhD or equivalent in Physics or Materials Science

Essential Experience

- Substantial experience of GHz high-frequency experiments and understanding of related theories of spin-dynamics
- Experience of performing low noise electrical transport measurements at cryogenic temperatures
- Good understanding of condensed matter physics, in particular magnetism and superconductivity
- Experience of managing research projects and setting research targets
- Experience with the preparation of scientific papers for successful publication in high-impact journals
- Excellent IT skills. Word processing such as MS-WORD or equivalent
- Excellent knowledge of computational software for analysing experimental data such as EGOR, MATLAB or MATHEMATICA
- Knowledge of interfacing experiments using LABVIEW

Desirable Experience

- Experience of spin-pumping and spin-orbit torque measurement techniques
- Experience of measuring superconductivity in thin-films
- Knowledge of spin-pumping and spin-transport
- Knowledge of Josephson junctions
- Ability to deliver adequate training and support to other lab users

Essential skills and abilities

- Commitment to high quality research, passion to cutting-edge science
- Fluency and clarity in spoken and written English
- Well-organised, attention to detail and ability to meet deadlines
- Ability to think logically, create solutions and make informed decisions
- Ability and willingness to work in a team where credit is shared
- Good oral, written and presentation skills

London Centre for Nanotechnology

The London Centre for Nanotechnology is an interdisciplinary joint enterprise between University College London and Imperial College London. In bringing together world-class infrastructure and leading nanotechnology research activities, the Centre aims to attain the critical mass to compete with the best facilities abroad. Research programmes are aligned to three key areas, namely Planet Care, Healthcare and Information Technology and exploit core competencies in biomedical, physical and engineering sciences.

The Centre occupies a purpose-built eight storey facility in Gordon Street, Bloomsbury, as well as extensive facilities within different departments at South Kensington. LCN researchers have access to state-of-the-art clean-room, characterisation, fabrication, manipulation and design laboratories. This experimental research is complemented by leading edge modelling, visualisation and theory.

LCN has strong relationships with the broader nanotechnology and commercial communities, and is involved in much major collaboration. As the world's only such facility to be located in the heart of a metropolis, LCN has superb access to corporate, investment and industrial partners. LCN is at the forefront of training in nanotechnology, and has a strong media presence aimed at educating the public and bringing transparency to this emerging science.

About UCL

UCL is one of the world's top universities. Based in the heart of London, it is a modern, outward-looking institution. At its establishment in 1826, UCL was radical and responsive to the needs of society, and this ethos – that excellence should go hand-in-hand with enriching society – continues today.

UCL's excellence extends across all academic disciplines; from one of Europe's largest and most productive hubs for biomedical science interacting with several leading London hospitals, to world-renowned centres for architecture (UCL Bartlett) and fine art (UCL Slade School).

UCL is in practice a university in its own right, although constitutionally a college within the federal University of London. With an annual turnover exceeding £1 billion, it is financially and managerially independent of the University of London.

The UCL community

UCL's staff and former students have included 29 Nobel prizewinners. It is a truly international community: more than one-third of our student body – more than 35,000 strong – come from 150 countries and nearly one-third of staff are from outside the UK.

UCL offers postgraduate research opportunities in all of its subjects, and provides more than 200 undergraduate programmes and more than 400 taught postgraduate programmes. Approximately 54% of the student community is engaged in graduate studies, with about 29% of these graduate students pursuing research degrees.

Quality of UCL's teaching and research

UCL is independently ranked as the most productive research university in Europe (SIR).

It has 983 professors – the highest number of any university in the UK – and the best academic to student ratio of any UK university (*The Times*, 2014), enabling small class sizes and outstanding individual support.

In Research Excellence Framework 2014 (REF2014), UCL was rated the top university in the UK for 'research power' (the overall quality of its submission multiplied by the number of FTE researchers submitted). It was rated top not only in the overall results, but in each of the assessed components: publications and other research outputs; research environment; and research impact. REF2014 confirmed UCL's multidisciplinary research strength, with many leading performances across subject areas ranging from biomedicine, science and engineering and the built environment to laws, social sciences and arts and humanities.

Equality

UCL is proud of its longstanding commitment to equality and to providing a learning, working and social environment in which the rights and dignity of its diverse members are respected.

Some highlights below:

- **Race Charter Mark** - UCL holds a Bronze Race Equality Charter Mark award, recognising UCL's commitment to improving the representation, progression and success of minority ethnic staff and students.
- **Athena SWAN** - UCL holds an institutional Silver **Athena SWAN** award – this recognises our commitment to and impact in addressing gender equality. Departments at UCL are also engaged in the Athena SWAN charter, with 29 departments holding an award; 16 Silver and 13 Bronze.
- **Staff networks** - We have a number of staff networks that run a range of social and development activities, for example **Out@UCL**, **PACT**, **Enable@UCL**, **the race equality staff network**, **Astrea** and **UCL Women**.
- **B-MEntor** – **B-MEntor** is a mentoring scheme for black and minority ethnic staff. The mentoring scheme is a collaborative initiative with a number of London-based universities.
- **Sabbatical Leave following maternity** – UCL provides one term of sabbatical leave without teaching commitments for research-active academics returning from maternity, additional paternity, adoption or long-term carer's leave. This support for returners enables staff to more quickly re-establish their research activity.

Please see our **Equalities and Diversity Strategy 2015-2020** for information on our current priorities.

Location and working environment

Based in Bloomsbury, UCL is a welcoming, inclusive university situated at the heart of one of the world's greatest cities.

UCL's central campus is within easy reach of Euston, Kings Cross and Marylebone mainline stations, the new Eurostar terminal at St. Pancras and the following Underground stations - Euston Square, Warren Street, Goodge Street and Russell Square. Road connections to the M1 and M40 motorways give easy access to the north and west road networks. There are also good public transport links to Heathrow airport.

Application procedure

Further details about the post and the application procedure are available at www.london-nano.com. If you are unable to apply online please contact Denise Ottley at the London Centre for Nanotechnology, d.ottley@ucl.ac.uk or 17-19 Gordon Street, London WC1H 0AH, for advice.