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

Title:	Research Associate in Advanced Nanomaterials and Point of Care Diagnostic Test Development
Reference:	1739339
Grade:	7
Salary:	£34,635 – £41,864 per annum including London Allowance.
Terms and Conditions:	In accordance with the conditions of employment as laid down in the relevant UCL Staff policies
Accountable to:	The Director of i-sense, Prof Rachel McKendry, Director of Biomedicine and Life Sciences, London Centre for Nanotechnology, UCL

Job Summary:

Applications are invited for a talented Postdoctoral Research Associate (PDRA) to join *i-sense EPSRC IRC* to develop innovative smartphone connected diagnostic tests for the emerging infectious diseases in community settings. This is an exciting position, at the cutting interface of nanotechnology, telecommunications, medicine and public health, requiring intellectual leadership, drive and vision. The person must have an outstanding track record in creative, original independent research of the highest impact, ability to work with a wide range of stakeholders in the UK and internationally, ability to multi-task and organise their work to meet deadlines.

The positions are based at the London Centre for Nanotechnology UCL and funded by *i-sense*, the £11M five year EPSRC Interdisciplinary Research Collaboration in Early Warning Sensing Systems for Infectious Diseases, and benefits from a large scale multidisciplinary project involving over 100 scientists, engineers and clinicians from UCL, Imperial College, London School for Hygiene and Tropical Medicine and Newcastle University, in conjunction with Public Health England and industrial partners ranging from OJ-Bio through to O2 Health and Microsoft. i-sense aims to create innovative mobile health technologies that allow doctors to diagnose and track serious diseases (such as major flu epidemics, antibiotic-resistant bacteria and HIV) much earlier than ever before. This post will involve a strong collaboration with Molly Stevens group at Imperial College.

Advanced nanomaterials and nanosensors are being developed including smart-phone connected diagnostic tests for use in community settings, for HIV and antimicrobial resistant infections. We are also exploring the use of symptoms reported on search engines and social networks to identify early indicators of an outbreak. This early-warning diagnostic system has the potential to bring major

economic and human benefits to patients, the public, the NHS and global healthcare providers – benefiting patients by allowing them to gain faster access to treatment, the public by curbing the spread of infectious diseases, the health service by enabling more cost-effective models of community based care, and help to identify 'hotspots' of emerging infections.

This core Research position is funded for 1 year in the first instance.

Duties and Responsibilities:

These exciting Research positions will be responsible for leading the development of innovative smartphone connected diagnostic tests for emerging infectious diseases, with a focus on advanced nanomaterials for ultra-sensitive detection of biomarkers. The key challenges to be addressed include the design of advanced nanomaterials, surface chemistries and linkers to orient capture ligands, to rapidly detect ultra low levels of multiple biomarkers with high sensitivity and specificity. Experience with molecular diagnostics and isothermal amplification is desirable. The successful applicant will also be expected to keep up to date lab books, write progress reports, contribute towards writing follow on funding applications and fellowship applications, and commercialisation of the technology. The job will also be required to supervise project students.

UCL is committed to equal opportunities. The post holder will actively follow UCL policies including Equal Opportunities and Race Equality policies and maintain an awareness and observation of Fire and Health & Safety Regulations. The post holder will carry out any other duties within the scope, spirit and purpose of the job as requested by Rachel McKendry and any changes to the duties will be made in consultation with the post holder.

Person Specification

Essential Qualifications

- Applicants should have a PhD in engineering, physical/chemical science or a relevant subject (or at least have submitted their thesis).

Essential Experience

- Outstanding track record in independent high impact research and publications
- Strong experience in advanced nanomaterials (nanoparticles, quantum dots), including biomolecule/chemical conjugation techniques (e.g. EDC/NHS coupling, click chemistry) and characterisation methods (e.g. TEM, SEM, AFM, DLS, Forte-Bio/SPR)

Desirable Experience

- Experience working with clinical samples
- Experience with developing rapid tests based on molecular sensing methods, e.g. isothermal amplification

Essential skills and abilities

- A very positive ‘can do’ attitude and must enjoy working in interdisciplinary teams
- A demonstrated ability for creative and original interdisciplinary research of the highest impact
- Ability to multi-task and organise own work with minimal supervision to meet deadlines – including writing project plans, Gantt charts, milestones and deliverables, project reports and keeping accurate and complete lab books
- Excellent written communication skills and the ability to write clearly and succinctly to a level consistent with publication in highly regarded international journals and funders. Careful attention to detail
- Strong communication and interpersonal skills to work in multidisciplinary teams, give talks to funders and public engagement events

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.