

THE UNIVERSITY OF MANCHESTER
PARTICULARS OF APPOINTMENT
FACULTY OF SCIENCE AND ENGINEERING
SCHOOL OF CHEMISTRY
CHEMISTRY

RESEARCH ASSOCIATE IN INNOVATIVE MANUFACTURING

Vacancy ref: S&E-09085

Salary: Grade 6, £31,076 to £38,183 per annum

Hours: 1 FTE

Duration: Fixed term until 31 December 2017

Location: Oxford Road, Manchester

Responsible to: Professor Mike Turner

Enquiries about the vacancy, shortlisting and interviews:

Name: Professor Mike Turner

Email: michael.turner@manchester.ac.uk

or

Name: Professor Krishna Persaud

Email: Krishna.persaud@manchester.ac.uk

ROLE BACKGROUND

You will work as a Postdoctoral Research Assistant at the University of Manchester. You will fabricate OFET devices by digital printing, characterise the performance of these devices, test them as gas sensors and integrate the devices with silicon microcontrollers in support of the work of the EPSRC Centre for Innovative Manufacturing in Large Area Electronics at the Organic Materials Innovation Centre (OMIC). This post will be based in the School of Chemistry and the School of Chemical Engineering and Analytical Sciences within OMIC.

It will appeal to someone with a background in a relevant area of experimental chemistry, physics, materials science or electronics. You will use inkjet micro-fabrication techniques to make OFET devices for use as gas sensors. Particular focus will be paid to the relationship between the inkjet deposition process and on-substrate performance, OFET device fabrication, sensors and the development of sensor systems. A strong research track record and expertise in the defined areas is essential, experience in working with industry is desirable. You must have

excellent communication and interpersonal skills with the ability to interact with persons at all levels within the academic and business communities.

OMIC (www.omic.org.uk) is a key component of the EPSRC Centre for Innovative Manufacturing in Large Area Electronics. This is a partnership uniting OMIC with the CIKC at the University of Cambridge, the Centre for Plastic Electronics at Imperial Collage and the Welsh Centre for Printing and Coating at the University of Swansea to understand the manufacturing challenges involved in the commercialisation of Large Area Electronics.

JOB DESCRIPTION

Overall purpose of the post:

You will:

- help to deliver the Flagship Project of The EPSRC CIM in LAE
- fabricate OFET devices and sensors
- test the sensors against a range of analytes
- integrate the sensors into systems with silicon microcontrollers
- provide written and oral reports
- ensure that laboratories operate good laboratory practice.

Key Responsibilities, Accountabilities and Duties:

These will include:

- OFET device fabrication and testing
- Evaluation of the use of these devices as sensors
- Thin film characterisation – coordinated use of a wide range of physical and chemical characterisation techniques including optical and IR spectroscopy, XRD, optical microscopy, electron microscopy and scanning probe microscopy.
- Integration of the OFETs into integrated sensor systems with silicon devices
- Adhering to all relevant health and safety procedures.
- Maintaining accurate and comprehensive records of research data.
- Training students and others in skills appropriate to the project.
- Making presentations on the research project as directed.
- Preparation of regular oral and written reports.
- Project management & contribution to day-to-day laboratory management.
- Regular surveys of the scientific literature.
- Preparation of research papers.
- Presentations at national and international meetings.

PERSON SPECIFICATION

Essential Skills, Knowledge and Experience:

- Have obtained a PhD, or equivalent, in physical chemistry, materials chemistry, materials physics, electronics or digital fabrication.
- Have research experience in physical chemistry, materials chemistry, materials physics, electronics or digital fabrication and preferably have research experience gained in an industrial environment.

- Be able to work collaboratively within a group and also to work independently, with minimal supervision. Some of this work may be carried out collaboratively in the laboratories of the other CIMLAE partners.
- Be interested in learning new techniques and a desire to undertake interdisciplinary research.
- Have excellent time-management skills and organisational abilities.
- Have excellent written and oral communication skills, including communicating technical information effectively.

Experience in three or more of the following fields will be required:

- Material characterisation
- Thin film characterisation
- Fabrication of electronic devices by printing
- Sensors
- Electronics

Experience in any of the following research areas and experimental techniques would also be *desirable*:

- Inkjet micro-deposition.
- Characterisation of thin films.
- AFM, optical and electron microscopy

You will be working as part of a large research team and will be expected to communicate results at project meetings, in written reports and to industrial collaborators. Communication skills and team-working skills are therefore essential. We therefore seek highly motivated candidates who would enjoy working in a challenging environment. The position will be particularly suited to you if you are interested in both fundamental and applied aspects of science.

Details on OMIC can be found at:

<http://www.omic.org.uk>