UNIVERSITY OF SURREY

Research Role Profile

Job Title:	Research Fellow in Nanoscale Electronic Devices and Circuits

Responsible to:	Principal investigator

Responsible for:	Not applicable

Job Summary and Purpose:
To undertake research in accordance with the specified research project(s) under the supervision of the principal investigator.

Main Responsibilities/Activities
To undertake a range of research activities within a specified research area, assuming responsibility for specific areas of projects and making use of new research techniques and methods, in consultation with the research supervisor. Using initiative and creativity to identify areas for research develop new research methods and extend the research portfolio. Analysing and interpreting results of own research. Write up results and prepare papers for submission to appropriate journals and conferences, and other outputs as required and/or appropriate. Attend appropriate conferences for the purpose of disseminating research results of personal development. The post holder may also contribute to writing bids for research grants and will contribute to collaborative decision making with colleagues in related areas of research. Collaborate with the research project team across multiple University and industry partners on joint research challenges and research integration to develop new tools and technologies. Continually update knowledge and develop skills, and translate knowledge of advances in the area into research activity. Pursue and advocate responsible and open research and innovation to ensure ethical, fair and inclusive advances in science, technology and use of data. To plan and manage own research activity in collaboration with others, including activities aimed at building personal leadership and resilience. To carry out administrative tasks associated with specified research funding, for example risk assessment of research activities, organisation of project meetings and documentation. Implementation of procedures required to ensure accurate and timely formal reporting and financial control. To contribute to teaching in the Faculty by carrying out student supervision within the post holder's area of expertise and under the direct guidance of a member of departmental academic staff, as appropriate. The post holder may occasionally be required to supervise more junior research staff.

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Person Specification
The post holder must have: A doctoral degree in a relevant discipline (although individuals who have almost completed a doctoral degree may be appointed). Consideration may also be given to individuals who do not hold a doctoral degree but have required skills based on a number of years experience in specified / relevant fields The post holder will have authority over some aspects of project work and must be capable of providing academic judgement, offering original and creative thoughts and be able to interpret and analyse results.

Relationships and Contacts
Direct responsibility to the principal investigator or academic supervisor. The post holder may be asked to serve on a relevant Faculty committee. There may be additional reporting and liaison responsibilities to external funding bodies or sponsors. The post holder may work on original research tasks with colleagues in other institutions.

Special Requirements
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All staff are expected to:

- Positively support equality of opportunity and equity of treatment to colleagues and students in accordance with the University of Surrey Equal Opportunities policy.
- Help maintain a safe working environment by:
  - Attending training in Health and Safety requirements as necessary, both on appointment and as changes in duties and techniques demand
  - Following local codes of safe working practices and the University of Surrey Health and Safety Policy
- Undertake such other duties within the scope of the post as may be requested by your Manager.

Research Role Profile

Addendum to Role Profile

Job Title:	Research Fellow in Nanoscale Electronic Devices and Circuits

Job Summary and Purpose:

This information sheet should be read in conjunction with the accompanying generic Research RA1A Role Profile and will be used for shortlisting processes. More specifically the post holder will be expected to:

We seek a Research Fellow in Nanoscale Electronic Devices and Circuits, beginning 15 October 2024 or soon after, for up to 29 months full time (or part-time by mutual agreement). The Fellow will take a leading role, as matching their interest and expertise, in aspects of design, fabrication or characterisation of novel transistor structures, circuits and applications. The work forms part of the Multipurpose Electronics Toolkit using Suspended Membranes: towards Systems on Nothing research project, awarded to principal investigator Dr Radu Sporea, who will oversee the work. The post will be held at the Advanced Technology Institute, University of Surrey and will likely involve significant collaboration and exchanges with project partners, suppliers and investors, building on the work described in our publication which introduced the concept.

The successful candidate will have a background in nanoscale device fabrication and characterization. A proven track record supported by academic publications will be essential for efficient delivery of the work programme.

You will be joining a diverse and welcoming team, in a professional, yet relaxed work environment where the focus is placed on results, continuous development and wellbeing. Apart from conducting the research and publishing the results, tasks will also include assisting the Academic with research proposal writing, commercialisation activities, dissemination of results (both to the scientific and industrial communities and to the general public) and contributing to the team's award-winning teaching track record. Significant interaction with project partners is encouraged, and the dissemination strategy may involve national and international travel, with many personal and career development opportunities.

The Advanced Technology Institute (ATI) is a leading multidisciplinary research facility in the fields of nanotechnology, energy, and large area electronics with fabrication, characterization and numerical modelling capabilities well suited to the project.

The University of Surrey is a global university with a world-class research profile and an enterprising spirit, located in one of the safest counties in England, within 35 minutes of London by train and minutes away from the Surrey Hills, an Area of Outstanding Natural Beauty. Recent investments have seen the opening of a world-class Sports Park and important updates to central facilities.

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The University is committed to equality and diversity. Research staff at the ATI are supported and encouraged in their career development through mentoring and early career researcher training. The institute fosters a collegial and collaborative atmosphere, in which individuals are valued for the varied skills and perspectives they bring.

For further information, contact Dr Radu Sporea at r.a.sporea@surrey.ac.uk

Main Responsibilities/Activities

Main responsibilities include:

- Conducting the core research in accordance with objectives and methodology identified jointly with the supervisor, which make the most of the successful candidate's interest and expertise, in aspects of design, fabrication, analysis or characterisation of novel electronic devices, specifically source-gated transistors. along with their associated applications.
- Publication of research results in top journals and presentations at top conferences;
- Dissemination of the above to the wider public;
- Assistance with writing new proposals, IP protection documents, etc., where appropriate;
- Assistance in establishing activities designed to transfer technology or commercialise intellectual property present at the beginning of the project or arising during the project;
- Identification of opportunities of collaborating within the institution and with external partners.

Person Specification

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The ideal candidate will be able to demonstrate the majority of the following:

- A PhD (or planned award of a PhD in the first 6 months of the contract) in Electronics, Physics, Semiconductors, Chemistry, or Material Science
- A good understanding of source-gated thin-film transistor fabrication and operation;
- Experience in nano/micro-electronic device fabrication, primarily using focused ion beam (FIB) techniques; photolithography and additive manufacturing experience desirable;
- Experience in analysis of materials and nano/micro-scale devices using a variety of optical and electronic techniques.
- A proven track record of delivering high quality research and academic writing in a timely manner;
- A publication record commensurate with the experience in the field;
- Ability to work independently;
- Ability to work together and integrate with a diverse research team;
- Ability to interact with project partners, both industrial and academic;
- Communication and presentation skills equally applicable to academic, industrial and lay person interaction.

Useful supplementary skills include:

- A deep understanding of contact or quantum effects at material interfaces;
- A proven track record of designing, fabricating or manipulating nano/micro-scale devices based on crystalline semiconductor membranes and related thin films.
- Graphical presentation skills.

Relationships and Contacts

Reporting to Principal Investigator, Dr Radu Sporea

Contact Dr Radu Sporea, r.a.sporea@surrey.ac.uk