

Research Role Profile

Job Title:	Research Fellow (1A)
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Responsible to:	Principal investigator
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Responsible for:	Not applicable
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Job Summary and Purpose:

To undertake research and development under the supervision of the principal investigator on the production of organic photovoltaic (OPV) solar cells incorporating laser-deposited metal nanoparticles which enhance plasmonic light coupling.

Main Responsibilities/Activities

To undertake a range of research and development activities in the production of enhanced OPV, PPV or hybrid solar cells on a research programme whose aim is to lower the cost of solar cells. Assuming responsibility, in consultation with the Principal Investigator for the delivery of the projects objectives in a timely fashion. This includes laboratory experimentation, critical evaluation and interpretation, computer-based theoretical modelling, data analysis and evaluation, library research, and reporting of findings.

Using initiative and creativity to identify areas for research develop new research methods and extend the research, development and application portfolio. Analysing and interpreting results of own research. Write up results and prepare reports for both academic and technical, non-specialist audiences. The post-holder will also prepare scientific papers and attend appropriate conferences for the purpose of disseminating research results and for personal development. The post holder may also contribute to writing bids for research grants and will contribute to collaborative decision making with colleagues in areas of research.

Continually update knowledge and develop skills, and translate knowledge of advances in the area into research activity.

To plan and manage the delivery of project activity. To carry out administrative tasks associated with the 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 assist in the training and supervision of post-graduate researchers associated with the project who use the facilities of the ATI. Liaise with collaborating researchers involved in the project external to the ATI.

Research Role Profile

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 the 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. There will be additional reporting and liaison responsibilities to external funding bodies or sponsors. The post-holder will work on original research tasks with collaborators involved in the project. The post-holder will assist in developing and representing the ATI as a recognised centre of excellence.

Special Requirements

The post-holder will document work in anticipation of subsequent technology transfer of successful development.

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.

Addendum to Role Profile

Job Title:	Research Fellow (1A)
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Responsible to:	Professor Ravi Silva
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Responsible for:	Not applicable
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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:

The RA will be required to investigate the technical challenges involved in the production of OPV, PPV or hybrid solar devices with the aim of transferring the knowledge gained to scalable large area techniques. They will be expected to attend project progress meetings, where they will present their results to the Principle Investigator and to the project collaborators, and will be expected to present those results to a wider audience through scientific articles and conference presentations where appropriate. They will be involved in the preparation and delivery of progress reports to the project coordinator, and will assist in the identification of complementary funding to extend the research. They are also expected to help support existing activities and PhD students working within the research group and in particular those associated with the project.

Main Responsibilities/Activities

The aim of the project is to develop manufacturing pilot lines that will combine smart technologies with smart nanomaterials for large area deployable technologies to lower the cost of solar cells. In particular, the applicant will be involved in the experimental development of small area OPV, PPV or hybrid devices supported by computational modeling optimization, with an aim of knowledge transfer to large area scalable manufacturing technology.

The project involves the diverse fields of nanomaterials characterisation, semiconductor device production and theoretical modeling, and training in suitable experimental and theoretical methods will be available where necessary.

The RA is expected to interact with other group members while maintaining responsibility for ensuring that the project deliverables and milestones are met. Specific activities/responsibilities are:

- The development of small area OPV devices (<1 cm²) and larger area modules with high power conversion efficiencies on flexible polymer substrates.
- The incorporation of inorganics including nanoparticles in the OPV or PPV devices using direct deposition and solution processing methods.
- Transfer of the knowledge gained at small scales to the Roll-2-Roll manufacturing technology being developed elsewhere in the project.
- To write technical reports, proposals and paper publications and to make oral and poster presentations at conferences, technical meetings etc.

Addendum to Role Profile

- To collate and deliver periodic project reports to the project coordinator as required.
- To support the training and development of the PhD students associated with the project.

Person Specification

The post holder must have:

Essential:

- A good honours degree
- A PhD in a relevant area of Physics, Electronic or Electrical Engineering.
- Established research experience in semiconductor device physics
- Experience in report and scientific publication writing
- Willingness to work proactively and independently

Desirable:

- Experience of working in a clean room environment
- Experience in electronic device fabrication.
- Experience of a range of electronic measurement techniques
- Excellent oral and written skills

Relationships and Contacts

- Work well in a multi-disciplinary team including personnel from the ATI and research collaborators external to the ATI.
- Confidently and competently liaise with, and present the research to, external societal, technical and commercial groups with an interest in the work
- Ensure that all research activities undertaken are in compliance with the 'Research Code of Conduct' operated by the University of Surrey.
- Ensure compliance with health and safety requirements in all aspects of work.

Special Requirements

- To collate and deliver periodic project reports to the project coordinator as required.