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| Last updated: | 15/6/20 |

**JOB DESCRIPTION**

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| Post title: | **Research Fellow** | | |
| School/Department: | Electronics and Computer Science | | |
| Faculty: | Engineering and Physical Sciences | | |
| Career Pathway: | Education, Research and Enterprise (ERE) | Level: | 4 |
| \*ERE category: | Research pathway | | |
| Posts responsible to: | Principal Investigator (PI -Stephen Beeby) | | |
| Posts responsible for: | None | | |
| Post base: | Non Office-based (see job hazard analysis) | | |

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| Job purpose |
| To undertake research in accordance with the objectives of the Smart Textiles for Regional Industry and Smart Specialisation Sectors (SmartT) project. The research will involve the design and develop a range of Smart Inks that, on electrical stimulation, emit light. This will involve close co-operation with Chemists working on the project who will modify at the molecular level the light emitting component of the inks. These molecules must be developed into an ink format that can be printed or spray coated onto a textiles substrate and form part of a light emitting cell (LEC). The inks will cover a wide range of wavelengths from UV to the full visible spectrum. The structure of the LEC will require optimising along with the light emitting ink on order to achieve the highest possible levels of light output from a given electrical stimulus. |

| Key accountabilities/primary responsibilities | | % Time |
| --- | --- | --- |
|  | To develop and carry out an area of personal research this will involve developing printable light emitting inks compatible with textiles (i.e. flexible and low temperature). | 30 % |
|  | To optimise light emitting cell structure and maximise light emission. | 30 % |
|  | To develop a demonstrator textile system based on these materials and structures. | 15 % |
|  | Regularly disseminate findings by taking the lead in preparing publication materials for referred journals, presenting results at conferences, or exhibiting work at other appropriate events. | 5 % |
|  | Collaborate/work on original research tasks with colleagues in other institutions. | 5 % |
|  | 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. | 5 % |
|  | Contribute to the writing of bids for research funding. | 5 % |
|  | Any other duties as allocated by the line manager following consultation with the post holder. | 5 % |

| Internal and external relationships |
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| Direct responsibility to holder of research award Prof S P Beeby and project Co-Investigators at Southampton.  Collaborators/colleagues in other work areas and institutions. |

| Special Requirements |
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| To attend project meetings with project partners in norther France and national and international conferences for the purpose of disseminating research results.  *Applications for Research Fellow positions will be considered from candidates who are working towards or nearing completion of a relevant PhD qualification. The title of Research Fellow will be applied upon successful completion of the PhD. Prior to the qualification being awarded the title of* ***Senior Research Assistant*** *will be given.* |

**PERSON SPECIFICATION**

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| Criteria | Essential | Desirable | How to be assessed |
| Qualifications, knowledge and experience | PhD or equivalent professional qualifications and experience in Electronics engineering or material science  Detailed understanding and knowledge of light emitting materials, devices and printed electronics | Knowledge of textile engineering and electronic textiles  Experience in material development and testing for printed electronic devices  Knowledge of light emitting devices  Experience of working with/collaborating with industry  Generating reports for clients  Knowledge of electronic circuit design | CV and interview |
| Planning and organising | Able to organise own research activities to deadline and quality standards |  | CV and interview |
| Problem solving and initiative | Able to develop understanding of complex problems and apply in-depth knowledge to address them  Able to develop original techniques/methods |  | CV and interview |
| Management and teamwork | Able to supervise work of junior research staff, delegating effectively  Able to contribute to School/Department management and administrative processes  Work effectively in a team, understanding the strengths and weaknesses of others to help teamwork development |  | CV and interview |
| Communicating and influencing | Communicate new and complex information effectively, both verbally and in writing, engaging the interest and enthusiasm of the target audience  Able to present research results at group meetings and conferences  Able to write up research results for publication in leading peer-viewed journals  Work proactively with colleagues in other work areas/institutions, contributing specialist knowledge to achieve outcomes  Experience of publishing research papers |  | CV and interview |
| Other skills and behaviours | Understanding of relevant Health & Safety issues  Proactive in promoting a working environment that is inclusive and engaging; recognising the value diversity brings. |  | CV and interview |
| Special requirements | Able to attend national and international conferences to present research results |  | CV and interview |

**JOB HAZARD ANALYSIS**

**Is this an office-based post?**

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| Yes | If this post is an office-based job with routine office hazards (eg: use of VDU), no further information needs to be supplied. Do not complete the section below. |
| No | If this post is not office-based or has some hazards other than routine office (eg: more than use of VDU) please complete the analysis below.  Hiring managers are asked to complete this section as accurately as possible to ensure the safety of the post-holder. |

## - HR will send a full PEHQ to all applicants for this position. Please note, if full health clearance is required for a role, this will apply to all individuals, including existing members of staff.

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| **ENVIRONMENTAL EXPOSURES** | **Occasionally**  (<30% of time) | **Frequently**  (30-60% of time) | **Constantly**  (> 60% of time) |
| Outside work | N/A |  |  |
| Extremes of temperature (eg: fridge/ furnace) | N/A |  |  |
| ## Potential for exposure to body fluids | N/A |  |  |
| ## Noise (greater than 80 dba - 8 hrs twa) | N/A |  |  |
| ## Exposure to hazardous substances (eg: solvents, liquids, dust, fumes, biohazards). Specify below:  Ink ingredients and solvents for cleaning |  | ✓ |  |
| Frequent hand washing | ✓ |  |  |
| Ionising radiation | N/A |  |  |
| **EQUIPMENT/TOOLS/MACHINES USED** | | | |
| ## Food handling | N/A |  |  |
| ## Driving university vehicles(eg: car/van/LGV/PCV) | N/A |  |  |
| ## Use of latex gloves (prohibited unless specific clinical necessity) | ✓ |  |  |
| ## Vibrating tools (eg: strimmers, hammer drill, lawnmowers) | N/A |  |  |
| **PHYSICAL ABILITIES** | | | |
| Load manual handling | N/A |  |  |
| Repetitive crouching/kneeling/stooping | N/A |  |  |
| Repetitive pulling/pushing | N/A |  |  |
| Repetitive lifting | N/A |  |  |
| Standing for prolonged periods | N/A |  |  |
| Repetitive climbing (ie: steps, stools, ladders, stairs) | N/A |  |  |
| Fine motor grips (eg: pipetting) | N/A |  |  |
| Gross motor grips | N/A |  |  |
| Repetitive reaching below shoulder height | N/A |  |  |
| Repetitive reaching at shoulder height | N/A |  |  |
| Repetitive reaching above shoulder height | N/A |  |  |
| **PSYCHOSOCIAL ISSUES** | | | |
| Face to face contact with public | N/A |  |  |
| Lone working | N/A |  |  |
| ## Shift work/night work/on call duties | N/A |  |  |