**JOB DESCRIPTION**

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| Post title: | Senior Research Fellow: Nanophotonics and Picophotonics | | |
| Academic Unit/Service: | Optoelectronics Research Centre (ORC) / Zepler Institute for Photonics and Nanoelectronics (ZIPN) | | |
| Faculty: | Faculty of Engineering and Physical Sciences (FEPS) | | |
| Career Pathway: | Education, Research and Enterprise (ERE) | Level: | 5 |
| \*ERE category: | Research pathway | | |
| Posts responsible to: | Head of Nanophotonics & Metamaterials group | | |
| Posts responsible for: | N/A | | |
| Post base: | Office- and non-office-based (see job hazard analysis) | | |

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| Job purpose |
| To plan and deliver research related to the EPSRC Programme on “Next-generation Metrology Enabled by Nanophotonics” under the supervision of the award holders.  To undertake leadership, management, and engagement activities. |

| Key accountabilities/primary responsibilities | | % Time |
| --- | --- | --- |
|  | Plan and project manage innovative research in accordance with a defined research programme, including supervising other project team members, and collaborative work with UK/international partners. | 60 % |
|  | Establish/maintain an international reputation by regularly disseminating findings - taking the lead in preparing publication materials for refereed journals, presenting results at conferences, or exhibiting work at other appropriate events. | 15 % |
|  | Carry out administrative tasks associated with specified research funding and smooth running of the research group, for example: risk assessment of research activities, organisation of project meetings and formal reports, liaison with external organisations including equipment manufacturers, co-supervision of PhD students. | 15 % |
|  | Identify sources of research funding and secure funds through participation in and/or leadership of bids. Contribute to the development and protection of intellectual property. | 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 Head of Nanophotonics & Metamaterials research group.  As a senior member of the group, will coordinate the day-to-day activities of other research staff/students, under the guidance of the Head of Group.  Establishing a good level of trusted cooperation with research staff, technicians, and PhD students in Southampton, as well as UK and international collaborators, will be essential to achieve the smooth running of the project. |

| Special Requirements |
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| Will be required to work in cleanroom facilities and laser laboratories.  Will be required to travel for the purpose of attending national and international conferences (disseminating research results).  May be required to travel for the purpose of working with collaborators at other institutions. |

**PERSON SPECIFICATION**

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| Criteria | Essential | Desirable | How to be assessed |
| Qualifications, knowledge and experience | PhD in Physics or another subject relevant to the field of optics/photonics.  Knowledge and experience in experimental optics/photonics research.  Track record of published research and emerging international reputation in one’s chosen specialist field. | Knowledge and significant experience in development of precise, high-sensitivity optical experiments and instrumentation.  Knowledge and significant experience in theoretical and/or computational electromagnetics; and/or multi-physics modelling (finite element or FDTD);  and/or the application of machine learning.  Practical experience in the application of planar/lithographic and/or direct-write nanofabrication techniques, and micro/nano-materials characterization techniques. | All by interview, publication record, educational certificates and references |
| Planning and organising | Track record in the organization of a range of research activities to deadline and quality standards, ensuring plans complement broader research strategy. | Able to develop innovative research funding proposals. |
| Problem solving and initiative | Demonstrated ability to develop understanding of the physics of complex problems and apply in-depth knowledge to address them;  Track record in development of original techniques/methods. |  |
| Management and teamwork | Able to coordinate and lead others in a research project team, delegating effectively and understanding the strengths and weaknesses of others.  Able to undertake coordinating role in research group management and administrative processes, and to contribute to School management and administrative processes.  Able to monitor and manage resources and budgets. |  |
| Communicating and influencing | Able to communicate new and complex information effectively, both verbally and in writing, engaging the interest and enthusiasm of the target audience.  Track record of presenting research results at international conferences.  Track record in writing up research results for publication in leading peer-viewed journals.  Able to persuade and influence others in order to foster and maintain relationships, and to resolve tensions/difficulties as they arise.  Able to work proactively with colleagues in other work areas/institutions, contributing specialist knowledge to achieve outcomes |  |
| Other skills and behaviours | Understanding of relevant Health & Safety issues  Positive attitude to colleagues and students |  |
| Special requirements | Able to attend national and international conferences to present research results |  |

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