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| Last updated: | 22th June 2024 |

**JOB DESCRIPTION**

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| Post title: | **Research Technician** |
| School/Department: | ZIPN/ORC |
| Faculty: | Faculty of Physical Sciences and Engineering |
| Career Pathway: | Technical and Experimental (TAE) | Level: | 4 |
| Posts responsible to: | Lv5 ERE |
| Posts responsible for: | N/A |
| Post base: | Office-based/Non Office-based (see job hazard analysis) |

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| Job purpose |
| You will support the Silicon Photonics Team by organising and managing the day-to-day operation of Characterisation Laboratories in the Southampton Nanofabrication Cleanroom (SNC)You will be responsible for several specialist tools housed within the cleanroom facility including deposition, lithography, and etching equipment to provide fabrication support for project activities within the Silicon Photonics Group. You will develop and characterise processes that can be used for several photonics platforms. You will offer specialist technical support and advice to all users of the Southampton Nanofabrication Cleanroom (SNC) and provide additional support to cleanroom technical staff.  |

| Key accountabilities/primary responsibilities | % Time |
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|  | Providing specialist technical and fabrication support for silicon photonics project activities is an important element of supporting the team. You will:* manage the photonic characterisation laboratories effectively,
* develop and improve processes on specialist cleanroom equipment that can be used for all Silicon Photonics platforms.
* Be responsible of the day-to-day development of processes such as material deposition and etching, substrate cleaning, annealing processes, and material characterisation.
* Perform fabrication and laboratory experimentation, literature review, critical evaluation and interpretation, fault finding and design of experiments for developing new processes identified as critical to the success of research activities.
 | 45 % |
|  | Providing organisation and time management will ensure the smooth operation of the Clean Room Facilities. You will:* Plan, define and monitor process flows and progress of projects.
* Plan and disseminate key equipment calibration changes; for example, clamp changes on etching tools.
* Identify bottlenecks in process flows and establish new working methods to resolve delays.
* Carry out administrative tasks associated with laboratories and projects, for example, risk assessment of research activities, participation in project meetings and documentation.
 | 20 % |
|  | Perform the fabrication required for the projects. This will include lithography, etching, cleaning, material deposition, annealing processes, and SEM characterisation. | 10 % |
|  | Train and assist staff, students, and external visitors in the safe use of laboratory equipment and a range of nanofabrication equipment. | 5 % |
|  | Liaise with customer and project partners to ensure compatibility of processes. | 5 % |
|  | Characterise optical devices and provide feedback from process development activities. | 2.5 % |
|  | Attend internal and external meetings to ensure the work unit issues are represented. | 2.5 % |
|  | Any other duties as allocated by the line manager.  | 10 % |

| Internal and external relationships |
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| Other members of the department/University staffExternal customers and partnersRelevant suppliers and external contacts |

| Special Requirements |
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| Interest in working in optical characterisation laboratoriesInterest in working in Class 100 and 1000 cleanroomsProcess development and characterisation skillsGood awareness of health and safety procedures |

**PERSON SPECIFICATION**

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| Criteria | Essential | Desirable | How to be assessed |
| Qualifications, knowledge and experience | Skill level equivalent to achievement of HND, Degree, NVQ4 or basic professional qualification.Experience in a laboratory environment, with proven experience of successfully planning and progressing work activities | Degree in science related subject or equivalent industry experiencePhD in science related subjectExperience performing optical characterisation of photonic integrated circuitsKnowledge of silicon photonics fabrication techniques Experience of chemical handling and waste disposal | Application, interview and references |
| Planning and organising | Proven ability to plan and deliver research or engineering activities to deadline and quality standardsOrganisation and time management skills. Able to set and plan short/medium term priorities in line with team and execute accordinglyAble to progress a broad range of activities within professional guidelines and in support of University policy |  | Interview and references |
| Problem solving and initiative | Ability to apply specialist technical knowledge to analyse complex problems and recommend solutions/plans of action. | Familiarity with general diagnostic test equipment, able to conduct routine maintenance and repair | Interview and references |
| Management and teamwork | Able to proactively work with colleagues in other work areas to achieve outcomes |  | Interview and references |
| Communicating and influencing | Able to provide accurate and timely specialist guidance on complex issuesAble to use influencing and negotiating skills to develop understanding and gain co-operation  |  | Interview and references |
| Special requirements | Willingness to undertake Health and Safety training specific to roleWilling to work out-of-hours occasionally |  | 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. |
| [x]  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) | ü |  |  |
| ## Exposure to hazardous substances (eg: solvents, liquids, dust, fumes, biohazards). Specify below: |  | ü |  |
| Frequent hand washing | ü |  |  |
| 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) | n/a |  |  |
| ## Vibrating tools (eg: strimmers, hammer drill, lawnmowers)  | n/a |  |  |
| **PHYSICAL ABILITIES** |
| Load manual handling | n/a |  |  |
| Repetitive crouching/kneeling/stooping | ü |  |  |
| Repetitive pulling/pushing | ü |  |  |
| Repetitive lifting | ü |  |  |
| Standing for prolonged periods |  | ü |  |
| Repetitive climbing (ie: steps, stools, ladders, stairs) | n/a |  |  |
| Fine motor grips (eg: pipetting) | ü |  |  |
| Gross motor grips | ü |  |  |
| Repetitive reaching below shoulder height | n/a |  |  |
| Repetitive reaching at shoulder height | ü |  |  |
| Repetitive reaching above shoulder height | n/a |  |  |
| **PSYCHOSOCIAL ISSUES** |
| Face to face contact with public | ü |  |  |
| Lone working | ü |  |  |
| ## Shift work/night work/on call duties  | n/a |  |  |