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| Last updated: | October 2024 |

**JOB DESCRIPTION**

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

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| Job purpose |
| Use specialist knowledge to manage and provide fabrication support for project activities within the Silicon Photonics Group, developing and characterising processes that can be used for several photonics platforms. To provide specialist technical support and advice to all users of the Southampton Nanofabrication Cleanroom (SNC) and its external customers. To provide additional support to cleanroom technical staff. |

| Key accountabilities/primary responsibilities | | % Time |
| --- | --- | --- |
|  | Provide specialist technical and fabrication support for the project activities; manage own time to develop and improve processes on specialist cleanroom equipment that can be used for all Silicon Photonics platforms. This will include the day-to-day development of processes such as material deposition and etching, substrate cleaning, annealing processes and material characterisation. Responsibilities also include 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. | 40% |
|  | 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 bottle-necks in process flows and establish new working methods to resolve delays. Carry out administrative tasks associated with the projects, for example, risk assessment of research activities, participation in project meetings and documentation. | 15% |
|  | Perform the fabrication required for the projects. This will include etching, cleaning, material deposition and annealing processes. | 10% |
|  | Use 10% of your time to pursue personal and career development opportunities in line with the C-PIC EDI policy | 10% |
|  | Train and assist staff, students and external visitors in the safe use of a range of nanofabrication equipment. | 5%  5% |
|  | Liaise with project partners to ensure compatibility of processes between partners. |
|  | Characterise optical devices and provide feedback from process development activities. | 5 % |
|  | Attend internal and external meetings to ensure the work unit issues are represented. | 5 % |
|  | Any other duties as allocated by the line manager. | 5 % |

| Internal and external relationships |
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| Other members of the department/University staff.  External customers  Relevant suppliers and external contacts |

| Special Requirements |
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| Work in Class 100 and 1000 cleanrooms  Strong process development and characterisation skills  Good awareness of health and safety procedures  Late work from 1pm to 9pm on two days a week |

**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 in science or relevant discipline or equivalent industry experience  Experience in a laboratory environment, with proven experience of successfully planning and progressing work activities | PhD in science related subject  Experience performing optical characterisation of photonic integrated circuits  Knowledge 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 standards  Organisation and time management skills. Able to set and plan short/medium term priorities in line with team and execute accordingly  Able 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 issues  Able 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 role  Proactive in promoting a working environment that is inclusive and engaging; recognising the value diversity brings.  Willing to work out-of-hours occasionally | IosH/NEBOSH | 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) | 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 |  |  |