

Job Description

Post title: Senior Research Technician

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School / Department:	Optoelectronics Research Centre
Faculty / Directorate:	Faculty of Engineering and Physical Sciences
Job Family:	Technical and Experimental (TAE)
Grade:	Level 4
ERE Pathway (if applicable):	Not applicable
Post reporting to:	Prof. Austin Taranta
Post line report(s):	None
Post base location:	Campus : Highfield, ORC

Job purpose: The role supports research and external collaborative programmes through the independent delivery of complex hollow-core optical fibre characterisation, imaging, modelling and data-analysis activities.

To manage and develop technical data resources, undertake specialist optical measurements, deploy established simulation tools, analyse experimental and computational results, and provide technical recommendations regarding fibre performance, suitability and process capability.

Contribute to the continued development, standardisation and quality assurance of fibre characterisation practices within the Hollow Core Fibre Group.

Key accountabilities and indicative time allocation:

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| 1. | 10% |
| <p>Apply a full understanding of a technical or experimental field to manage and deliver a range of complex work activities and/or oversee a technical or specialist support function.</p> <p>Deliver complex hollow-core fibre characterisation activities including fibre preparation, cutback measurements, attenuation measurements, optical time-domain reflectometry (OTDR), and experimental characterisation activities, in support of major research projects.</p> | |
| 2. | 15% |
| <p>Manage and deliver short and medium-term projects, work assignments and process changes and/or contribute to longer-term or more significant projects and change programmes as part of a wider project team.</p> <p>Support major research and collaborative programmes through the planning, coordination and delivery of characterisation work packages, measurements, data collection, technical reporting and project deliverables. Coordinate competing measurement, microscopy, modelling and database activities across multiple projects, ensuring effective use of laboratory resources and timely completion of technical work.</p> | |

3.	20%
Manage and deliver a defined technical or specialist support function. Define, develop, review and refine working practices to meet service and/or quality standards and objectives. Adapt established fibre characterisation, microscopy and data-analysis methods to accommodate diverse fibre designs, project requirements and challenging experimental conditions. Manage the hollow-core fibre characterisation database and associated data-management processes. Develop and maintain database structures, data traceability procedures and reporting practices to ensure the integrity, accessibility and quality of experimental and modelling data.	
4.	10%
Provide specialist technical advice, guidance and recommendations on broadly defined, complex issues, including the design, development and application of new and existing specialist techniques, equipment and/or procedures. Prepare and present technical results, analyses and recommendations to research teams and external collaborators, explaining measurement outcomes, data quality, performance trends and experimental findings to support project objectives. Contribute technical data, figures, analysis and supporting text for research publications, technical reports and other dissemination activities.	
5.	10%
Analyse, evaluate and interpret complex test results and other specialised information, data or concepts. Identify gaps in understanding, and methods of addressing these. Identify themes, consider implications and propose or develop solutions as appropriate. Analyse and compare experimental and simulation datasets. Monitor fibre performance trends, assess process capability, identify anomalies, and provide evidence-based recommendations to improve manufacturing and characterisation outcomes.	
6.	10%
Proactively work with and influence peers and other colleagues to help achieve objectives and coordinate technical activities across different parts of the University. Collaborate with researchers, technicians, students and external partners to coordinate characterisation activities, maintain technical standards and ensure efficient delivery of project objectives. Provide training, practical assistance and specialist advice relating to fibre characterisation, microscopy and data-management activities.	
7.	10%
Monitor and maintain appropriate records and reports to meet internal and external requirements (e.g., audit and compliance reports, service level agreements, health and safety records). Maintain detailed technical records relating to fibre samples, characterisation measurements, microscopy results, simulation outputs, laboratory activities and health and safety requirements.	
8.	5%
Line manage or supervise junior colleagues performing a range of complex, mostly standardised, technical or experimental activities. Plan and prioritise short and medium-term work, monitor progress, conduct appraisals, formulate development plans and provide advice, guidance and coaching as required. Conduct recruitment, induction and probation activities as required.	
9.	5%
Manage or oversee assigned resources, monitor relevant budgets and contribute to short and medium-term resource planning processes. Advise on future resource requirements within own area.	

Monitor equipment usage, consumables and technical resource requirements associated with fibre characterisation and microscopy activities. Contribute to planning for future technical capability and infrastructure needs.

10.

5%

Any other duties as allocated by the line manager following consultation with the post holder.

Internal and external relationships:

Academic and technical staff within the Optoelectronics Research Centre.

Researchers, students and collaborators involved in hollow-core fibre research, manufacturing and characterisation.

University technical facilities and specialist support services.

External Industry and academic collaborators.

Suppliers and manufacturers of specialist laboratory, optical and microscopy equipment.

Special requirements:

Regular work within optical-fibre, microscopy and characterisation laboratories. The post holder will be expected to complete and maintain relevant laboratory, laser safety, microscopy, chemical safety and equipment-specific training as required.

Person Specification – Skills and Competencies

All essential and desirable criteria outlined in this Person Specification will be assessed through a combination of recruitment application and CV, and where applicable numerical or written assessment.

Knowledge, Experience and Qualifications

Essential

- Substantial and authoritative practical knowledge and experience in the required operational discipline, supported by general theoretical understanding.
- The required level of knowledge and understanding will normally have been gained through some or all of the following:
 - Considerable work experience
 - Vocational training
 - Formal qualification(s) equivalent to Level 5 or 6 of the [Regulated Qualifications Framework](#) e.g. foundation degree or degree with honours, or Level 5 or 6 award, certificate, diploma, NVQ.
- Knowledge, experience and competence may also be evidenced through professional registration:
 - Professional registration at the Registered Scientist (RSci) level will typically indicate partial competence at TAE Level 4.
 - Professional registration at the Incorporated Engineer (IEng) level will typically indicate full competence at TAE Level 4.
- Experience with complex optical, photonic or scientific characterisation activities.
- Experience analysing and interpreting experimental data to support technical decision making.
- Experience managing structured technical data, databases or large experimental datasets.
- Experience selecting and adapting established technical methods to address non-routine problems.

Desirable

- Experience in characterisation of hollow-core optical fibres
- Experience of fibre-optic characterisation techniques including attenuation measurements, OTDR measurements or cutback measurements.
- Experience of scanning electron microscopy.
- Experience of MATLAB, Python, or equivalent scientific analysis and modelling tools.
- Experience of statistical process control or trend analysis.

Teamwork and Communication

Essential

- Delegates and/or collaborates effectively, understanding the strengths and weaknesses of colleagues.
- Works proactively with colleagues and other stakeholders, within and beyond the University, to achieve outcomes.
- Communicates effectively to develop understanding and achieve cooperation.
- Provides clear specialist advice, guidance and recommendations on complex issues.

Desirable

- Experience conveying complex technical information to a diverse group of customers and stakeholders
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Planning, Organisation and Resource Management

Essential

- Plans and progresses a range of work activities within broad professional guidelines and established University policies and procedures.
 - Formulates development plans to meet current skill requirements.
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Problem Solving and Initiative

Essential

- Develops detailed understanding of long-standing and/or complex problems and applies professional knowledge and experience to resolve them.
- Demonstrates an awareness of principles and trends in a professional or specialist field and awareness of how this affects activities in the University.

Desirable

- Strong experience troubleshooting complex opto-electronic and photonics systems and experiments
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Job Hazard Assessment

A full health clearance is required for this role where any hazards marked “^”, using the agreed Occupational Health referral template [available from here](#). Where a full health clearance is required, this will apply to all role holders, including existing members of staff.

Physical Environment

Working outside ^	Not applicable
Exposure to noise levels >80dbA ^	Occasionally <30% Time
Working with dust or fumes ^	Occasionally <30% Time
Working with skin irritants ^	Occasionally <30% Time
Working with chemicals (industrial or cleaning) ^	Occasionally <30% Time
Working in a confined space ^	Not applicable
Working at height ^	Occasionally <30% Time
Working with sewage ^	Not applicable
Contact with cytotoxins ^	Not applicable
Exposure Prone Procedure (EPP) work ^	Not applicable
Contact with clinical specimens or pathology work ^	Not applicable
Direct patient care or patient contact	Not applicable
Exposure to temperature extremes	Occasionally <30% Time
Frequent hand washing	Not applicable
Ionising radiation	Not applicable

Psychological and Social Environment

Working shifts ^	Not applicable
Working nights ^	Not applicable
Lone working	Occasionally <30% Time
Working with children	Not applicable
Exposure to persons with challenging behaviour	Not applicable
Working with larger groups	Occasionally <30% Time

Equipment, Tools and Machines

Working with vibrating machinery or tools ^	Occasionally <30% Time
Driving duties e.g. LGV, PCVs, forklift trucks ^	Not applicable
Food handling	Not applicable
Contact with latex	Not applicable

Physical Abilities

Prolonged physical movements or actions e.g. walking ^	Occasionally <30% Time
Prolonged Standing or Sitting ^	Occasionally <30% Time
Moving or handling heavy loads ^	Occasionally <30% Time
Repetitive pulling or pushing ^	Occasionally <30% Time

Repetitive climbing (steps, stools, ladders, stairs) ^	Not applicable
Repetitive crouching, kneeling or stooping	Occasionally <30% Time
Repetitive lifting	Occasionally <30% Time
Fine motor grips (e.g. pipetting)	Occasionally <30% Time
Repetitive reaching below shoulder height	Occasionally <30% Time
Repetitive reaching at shoulder height	Occasionally <30% Time
Repetitive reaching above shoulder height	Occasionally <30% Time
