1. Job Details

Job title: Senior Research Technician
School/Support Department: Physics
Line manager: Technical Services Manager

2. Job Purpose

Conducting spectroscopy research utilising mainly Raman spectroscopy and Brillouin interferometer techniques.
Designing and developing novel optical devices for spectroscopy and microscopy research under extreme conditions of pressure and temperature.
Co-ordinating and providing technical support within the Condensed Matter Group, which includes maintenance and alignment of high power lasers and X-ray crystallography equipment.
Supervise another technician and the work of M Phys students.

3. Main Responsibilities

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<th>Approx. % of time</th>
<th>Description</th>
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<tr>
<td>50</td>
<td>1. Conduct research, mainly Spectroscopy, on a large variety of substances from amino acids to simple inorganics over a wide region of temperature and pressure.</td>
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<td>15</td>
<td>2. Suggest and discuss research projects with Principal Investigator. Author and co-author papers for publication including drafting text and figures.</td>
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<td>4. Supervision and guidance to M Phys student projects in the molecular spectroscopy lab.</td>
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<td>5. Conduct contracted research for external parties.</td>
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<td>6. Delegate some technical construction work and routine maintenance.</td>
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<td>7. PAT testing and maintenance of equipment and general safety standard checks in Condensed Matter labs.</td>
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<td>8. Construction of equipment fur use in experiments.</td>
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4. Planning and Organising

Prioritising and arranging slots for other departments, such as molecular biology and chemistry wishing to use the facilities. This has also recently included a company outside the university, which pays the University for the jobholder to undertake high pressure and temperature processing of samples using equipment designed by the jobholder. Planning for future equipment purchases as newer technology unfolds.
5. Problem Solving
Problem solving is intrinsic to novel research where the boundaries have to be extended to gain new insight into materials and processes so as to produce publishable results. Striving to produce quality spectra under extreme environments of pressure, temperature and corrosiveness has proved very useful in discovering effects meriting publication.

6. Decision Making
Fully involved in the decision-making processes (team meetings, discussion with P.I.) of important new ventures such as the expansion of COSMIC into High Resolution C.A.R.S.

7. Key Contacts/Relationships
Consultation with academic / research staff with regard to research projects. Consultation with the School Business Development Officer with regard to raising funds for the University from companies interested in utilising the equipment and expertise, and also with regard to possible patenting of novel equipment designed by the jobholder. Involvement with other research establishments such as I.S.I.S. at the Rutherford where the relatively fast spectroscopy data obtained here gives a pointer to the parameters for neutron work.

8. Knowledge, Skills and Experience Needed for the Job
This job requires a researcher qualified to MSc with min. 4 years post qualifying experience. It requires extensive knowledge of spectroscopy and optics with experience of crystallography and some knowledge of chemistry combined with extensive technical skills.

9. Dimensions
Responsibility for overseeing 9 laboratories (total area 420 sq.m.) of the Condensed Matter Group (current complement of 13 teaching staff, 18 PDRAs, and 27 PGs) with respect to maintenance and alignment of equipment, general safety and security. Use of the C.O.S.M.I.C facilities including design of equipment.

10. Job Context and any other relevant information
Jobholder conducts research; designs and develops equipment within the Condensed Matter Group and C.O.S.M.I.C.; provides technical support; and supervises a research technician.