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| Last updated: |  |

**JOB DESCRIPTION**

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| Post title: | **Research Fellow** | | |
| Academic Unit/Service: | Department of Mechanical Engineering | | |
| Faculty: | Faculty of Engineering and Physical Sciences (FEPS) |  |  |
| Career pathway: | ERE | Level: | 4 |
| \*ERE category: | Research | | |
| Posts responsible to: | Monica Ratoi, Lecturer of Lubrication Science | | |
| Posts responsible for: | None | | |
| Post base: | Both: Office-based/Non Office-based (see job hazard analysis) | | |

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| Job purpose |
| To undertake research on the project “Lubrication by Lamellar Liquid Crystals - An in-situ investigation of thin films with Brewster Angle microscopy technology” funded by EPSRC. |

| Key accountabilities/primary responsibilities | | % Time |
| --- | --- | --- |
|  | Develop and carry out a research programme overseen by the award holder. In particular, undertake the development of the bespoke version of optical setup fitted on the tribometer and the experimental characterisation of liquid crystals lubricant films | 60% |
|  | Work in close collaboration with the Research Fellow in Physics, PhD student, project partners and international collaborators | 10 % |
|  | Contribute to the writing of publications and bids for research funding | 10% |
|  | Participate in meetings with project partners and international collaborators; participate in group seminars; collaborate with other research students | 5 % |
|  | Carry out administrative tasks associated with the research project, for example risk assessment of research activities, organisation of project meetings and documentation. Implement procedures required to ensure accurate and timely formal reporting and financial control. | 5 % |
|  | Carry out occasional undergraduate supervision, demonstrating or lecturing duties within own area of expertise, under the direct guidance of a member of departmental academic staff. | 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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| * The award holder: collaborative research work and regular meetings to discuss progress. * Members of the research team led by the award holder. * Industrial project partners and international collaborators * Members of the Energy Technology Group, including other postdoctoral researchers and research students: for briefing, scientific discussion, and consultation. * Members of the relevant international scientific community: for collaboration and dissemination of results. |

| Special Requirements |
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| To attend national and international conferences for the purpose of disseminating research results.  *Applications for Research Fellow positions will be considered from candidates who are working towards or nearing completion of a relevant PhD qualification. The title of Research Fellow will be applied upon successful completion of the PhD. Prior to the qualification being awarded the title of* ***Senior Research Assistant*** *will be given.* |

**PERSON SPECIFICATION**

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| Criteria | Essential | Desirable | How to be assessed |
| Qualifications, knowledge and experience | PhD or equivalent/equivalent professional qualification and experience in Physics, or a related discipline  Strong practical skills  Experience in building, calibrating, and using optical microscopy setups  Knowledge and experience in characterizing lamellar liquid crystals | Research track record in at least one of these fields  Track record in characterizing lamellar liquid crystals  Track record in building and using optical microscopy setups  Knowledge of lamellar liquid crystals  Knowledge of modern methods of data analysis relevant to the project | CV, publications, references, interview  Examples of experimental setups built, calibrated, used and the related, own publications  CV,  publications, references, interview |
| Planning and organising | Ability to conduct research both independently and in collaboration with peers.  Ability to organise own research activities to deadline and quality standards. |  | CV,  publications, references, interview |
| Problem solving and initiative | Ability to develop understanding of complex problems and apply in depth knowledge to address them through experiments and fabrication procedures. |  | CV,  publications, references, interview |
| Management and teamwork | Able to supervise work of junior researchers, delegating effectively.  Work effectively in a team, understanding the strengths and weaknesses of others to help teamwork development. | Experience with collaborative work with theoreticians and experimentalists.  Able to contribute to School/Department learning and research environment as well as management processes | CV,  publications, references, interview |
| Communicating and influencing | Communicate new and complex information effectively, both verbally and in writing, engaging the interest and enthusiasm of the target audience  Able to present research results at group meetings and conferences  Work proactively with colleagues in other work areas/institutions, contributing specialist knowledge to achieve outcomes | Ability to write up research results for publication in leading peer-reviewed journals. | CV,  publications, references, 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. |
|  | 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) | x |  |  |
| ## 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: | x |  |  |
| 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 | x |  |  |
| 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 | x |  |  |
| ## Shift work/night work/on call duties |  |  |  |