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| Last updated: | August 2020 |

**JOB DESCRIPTION**

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| Post title: | **Research Fellow** | | |
| School/Service: | School of Physics and Astronomy | | |
| Faculty: | Faculty of Engineering and Physical Sciences (FEPS) | | |
| Career pathway: | Education, Research and Enterprise | Level: | 4 |
| \*ERE category: | Research | | |
| Posts responsible to: | Professor of Physics and Astronomy | | |
| 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 “DiG for the Future: Taming disorder in self-assembled materials with topology” funded by Leverhulme. |

| Key accountabilities/primary responsibilities | | % Time |
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|  | Develop and carry out an independent research programme overseen by the award holder. In particular, undertake fabrication of self-assembled and structured soft matter and plasmonic materials and their experimental characterisation. | 65% |
|  | Work in close collaboration with the Research Fellow and PhD student responsible for the modelling part of the project | 10 % |
|  | Contribute to the writing of bids for research funding. | 5% |
|  | Participate in meetings of the Southampton Soft Photonics Systems group; participate in group seminars; collaborate with research students and other members of the group. | 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. * Members of the Soft Photonics System 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, materials science or equivalent subjects  Strong track record in:   1. Fabrication, control and characterisation of self-assembled systems and plasmoic nanoparticles particularly those mediated by liquid crystals. 2. Soft matter and plasmonic self-assembled materials fabrication (eg structured liquid crystals, functionalisation of plasmonic nanoparticles for self-assembly) 3. Photonic gratings, their imaging and spectroscopy     Experience in experimental optical, imaging and spectroscopic analysis of samples  Track record in functional nanomaterials, self assembly, soft matter, imaging and spectroscopy.  Strong practical skills in nanofabrication, soft matter and its functionalisation with nanoparticles. | Research track record in more than one of these fields.  Track record in liquid crystals  Track record in spectroscopic measurements of materials  Knowledge of plasmonics, soft matter and nanophotonics.  Knowledge of modern methods of data analysis relevant to the project  Knowledge of mathematical modelling relevant to the project | CV,  publications, references, interview  Examples of structures and samples fabricated 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  Proactive in promoting a working environment that is inclusive and engaging; recognising the value diversity brings. | 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. |
| 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 |  |  |  |
| 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 |  |  |  |