

JOB DESCRIPTION

Job Title:	Postdoctoral Research Associate
Department / Unit:	School of Engineering, Physical and Mathematical Sciences
Job type	Scientific Research
Grade:	RHUL 7
Accountable to:	Head of NanoPhysics group
Purpose of the Post	
To carry research activity in a field of superconducting quantum technologies in collaboration with research team of Nanophysics group. Assisting with laboratory organisation, experimental procedures, analysis of results, teaching of undergraduate and graduate students. Specialised knowledge to be able to set up equipment for and run experiments and tests for the applicable research area.	
Key Tasks	
To undertake simulations of superconducting coherence devices; to design and fabricate devices based on superconducting nanowires and superconducting qubits. This will include CAD design, clean-room processing, including nano-fabrication based on EB-lithography; to measure the devices in a dilution refrigerator at milliKelvin temperatures.	
Using creativity to analyse and interpret research data and draw conclusions on the outcomes	
Provide technical support for designated research area including maintenance of equipment, lab supplies, databases and webpages, ensuring that all work is carried out in accordance with statutory and Royal Holloway regulations as appropriate.	
Set up and perform experiments in close collaboration and consultation with relevant academic/research colleagues.	
Record, analyse and write up results, maintaining a permanent record of the methodologies and the experiments.	
Prepare and present findings of research activity to colleagues and at scientific meetings	
Contribute to the preparation of grant applications, research presentations and publications as requested.	
Using initiative and creativity to identify areas for research, developing new research methods and extending the research portfolio	
Undergo continued personal professional development	

Other Duties
The duties listed are not exhaustive and may be varied from time to time as dictated by the changing needs of the College. The post holder will be expected to undertake other duties as appropriate and as requested by his/her manager. The post holder will actively follow Royal Holloway policies including Equal Opportunities policies. The post holder will also observe Fire and Health and Safety Regulations. The post holder may be required to work at any of the locations at which the business of Royal Holloway is conducted.
Internal and external relationships
The following list is not exhaustive but the post holder will be required to liaise with: - Members of the research group - Other staff members of the department/school - Colleagues in other universities/other research facilities - Visitors, collaborators and suppliers to the department/school

PERSON SPECIFICATION

This is a specification of the qualifications, experience, skills, knowledge and abilities that are required to effectively carry out the responsibilities of the post (as outlined in the job description) and forms the basis for selecting a candidate

Job Title: PDRA GRADE 7

Department: Physics

	Essential	Desirable	Tested by Application form/Interview/Test
Knowledge, Education, Qualifications and Training PhD or equivalent in a related field of study Knowledge of quantum mechanics. Ability to evaluate quantum systems in dissipative environment, including numerical simulations Knowledge of modern nano-technological methods and micro-fabrication Supervisory or management training	X X X	 X	Application form Application form, interview Application form, interview Application form
Skills and Abilities Skill of Electron Beam Lithography Skill of operation of the dilution refrigerators Excellent oral and written communication skills Ability to analyse, specify and communicate administrative requirements Skill in microwave characterization of superconducting qubits by network and spectrum analysers The ability to relate to students and staff at all levels in a professional and confident manner Use of webpage software to create engaging copy and images	X X X X X X	 X X	Application form, interview Application form, interview Application form, interview Application form, interview Application form, interview Interview Application form, interview
Experience Work experience in the field of experimental superconductivity and Josephson junctions in nano-structures Experience of organising research, managing and motivating research team Experience of writing papers for publication	 X X X	 X X	Application form, interview, publications Application form, interview Application form, interview
Other requirements			

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