



JOB DESCRIPTION

Job Title:	Senior Research Fellow
Department / Unit:	Department of Physics, School of EPMS
Job type	Full-Time, Fixed-Term, Research
Grade:	Grade 8
Accountable to:	Professor John Saunders
Accountable for:	N/A
Purpose of the Post	
To initiate, develop, design and be responsible for the delivery of a programme of high quality research to understand noise in superconducting quantum circuits and its mitigation by a quantum fluid bath, a research programme supported by EPSRC EP/Y022627/1. To lead a team of researchers to achieve the project aims.	
Key Tasks	
To manage and lead a team of researchers to achieve the stated project aims, including the supervision of research students.	
To oversee the setting up and running of the planned experiments, ensuring that experiments are appropriately supervised and supported. To ensure that results are recorded, analysed and written up in a timely fashion. This research will be in liaison with other member of staffs, but the post holder should be able to take full responsibility for the design and execution of studies.	
To effectively collaborate and liaise with research partners at National Physical Laboratory (NPL), supported by EPSRC EP/Y022627/1, and other researchers at NPL.	
To effectively collaborate with project partners: SQMS Quantum Center (Fermilab); Chalmers University, Karlsruhe Institute of Technology; University of Glasgow, Louisiana State University, Google Quantum AI, Oxford Instruments.	
To liaise with National Quantum Computer Centre (NQCC), and UK industry (eg. Oxford Quantum Circuits).	
To manage the research grants in accordance with the University's Financial Regulations and the conditions of the funding body.	
To analyse data and interpret any results obtained, ensure the validity and reliability of data at all times, maintain accurate and complete records of all findings, produce and document the results of such studies.	
To prepare and present findings of research activity to colleagues for review purposes.	
To draft and contribute to publications for submission to refereed journals.	

To attend and present findings at appropriate conferences.
To prepare progress reports on research for funding bodies as required.
To contribute to and participate in knowledge transfer/exchange activities.
To engage in scholarly activities needed to retain up-to-date knowledge of protocols and methods of analysis, for example, by regularly reading and peer reviewing relevant manuscripts, and by attending and contributing to relevant conferences and workshops internationally.
To contribute to methods innovation and the sharing of good practice through seminars and workshops in the department.
To advise on the procurement of specialist equipment related to the unit.
To promote the work of the unit through established communication channels (e.g. conference presentations, social media, web presence).
Any other duties as required by the line manager or Head of Department that are commensurate with the grade.
To seek new areas of research and prepare and submit research bids and proposals that will enhance the reputation of the University.
To contribute to the overall activities of the department as required.
To undertake a limited amount of teaching in relation to subject area.
Other Duties
<ul style="list-style-type: none"> • To undertake appropriate administration tasks • To attend relevant meetings • To undertake any necessary training and/or development • To undertake specific safety responsibilities relevant to individual roles, as set out in the University procedures • Maintain safe workplace practice and procedures in accordance with the requirements of Health and Safety legislation • Maintain an up to date knowledge of relevant statutory Health and Safety legislation and recommendations and attend safety training as required. • To observe and comply with all University policies and regulations <p>The duties listed are not exhaustive and may be varied from time to time as dictated by the changing needs of the University. The post holder will be expected to undertake other duties as appropriate and as requested by their manager.</p> <p>The post holder may be required to work at any of the locations at which the business of Royal Holloway is conducted.</p>
Internal and external relationships
<p>The following list is not exhaustive but the post holder will be required to liaise with:</p> <p>These are described under key tasks</p>

PERSON SPECIFICATION

Details on the qualifications, experience, skills, knowledge and abilities that are needed to fulfil this role are set out below.

Job Title: **Senior Research Fellow**

Department: **Physics**

	Essential	Desirable	Tested by Application Form/Interview/Test
Knowledge, Education, Qualifications and Training			
PhD in relevant subject area	x		<i>Application Form</i>
Prior training in Cryogenics	x		<i>Application Form/ Interview</i>
Prior training in qubit measurement and readout, and associated rf technology	x		<i>Application Form/ Interview</i>
Skills and Abilities			
Computer programming skills (e.g. Python, Labview, C++)	x		<i>Application Form/ Interview</i>
Use of simulation packages (e.g. COMSOL)		x	<i>Application Form/ Interview</i>
Ability to communicate verbally and in writing	x		<i>Interview</i>
Fluency in English	x		<i>Interview</i>
Experience			
Experience in performing experiments at low temperatures.	x		<i>Application Form/ Interview</i>
Experience in the design and testing of experimental cells for low temperature experiments.	x		<i>Application Form/ Interview</i>
Experience of rf technology and qubit measurement	x		<i>Application Form/ Interview</i>
Experience of experiments on superconducting qubits		x	<i>Application Form/ Interview</i>
Clean room / sample preparation experience		x	<i>Application Form/ Interview</i>
Evidence of international networking		x	<i>Application Form/ Interview</i>
Evidence of production of high-quality research outputs (conference papers, publications)	x		<i>Application Form</i>
Other requirements			
An understanding and commitment to the principles of equality, diversity and inclusion	x		<i>Application Form/ Interview</i>

Ability to work in a collaborative team, with national and international partners	x		<i>Application Form/ Interview</i>
Willingness to travel for short term work at partner, if required.	x		<i>Interview</i>
Willingness to engage in knowledge transfer and outreach	x		<i>Interview</i>