

Job Description

Post title	Postdoctoral Research Associate
Faculty / Directorate (Tier 1)	NMES
School / Division / Department (Tier 2)	Physics
Tier 3	
Grade	6.31-6.33 depending on experience [£45,031-47,379 per annum]
Reporting to	Prof. George Booth
Line management	1
Job category	Research
Job function	Not Applicable

Role Purpose

Applicants are sought for a postdoctoral position at the interface of quantum chemistry, condensed matter physics and quantum information theory, for research into novel computational methodology for strongly correlated electronic structure problems.

The position will be held at King's College London, in the research group of Prof. George Booth, with the project also embedded within a wider EPSRC-NSF funded collaboration with research groups at Indiana University and Virginia Tech in the US. The candidate should have experience with at least one of these background areas, as well as development in computational many-body problems, and have (or be near completion of) a PhD in a relevant area of theoretical physics / chemistry.

The position will be held within the Theory and Simulation of Condensed Matter group, located on the Strand campus of KCL, and is expected to run until 31st August 2029.

For an informal discussion on suitability for the role, please contact Prof George Booth at george.booth@kcl.ac.uk.

Key Responsibilities

We are seeking a motivated postdoctoral research associate, keen to work in a team, and be embedded in a wider project involving the development of scalable computational methods for electronic structure theory. The project aims to broadly exploit emerging quantum information resource-theoretic ideas to extend the scope of existing electronic structure methodology towards correlated systems across chemistry and physics applications, in particular for ground state and spectral simulation. Applicants are expected to have a PhD, or are awaiting its award, in a relevant area (Theoretical/Computational Physics or Chemistry), and experience in the area of quantum many-body theory, its development or implementation. The successful applicant will be expected to work within a collaborative cross-disciplinary project, and actively contribute to the success of this collaboration. Key responsibilities include:

- Internationally-leading research in the development of algorithms for many-body physics/chemistry
- Maintenance and development of computer implementations
- Active collaboration and leadership in wider cross-disciplinary project
- Mentorship of more junior group members within the research environment
- Contribution to effective research culture and inclusion
- Contribution to effective dissemination of research through written and oral presentation

The above list of responsibilities may not be exhaustive, and the post holder will be required to undertake such tasks and responsibilities as may reasonably be expected within the scope and grading of the post.

Supporting our staff is important to us and we offer a range of provision including flexible working, caring support, and training opportunities.

Our Expectations

There are some key duties and responsibilities that we ask all employees to adhere to.

We ask that the successful candidate:

- Positively contributes to an environment at King's that truly represents [Our Principles in Action](#) where every individual feels safe, secure, and supported.
- Complies at all times with the requirements of health and safety regulations to ensure their own wellbeing and that of their colleagues.
- Develops an understanding of sustainability, including its impact on the University and the work we do, and engages in sustainable practices in the workplace.
- Ensures they are working in a safe environment, complying with policies and regulations, ensuring confidentiality and only releasing confidential information obtained during the course of employment to those acting in an official capacity.
- Complies with King's protocols on the appropriate use of telephone, email and internet facilities.

Equal Opportunities

At King's, we believe that the diversity of our community and a culture that is welcoming, open, inclusive and collaborative, are great strengths of the university.

The Equality Act of 2010 protects the rights of our students and staff and provides a framework to fulfil our duties to eliminate unlawful discrimination, harassment and victimisation and in addition, to advance equality of opportunity and foster good relations between those who share a protected characteristic and those who do not. At times, this will include balancing rights and beliefs that can feel in tension.

We are committed to free speech and to academic freedom, believing that our foundational purpose as a university, is to create spaces where a wide range of ideas, including ideas that are controversial, can be discussed and debated, and where members of our community can express lawful views without fear of intimidation, harassment or discrimination.

When engaging in the robust exchange of ideas, we ask that our community is mindful of our Dignity at King's guidance

We welcome your thoughts on how organisations can create an inclusive environment, including one which supports free speech and the exchange of a wide range of ideas.

Additional Information

Is Disclosure and Barring Service Clearance (DBS) required for this role:

☐ Yes ☐ Unsure ☒ No

If yes or unsure, please refer to appendix A at the end of this document (Please note all clinical roles require a DBS check)

Does this role require the post holder to undergo any Occupational Health Clearances?

☐ Yes ☐ Unsure ☒ No

If yes or unsure, please refer to appendix A at the end of this document (Please note all clinical roles require an OH Clearance)

Does this role require the post holder to hold a King's Health Partners Passport (KHP)?

☐ Yes ☐ Unsure ☒ No

If yes or unsure, please refer to appendix A at the end of this document (Please note all clinical roles require a King's Health Passport)

Person Specification

Post title:	Postdoctoral Research Associate		
Grade:	6		
Criteria:		To be assessed via:	
Essential:	Application (this will used for shortlisting applications)	Test / Assessment	Interview
PhD awarded in theoretical physics/chemistry or related subject, or PhD near completion* * Please note that this is a PhD level role but candidates who have submitted their thesis and are awaiting award of their PhDs will be considered. Should the successful candidate be awaiting the award of their PhD, the appointment will be made at Grade 5, spinal point 30 with the title of Research Assistant until confirmation of the award of the PhD has been received. Upon confirmation of the award of the PhD, the job title will become Research Associate and the salary will increase to Grade 6, spine point 31.	X		

A demonstrable record of scientific code development using modern structured and modular development practices and tools.	x		
A background of quantum chemistry, condensed matter physics and/or quantum information theory development.	x		x
Experience and track-record of developing, implementing or using quantum many-body modelling methodology.	x		x
The ability to communicate scientific concepts clearly both orally and in writing.	x		x
Desirable:	Application	Test / Assessment	Interview
Effective teamwork within scientific collaborations	x		x

Last reviewed date:	October 2026
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Appendix A – Employment Checks

Disclosure and Barring Service Clearance (DBS)

Please select the appropriate options from the list below:

Carrying out regulated activities with children and/or adults ¹	☐ Children ☐ Adults ☐ Both ☒ None
Will there be any contact with vulnerable groups? ²	☐ Yes ☒ No
Will the post be situated in a regulation environment, for example on an NHS Premises? ³	☐ Yes ☒ No

Additional Context:

- Regulated activity with adults may involve providing health care, person care, or social work;

Regulated activity with children (under-18s) may involve providing health care, personal care, social work, unsupervised teaching or training.
- Contact with vulnerable groups must meet the frequency threshold of 4 days in a 30-day period. An adult is not considered to be vulnerable due to any personal characteristic: however, an adult may be regarded as vulnerable due to particular circumstances at a particular time, for example when they are receiving treatment in a hospital.
- KCL buildings do not qualify as regulated environments. Only NHS Trust sites qualify as regulated environments.

Further information about the disclosure scheme can be found at: www.gov.uk/dbs

Occupational Health Clearance

When reviewing the below list, please note that any exposure, no matter how frequent will result in an Occupational Health Clearance.

Please mark the box if the following the hazards / risks are associated with this post:

☐ Exposure Prone Procedure (EPP) Work	☐ Lone working
☐ Direct patient care or regular patient contact / contact with clinical specimens or pathogens / pathology work	☐ Working outside
☐ Prolonged repetitive movements / actions	☐ Exposure to noise levels (>80dbA)
☐ Moving or handling heavy loads	☐ Work with VDUs (>5hrs per week)
☐ Working shifts	☐ Food handling

☐ Working nights	☐ Driving duties
☐ Working with dust or fumes	☐ Driving LGV or PCVs
☐ Working with skin irritants / sensitisers	☐ Driving forklift trucks
☐ Working with chemicals (industrial or cleaning)	☐ Contact with latex
☐ Working in a confined space	☐ Contact with cytotoxins
☐ Working with vibrating machinery / tools	☐ Working with children
☐ Working at heights	☐ Exposure to persons with challenging or aggressive behaviour
☐ Working with sewage	☐ Vocational driving
Please also list any other Health Surveillance checks required by legislation (e.g. COSHH) / any Statutory Medical Surveillance (e.g. Asbestos, Lead):	

King's Health Partnership Passport

Please select the appropriate options from the list below:

Where will the role holder be based as part of their clinical practice?	☐ KCH - Kings College Hospital ☐ GSTT - Guys & St Thomas' Hospital ☐ SLAM - South London & Maudsley ☐ Other – Please detail below:
Will their research involve working on NHS sites outside of the above list?	☐ Yes (Research Passport also required) ☒ No
Will they require access to the CRIS Database ? (IoPPN Researchers only)	☐ Yes ☒ No