UNIVERSITY OF WARWICK

Job Description

Job Title	Research Fellow
Department	Chemistry
Grade	6

Job purpose (a brief summary of the role)	The post holder will undertake research to support the UKRI Future Leaders Fellowship project "Quantum embedding for functional nanodevice design". They will work with team members and project partners to successfully execute the project and fulfil other duties commensurate with the nature, level of responsibility, and grading of this post.
Duties and responsibilities	**1.** Conduct individual, independent as well as collaborative research to support the delivery of the project. **2.** Deepen theoretical knowledge and technical skills to generate new research ideas. **3.** Develop stand-alone software tools and contribute to major quantum chemistry software packages. **4.** Prepare manuscripts on research work for publication. **5.** Disseminate research findings at relevant national and international academic meetings. **6.** Contribute to preparing applications and proposals to external bodies for e.g. funding purposes. **7.** Contribute to management and administration tasks connected to the research and provide information on research progress and outcome to funding bodies. **8.** Assist in the skill development of PhD and MChem students. **9.** Contribute to a positive research environment within the research group by supporting peers and taking part in group activities such as seminars. **10.** To act with professionalism at all times and show respect to their colleagues and to understand and adhere to the University's value of dignity at work; they are also expected to work collegially and to support all the teams with which they have contact in achieving the University's objectives. **11.** Any other duties commensurate with the grade and level of responsibility of this post, for which the post holder has the necessary experience and/or training.

Person Specification

The Person Specification focuses on the essential and desirable knowledge, skills, experience and qualifications required to undertake the role effectively. This is measured by (a) Application Form, (b) Test/Exercise, (c) Interview, (d) Presentation.

Essential Criterion No.	Essential Criterion Description	Measured by
E1	Hold, or about to attain, a PhD or equivalent in a relevant scientific discipline (e.g. chemistry, physics, computer science, materials science).	A & C
E2	Proven ability in research and evidence of quality research output in relevant field commensurate with the stage of the applicant's career.	A,C & D
E3	Deep knowledge about a range of theoretical and computational methods in electronic structure theory, molecular simulation and/or condensed matter physics with relevance to the project.	A,C & D
E4	Experience in programming (e.g. Python, FORTRAN, C++), developing stand-alone tools or contributions to collaborative software projects.	A,C & D
E5	Good communication skills and ability to communicate complex scientific results effectively, e.g. in publications, presentations, proposals, and meetings.	A,C & D
E6	Ability to initiate, plan, organise, implement, and deliver research work to tight deadlines.	A & C
E7	Ability to work both independently and as part of a team on complex research programmes.	A & C
E8	Ability or potential to contribute to the development of funding proposals and establishing new collaborations.	A & C
E9	An ability to work collaboratively and effectively with academic and administrative colleagues, and with colleagues outside the University to promote collegiality.	A & C

Desirable Criterion No.	Desirable Criterion Description	*Measured by*
D1	Good publication track record in relevant journals.	A & C
D2	Experience in developing or applying scientific machine learning tools for quantum chemistry.	A,C & D
D3	Experience in molecular screening or generative/property-driven molecular design.	A,C & D
D4	Experience in modelling the electronic structure, optical/electronic properties of molecules/materials.	A,C & D