THE UNIVERSITY OF MANCHESTER

PARTICULARS OF APPOINTMENT

FACULTY OF SCIENCE & ENGINEERING

SCHOOL OF NATURAL SCIENCES

DEPARTMENT OF EARTH & ENVIRONMENTAL SCIENCES

RESEARCH ASSOCIATE - GROUNDWATER GEOCHEMISTRY

VACANCY REF: SAE-027662

Salary:	Grade 6 £36,924 to £45,163 per annum, depending on relevant experience
Hours:	Full time (1 FTE)
Duration:	Fixed term for 36 months
Location:	Oxford Road, Manchester

Enquiries about the vacancy, shortlisting and interviews:
Name: Dr Laura Richards (Senior Lecturer, Department of Earth & Environmental Sciences)
Email: laura.richards@manchester.ac.uk

Background
A Research Associate position, funded by UKRI, is available for an outstanding and ambitious environmental geochemist, environmental chemist, environmental/chemical engineer (or similar) to study groundwater chemistry, (bio)geochemical processes and remediation approaches, particularly in the context of northern India and East Africa. This project aims to create a roadmap towards improved groundwater quality management in the context of the Global South by bringing together systematic approaches to improve the understanding of dominant groundwater processes and to support evidence-based decision-making for effective groundwater remediation. This position is part of a UKRI Future Leaders Fellowship project "AQUAROAD: Advancing Groundwater Quality in the Global South: Geochemical Processes, Remediation, Optimisation & Co-Designed Decision-Making Frameworks" (see: www.aquaroad.org and MR/Y016327/1).

Overall Purpose of the Job
The Research Associate will be based at The University of Manchester under the direct supervision of Dr Laura Richards (Department of Earth and Environmental Science, School of Natural Science, Faculty of Science and Engineering) but will also need to closely collaborate and/or liaise with project partners at The University of Manchester, nationally (University of Birmingham, University of Bath, UK Centre for Ecology & Hydrology), and internationally (Mahavir Cancer Sansthan, Mbarara University of Science & Technology, KTH, University of

Melbourne, University of Heidelberg) as necessary. Other relevant key UK working contacts will include Prof David Polya, Prof Jon Lloyd, Prof Jonny Huck, Prof Rahul Nair (all University of Manchester), Prof Daren Gooddy (UKCEH), Prof Stefan Krause (University of Birmingham) and Dr Jannis Wenk (University of Bath).

The applicant should have, or be working towards, a PhD or equivalent in aqueous geochemistry, groundwater geochemistry, environmental or chemical engineering, water remediation/treatment, low temperature geochemical modelling, or similar. The candidate should be competent in designing and implementing fieldwork and/or relevant laboratory-based activities (e.g. experimental work, environmental sample analysis). Competence and practical working experience in geochemical modelling code (e.g. PHREEQC, Geochemist's Workbench), GIS and/or numerical modelling and programming (e.g. R, C++, Python) would be highly desirable. Excellent scientific writing, teamwork, organisational skills and communication skills with a range of stakeholders are essential for this project. The candidate should be capable of working under their own initiative, effectively working with project partners and collaborators and co-supervising project/research (e.g. MSc, MEng) students.

The Research Associate is responsible to collaborate with AQUAROAD partners to: (i) co-design and implement field campaigns, including water and sediment sampling, to address project research questions; (ii) co-design and implement laboratory-based investigations, including sample preparation and analysis and/or remediation system evaluation, to address project research questions; (iii) analyse and critically interpret data, including with the support of geochemical modelling, to address project research questions; (iv) input into the development of contaminant distribution models and other decision-support tools; and (v) co-develop materials and contribute to knowledge exchange with relevant stakeholders to underpin the development of potential future impact arising from the project. The Research Associate will be required to fully and clearly document procedures and methodologies, including of quality assurance/quality control and sensitivity analysis, and to write or substantively contribute to the writing of progress reports, scientific papers and other relevant outputs for publication and dissemination.

Key Responsibilities, Accountabilities and Duties

The range of duties will include

Research and scholarship

- Conduct collaborative and individual research sub-projects and activities within the AQUAROAD project, including co-developing, designing and implementing relevant research activities to address project research questions
- Continually update knowledge and understanding in field or specialism, and consider incorporating new knowledge into ongoing research activity
- Identify and use appropriate research techniques and methods, including new approaches when appropriate
- Use critical thinking and curiosity to analyse and interpret research data to draw evidence-based conclusions

Communication and Collaboration/Teamwork

- Write up research work to a high standard for publication

- Effectively liaise, co-ordinate and collaborate with academic colleagues, partners and students, both internally and externally, as appropriate/required
- Effectively communicate both routine and complex information (which may be of a specialist or highly technical nature), orally, in writing and electronically as required
- Contribution to the preparation of reports, proposals and other documentation for external bodies, e.g. for stakeholder engagement, funding and/or contractual purposes
- Attend and contribute to relevant meetings
- Contribute to collaborative decision making with colleagues in areas of research
- Assist in the development and supervision of student research skills and/or projects

Project planning and management

- Plan and manage own day-to-day research activity within the framework of the agreed programme and in collaboration with others
- Balance the competing pressures of research and administrative demands and deadlines, with guidance if required
- Use research resources, laboratories and facilities as appropriate to support research

Other

- Be aware of health and safety and other risks in the work environment (including field and laboratory settings) and their potential impact on their own work and that of others
- Be aware of regulatory compliance requirements in the work environment
- Other duties may arise throughout the project due to project requirements

Person Specification

Essential:

- Have, or be about to obtain, a relevant PhD (or equivalent) in aqueous geochemistry, environmental geochemistry, environmental or chemical engineering, water remediation/treatment, low temperature geochemical modelling or similar
- Experience in relevant research approaches, notably designing and/or implementing field-based research activities (e.g. water and/or sediment sampling)
- An emerging strong track record (relative to stage of career) of academic achievements, including experience of writing and publishing in peer-reviewed journals and/or presenting research findings at academic or professional conferences
- Excellent communication and interpersonal skills, including being able to liaise effectively with different types of people/stakeholders whom may have a different background
- Competence in standard research software (MS Office suite, referencing software, statistical software, data visualization software)
- Excellent time management (including meeting deadlines) and organisational (including resource management) skills
- Ability to work independently and as part of a team

- Flexible and resilient approach to addressing/mitigating potential research challenges
- The ability to evaluate complex data
- Preparedness and willingness for overseas travel to undertake project duties, including fieldwork, for a duration anticipated to be on the order of several weeks to several months, likely distributed throughout the project period

Desirable

- Experience in relevant laboratory-based research approaches (e.g. characterization of environmental samples, investigation of (bio)geochemical mechanisms, remediation/treatment technology evaluation) using routine and/or advanced analytical techniques or equipment relevant to water quality assessment
- Experience in interpreting a suite of environmental geochemical data (e.g. for water and/or sediment) – including major and trace elements, groundwater residence time indicators, emerging contaminants, organics, isotopes (14C, δD, δ18O) and/or others
- Competence in geochemical modelling coding and implementation (e.g. PHREEQC, Geochemist's Workbench), including for modelling water-rock interactions
- Competence in GIS
- Competence in programming and/or numerical modelling (e.g. R, C++, Python)
- Field experience in Global South settings
- Experience of engagement with a wide range of diverse stakeholders, including beyond traditional academic audiences (e.g. participation in public outreach events, science communication)
- Willingness to contribute to broader project management and administrative processes
- Understanding of equality, diversity, inclusion and accessibility (EDIA) considerations and their potential relevance to research activity
- Active engagement in professional development relevant to the role (e.g. regularly updating knowledge in specialism)

Further information

Informal enquiries may be made to Dr. Laura Richards (laura.richards@manchester.ac.uk)

Please see the AQUAROAD website for further project details: www.aquaroad.org.

As an equal opportunity employer we welcome applicants from all sections of the community regardless of age, sex, gender (or gender identity), ethnicity, disability, sexual orientation and transgender status. All appointments are made on merit.