



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Decontamination of Soils and Groundwater Systems, Faculty of Engineering



Salary: Grade 7 (£33,199– £39,609 p.a.)

Reference: ENGPE1162

Closing date: 05 July 2019

Fixed-term for 36 Months

We will consider flexible working arrangements

Research Fellow in Decontamination of Soils and Groundwater Systems, School of Chemical and Process Engineering

Are you an ambitious researcher looking for your next challenge? Do you have an established background in colloids and polymer science? Do you want to further your career in one of the UKs leading research intensive Universities?

As part of a strategic collaboration between the University of Leeds and KAIST, South Korea, an ESPRC funded Research Fellow position is available in the area of decontamination of soils and groundwater systems. Your role will involve predominately experimental laboratory work related to the study of clays and their interactions with simulant ions and also synthesizing and characterizing new intercalating polymers to increase ion mobility and decontaminate clays. The decontamination route will focus on electrokinetic separation using in-house built electrokinetic cells.

You will have the opportunity to work with our KAIST collaborators who are leading the development of novel membrane technologies to recover mobile ions from the aqueous environments.

You will have a PhD (or expected to receive shortly) in Chemistry, Chemical Engineering, Physics, or a related discipline, with experience in materials characterization and analytical characterization techniques such as XRD, FTIR spectroscopy, XPS and Electron Microscope imaging. You will also have experience in synthesising polymers and surfactants, and in developing computational models to validate experimental results.

What does the role entail?

As a Research Fellow, your main duties will include:

- Pre-treating clays to simulate realistic physicochemical properties encountered in the environment;
- Characterizing clays and ion-clay interactions using a range of analytical techniques including XRD, FTIR, ICP-MS and XPS;
- Synthesizing intercalating polymers and characterizing basic polymer properties using GC-MS, NMR and dynamic light scattering;
- Developing chemical treatment strategies to optimize clays decontamination;



- Modelling multi-site ion sorption using PHREEQC;
- Generating and pursuing independent and original research ideas in the appropriate subject area;
- Developing research objectives and proposals and contributing to setting the direction of the research project and team including preparing proposals for funding in collaboration with colleagues;
- Evaluating methods and techniques used and results obtained by other researchers and to relate such evaluations appropriately to your own work;
- Preparing papers for publication in leading international journals and disseminating research results through other recognised forms of output;
- Maintaining own continuing professional development and acting as a mentor to less experienced colleagues as appropriate;
- Contributing to the training of both Undergraduate and Postgraduate students, including assisting with the supervision of projects in project relevant areas.

These duties provide a framework for the role and should not be regarded as a definitive list. Other reasonable duties may be required consistent with the grade of the post.

What will you bring to the role?

As a Research Fellow you will have:

- A PhD (or expected to receive shortly) in Chemistry, Chemical Engineering, Physics, or a related discipline;
- Experience in materials characterization;
- Experience of analytical characterization techniques such as XRD, FTIR spectroscopy, XPS and Electron Microscope imaging;
- Experience in synthesising polymers and surfactants;
- Experience in developing computational models to validate experimental results;
- Experience of working collaboratively with international research institutions;
- A track record of contributing to publications in high-impact factor journals;
- Excellent management, organisational, teamwork and communication skills, with proven ability to meet deadlines;
- Proven ability to work effectively on one's own, showing initiative and creativity;



You may also have:

- Experience in project supervision and/or teaching experience at Undergraduate and Masters Levels within a Chemical Engineering scope.

How to apply

You can apply for this role online; more guidance can be found on our [How to Apply](#) information page. Applications should be submitted by **23.59** (UK time) on the advertised [closing date](#).

Contact information

To explore the post further or for any queries you may have, please contact:

[Associate Professor David Harbottle](#), School of Chemical and Process Engineering

Phone: +44 (0) 113 343 4154

Email: d.harbottle@leeds.ac.uk

Additional information

Faculty and School Information

Further information is available on the research and teaching activities of the [Faculty of Engineering](#) and the [School of Chemical and Process Engineering](#)

A diverse workforce

The Faculty of Engineering is proud to have been awarded the [Athena Swan Silver Award](#) from the Equality Challenge Unit, the national body that promotes equality in the higher education sector. Our [equality and inclusion webpage](#) provides more information.

Working at Leeds

Find out more about the benefits of working at the University and what it is like to live and work in the Leeds area on our [Working at Leeds](#) information page.



Candidates with disabilities

Information for candidates with disabilities, impairments or health conditions, including requesting alternative formats, can be found on our [Accessibility](#) information page or by getting in touch with us at disclosure@leeds.ac.uk.

Criminal record information

Rehabilitation of Offenders Act 1974

A criminal record check is not required for this position. However, all applicants will be required to declare if they have any 'unspent' criminal offences, including those pending.

Any offer of appointment will be in accordance with our Criminal Records policy. You can find out more about required checks and declarations in our [Criminal Records](#) information page.

