



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Cement-Energy Nexus,
Faculty of Engineering and Physical Sciences



Salary: Grade 7 (£38,205 – £45,585 p.a.)

Reference: EPSCV1143

Location: Main campus (with scope for hybrid working)

Closing date: Tuesday 27 August 2024

Fixed term until 31 March 2026

We are open to discussing flexible working arrangements

Research Fellow in Cement-Energy Nexus, School of Civil Engineering.

Are you an early career researcher looking for your first challenge? Do you have a background in Cement Research? Do you want to further your career in one of the UK's leading research-intensive universities?

The overarching aim of this research project is reproducing cement from Rubble. The outcomes intend to enable closed loop recycling of concrete.

This role involves high-temperature calorimetry and synthesis of clinkers with different heating modes (e.g., microwave), followed by phase assemblage and microstructure characterisation to deliver optimal performance and the best hydration characteristics which must also be assessed.

This role is part of the Innovate UKraine project on the Safe, Sustainable, and Swift Reconstruction of Ukraine. You will work with universities, businesses, and NGOs across Europe in an innovation and demonstration project that can swiftly deliver social, environmental, and economic benefits across war and disaster torn regions, as well as develop an ultimate solution for the recycling of all end-of-life concrete.

What does the role entail?

As a Research Fellow, your main duties will include:

- Advancing the understanding of reaction pathways and energetics of producing clinker from construction and demolition waste;
- Designing and implementing an experimental programme to produce and test cement materials;
- Managing data collection and storage on a day-to-day basis. Maintaining comprehensive, accurate and tidy records of research work;
- Recording and analysing research data and present findings to the PI and other members of the research group as required;
- 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 research;
- Making a significant contribution to the dissemination of research results by publication in leading peer-reviewed journals and by presentation at national and international meetings;
- Working independently and as part of a larger team of researchers, both internally and externally, to develop new research links and collaborations and engage in knowledge transfer activities where appropriate;
- Maintaining your 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 areas relevant to the project.

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 have submitted your thesis before taking up the role) in Chemistry, Materials Science, Chemical engineering, or other relevant discipline;
- A strong background in relevant Energy/Cement/Clinker Research;
- Knowledge and experience of relevant materials characterisation techniques such as SEM, XRD, XRF, or other solid-state analysis methods;
- Experience in writing of scientific/technical publications and reports;
- Good time management and planning skills, with the ability to meet tight deadlines and manage competing demands effectively without close support;
- A developing track record of peer-reviewed publications in international journals;
- Excellent communication skills both written and verbal, and the ability to communicate your research at national and international conferences;
- A proven ability to work well both independently and in a team;
- A strong commitment to your own continuous professional development.



You may also have:

- Experience of pursuing external funding to support research;
- Knowledge and experience of:
 - relevant thermal characterisation techniques such as drop calorimetry;
 - relevant systems, policies, legislation, and quality standards;
 - organising meetings, seminars, conferences, or public engagement activities;
 - thermodynamic, process, and/or geochemical modelling;
- Potential to develop leadership and management skills appropriate to take on a supporting role within the research group.

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:

[Professor Theodore Hanein](#), Professor of Construction Materials Science

Email: T.Hanein@leeds.ac.uk

Additional information

Faculty and School Information

Further information is available on the research and teaching activities of the [Faculty of Engineering & Physical Sciences](#), and the [School of Civil Engineering](#).

A diverse workforce

As an international research-intensive university, we welcome students and staff from all walks of life and from across the world. We foster an inclusive environment where all can flourish and prosper, and we are proud of our strong commitment to student education. Within the Faculty of Engineering and Physical Sciences we are dedicated to diversifying our community and we welcome the unique contributions that individuals can bring, and particularly encourage applications from, but not limited to



Black, Asian and ethnically diverse people; people who identify as LGBT+; and people with disabilities. Candidates will always be selected based on merit and ability.

The Faculty of Engineering and Physical Sciences are 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

We are a campus-based community and regular interaction with campus is an expectation of all roles in line with academic and service needs and the requirements of the role. We are also open to discussing flexible working arrangements. To find out more about the benefits of working at the University and what it is like to live and work in the Leeds area visit our [Working at Leeds](#) information page.

Information for disabled candidates

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



Salary Requirements of the Skilled Worker Visa Route

Please note that this post may be suitable for sponsorship under the Skilled Worker visa route, but first-time applicants might need to qualify for salary concessions. For more information, please visit: www.gov.uk/skilled-worker-visa.

For research and academic posts, we will consider eligibility under the Global Talent visa. For more information, please visit: <https://www.gov.uk/global-talent>.

