UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Terahertz Emitter Fabrication,

Faculty of Engineering and Physical Sciences

Salary: Grade 7 (£41,064 – £48,822 p.a.)

Reporting to: Dr Joshua Freeman

Reference: EPSEE1156

Closing date: Tuesday 02 June 2026

Fixed term (Until 31 March 2027 - to complete specific time limited work)

Location: Leeds main campus

We are open to discussing flexible working arrangements.

Research Fellow in Terahertz Emitter Fabrication, School of Electronic and Electrical Engineering.

Are you an ambitious researcher looking for your next challenge? Do you have an established background in micro-fabrication of novel terahertz emitters? Do you want to further your career in one of the UK's leading research-intensive universities?

Overview of the Role

We seek a Post-Doctoral Research Fellow to join a 9-month project. You will focus on the fabrication and characterisation of novel terahertz (THz) emitters based on the lithium-niobate-on-insulator (LNOI) platform, with the aim of increasing the maximum power in continuous-wave (CW) mode. This will be achieved through a combination of device design optimisation; advanced fabrication techniques, including wafer-bonding and dry-etching; and simulation and engineering of the device. The applications for this work include high precision spectroscopy and high-speed wireless communications.

Main duties and responsibilities

- Fabricating terahertz emitters in the Leeds Nanotechnology Cleanroom, producing high performance devices;
- Characterising these devices in the Leeds terahertz laboratory;
- Simulating the thermal and optical properties of novel terahertz emitters;
- Proactively identifying and exploit opportunities for improvements in emitter performance;
- 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.

Qualifications and skills

Essential

- A PhD (or have submitted your thesis before taking up the role) in Electrical Engineering or a closely allied discipline;
- A strong background in microfabrication of LNOI devices;
- Experience of integrating LNOI platform with Silicon;
- Experience of characterising THz devices;
- 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.

Desirable

- Experience of pursuing external funding to support research;
- Experience of advanced fabrication techniques, including dry-etching, wafer bonding and lapping;

- Experience of finite-element modelling of electromagnetic waves.

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:

Dr Joshua Freeman, Associate Professor
Email: J.R.Freeman@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 Electronic and Electrical Engineering.

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.

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.

Information for disabled candidates
Information for disabled candidates, impairments or health conditions, including requesting alternative formats, can be found under the 'Accessibility' heading on our How to Apply information page or by getting in touch by emailing HR via 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 the Government's Skilled Worker visa page.

For research and academic posts, we will consider eligibility under the Global Talent visa. For more information, please visit the Government's page, Apply for the Global Talent visa.