



**Job Title:** Research Associate in Modelling of High Entropy Alloy  
**Grade:** 7  
**Salary:** £34,804 to £40,322 per annum  
**Department:** School of Engineering  
**Hours/Contract:** Full-time, open ended subject to fixed term funding. Funding is available to 31 October 2022  
**Reference:** 1440

## Overview

This post will be at the heart of the project, undertaking thermodynamic and process modelling aspects of the work, working with colleagues in the University of Sheffield on alloy design and development, and TWI on brazing process development. There will also be significant industrial interactions with the project including many industrial partners, both as manufacturers and users of brazing alloys.

Main Duties and Responsibilities	% Time
<p><b>Research</b></p> <ul style="list-style-type: none"> <li>Carry out research tasks focused on project delivery, principally the modelling of HEA brazing process, including FE modelling of thermal profile, mass transport behaviour, and process control and optimization. 70</li> <li>To communicate this research to the Leicester research team and other project teams at regular meetings via presentations and progress reports. This will involve writing the presentations and presenting the findings. 10</li> <li>To write up research findings and prepare research papers for publication in appropriate high quality peer reviewed research journals and at national/international conferences. 15</li> <li>The postholder will be a member of the Engineering Department and will be expected to play an active part in the wider research activities within the Department, for example, attending research seminars. The postholder will also interact with and advise postgraduate project students where appropriate. 5</li> </ul>	
<p><b>Internal and External Relationships</b></p> <ul style="list-style-type: none"> <li>Collaboration with other departments of the University, industrial partners and other higher education institutions and schools both national and internationally.</li> <li>Academic, technical and administrative members of staff.</li> </ul>	





## Planning and Organising

- Plan and deliver research work as defined in the project proposal.
- Organise regular meetings with project partners to review research progress.

## Qualifications, Knowledge and Experience

### Essential

- A PhD in Materials Science, Engineering or related degree or equivalent\*
- Detailed understanding of physical metallurgy relating to alloying and approaches to develop and design new alloys\*
- Experience in modelling of metallurgical processing such as melting, casting or powder metallurgy\*
- Evidence of research achievement, though, for example, published papers\*

### Desirable

- Experience of brazing or soldering, either in research or industrially
- Experience of working with High Entropy Alloys, and knowledge of recent developments in this area
- Capacity to work as a scientist at postdoctoral level i.e. without day-to-day supervision (but with advice and guidance)
- Evidence of national and international esteem for research capability
- Evidence of supervision/co-supervision of PhD students in a research-led environment
- A preference will be given to candidates with research strengths in materials and process modelling and high entropy alloys

## Skills, Abilities and Competencies

### Essential

- Good written communication skills
- The ability to initiate, develop, and deliver high quality research
- Good verbal and presentational communication skills
- Good interpersonal and organisational skills
- Ability to work flexibly in a team
- High level of proficiency in English (both in writing and verbally), sufficient to undertake research, teaching and administrative activities utilising English Language materials and to communicate effectively with staff and students at the University of Leicester and at collaborative partners

### Desirable

- Good interpersonal skills
- Ability to write research grant proposals and high quality journal papers.

***\*Criteria to be used in shortlisting candidates for interview***





## VITAL

The University encourages all staff to live our [VITAL values](#) which are:  
**Valuing People, Innovators, Together, Accountable, Leaders.**

## Equality and Diversity

We believe that equality, diversity and inclusion is integral to a successful modern workplace. By developing and implementing policies and systems that challenge stereotypes across all aspects of our work, we have a culture that recognises and values the diverse contributions of our staff which benefits everyone. Our strong values of inclusivity and equality support our efforts to attract a diverse range of high quality staff and students, and identify our University as a progressive and innovative workplace that mainstreams equality, diversity and inclusion.

