

## **Job Summary**

The School of Metallurgy and Materials a multi-disciplinary and vibrant environment for outstanding study and research. The School of Metallurgy and Materials has achieved an excellent performance in the Research Excellence Framework (REF) and is ranked in the top quartile in the UK for world-leading research. Overall 86% of the research in the School was recognised as internationally excellent of which 31% was given the higher accolade of being world-leading. The School has strong links with industry, including a new £60m High Temperature Research Centre in partnership with Rolls-Royce, has recently launched the interdisciplinary Birmingham Centre for Strategic Elements and Critical Materials and has recently established the £42m National Centre for Nuclear Robotics.

Research in the School has the following themes:

- Materials processing, including casting, additive manufacturing and surface modification
- Materials modelling, including ICME
- Microstructural characterisation, including electron microscopy and a partnership with Diamond Light Source
- Materials performance, including fracture, fatigue and corrosion

We have recently restructured our undergraduate curriculum, introducing a programme in Aerospace Engineering. We seek to appoint a Lecturer or Senior Lecturer with research experience of relevance to materials for aerospace, including the processing, microstructure, performance, and/or modelling of aerospace materials, particularly light alloys or polymer matrix composites.

The post-holder will be expected to teach in areas of materials science relevant to the aerospace materials.

The overall roles within this post are:

- To initiate and conduct international-quality research in aerospace-related fields and to bring originality and new research directions. It is expected that the candidate will bring in significant research funding from, for example EPSRC, InnovateUK, industry and the EU.
- To develop and deliver undergraduate and postgraduate courses in the aerospace field or related, in line with the School's teaching strategy and to participate in the School's overall contribution to the University.

The post-holder will contribute to the whole range of research, teaching and administration.

Research is likely to involve initiating, conducting and disseminating original research. The research has measurable outcomes and is reflected in a growing national reputation and often an incipient international reputation.

Teaching is likely to include a substantial contribution to: (a) the management, development (including programme/module review) and delivery of teaching and assessment; and (b) enhancement of the student experience or employability. The role will typically also involve developing and advising others, including: (a) providing expert advice to staff and students, (b) supervising and examining PhD students, and (c) developing and advising others on learning and teaching tasks and methods.

Management and administration is likely to involve contributions at School level, and/or making an important contribution to some managerial/leadership activities (e.g. working groups) within the University. This may include developing and making substantial contributions to knowledge transfer, enterprise, business engagement, public engagement, widening participation, schools outreach, or similar activities at School level or further within the University.

## **Main Duties**

### **Research**

For the **Lecturer** position one should:

To plan and carry out research, using appropriate methodology and techniques. This may include, where appropriate to the discipline:

- Pursue personal research including developing research ideas and winning support, including financial support.
- Plan, publish and/or execute high quality research
- Project manage research activities, and/or supervise other research staff
- Present findings in high quality publications and conference proceedings
- Develop novel methodologies and techniques appropriate to the type of research being pursued
- Supervise and examine PhD students, both within the institution and externally
- Provide expert advice to staff and students within the discipline
- Apply knowledge in a way which develops new intellectual understanding
- Develop and make substantial contributions to knowledge transfer, and enterprise (including business engagement, public engagement) and similar activity that is of manifest benefit to the College and the University.

For **Senior lecturer** position one should also:

- Make a major contribution to the management of research activities
- Lead successful funding bids which develop and sustain research support for the specialist area (in disciplines where this is possible)
- Publish leading research that results in a sustained, highly respected reputation of international quality in the subject area and/or designing and developing innovative underpinning technologies
- Provide expert advice internally and externally
- Provide leadership of research that contributes to the progression of the discipline (in disciplines where this is possible)
- Referee and peer review articles for peer reviewed academic journals and grant applications by research councils and/or other major funding bodies
- Lead sustained high value impact activity in knowledge transfer and enterprise (including business engagement, public engagement) that is of manifest benefit to the College and University, and: a) makes a significant contribution to policy development at a national and international level; and/or b) involves development of industrial links and comparable networks and initiatives.
- Supervise and examine PhD students, both within the institution and externally
- Manage research activities and/or supervise other research staff
- Develop novel methodologies and techniques appropriate to the type of research being pursued

### **Learning and Teaching**

For **Lecturer** position:

To use a variety of methods in teaching and advising individuals and groups of undergraduates, postgraduates, or CPD students. Where appropriate to the discipline this may include:

- Teach and examine courses at a range of levels
- Plan and review own teaching approaches and act as a mentor to encourage others to do the same

- Develop programme proposals and make substantial contributions to the design of teaching programmes more widely in the School, as appropriate
- Where appropriate, undertake and develop the full range of responsibilities in relation to supervision, marking and examining (including summative assessment, assessed work, contributing to the final award – as a mark or as credit – such as unseen examinations, essays, dissertations or presentations.
- Use appropriate approaches to learning and teaching in their field
- Disseminate appropriate practices through suitable media
- Develop and advise others on learning and teaching tasks and methods
- Develop and make substantial contributions to knowledge transfer, enterprise, business engagement, public engagement activities or similar on own specialism that enhances the student experience or employability and is of manifest benefit to the College and University
- Devise and supervise projects, student dissertations and practical work

For **Senior Lecturer** position one should also:

To contribute at a senior level on a sustained basis in learning and teaching. Where appropriate for the discipline, this may include some but not all of the responsibilities listed below:

- Lead the development of new and appropriate approaches to learning and teaching. This may be underpinned by research and evaluation of teaching methods and systems.
- Act as adviser for teaching and learning methods through excellent practice and mentoring other colleagues
- Lead the design and/or co-ordination of programmes or equivalent activities across the School or Department
- Contribute to the development of teaching and learning policy, methods and standards, more widely than the School
- Contribute to debate nationally about policy, methods and practices through publications, conference activity and roles that advance quality in the discipline
- Lead the development and management of assessment strategies within the School/Department
- Lead substantial and sustained high value impact activity in knowledge transfer and enterprise (including business engagement, public engagement) that enhances the student experience and/or employability and is of manifest benefit to learning and teaching in the College and the University. This may include the development of industrial links and comparable networks and initiatives.

### **Management/Administration**

For **Lecturer** position:

To contribute to Departmental/School administration or have a high level of responsibility for others.

This may include:

- Contribute to the administration/management of research and/or teaching across the Department/School
- Lead and manage a team to devise and implement a new and/or revised process (e.g. new programme or a recruitment drive)
- Advise on personal development of colleagues and students
- Make a major contribution to some administrative activities within the University (e.g. appeals panels, working groups)
- Manage enterprise, business development, and public engagement activities of manifest benefit to the College and University
- Develop and make substantial contributions to knowledge transfer, enterprise, business engagement, public engagement, widening participation, schools outreach.

For **Senior Lecturer** position one should also:

To chair and/or lead activities in the Department/ School and representation on University committees or working groups. Where appropriate to the discipline, this is likely to include some but not all of the responsibilities listed below.

- Make an important contribution to the development and running of the Department or School, for example, leading activity on teaching assessment and/or on research

- Develop and manage staff and resources in support of major research and/or teaching activities
- Make important contributions to the development of the Department/School/PAU's research strategy and/or learning and teaching strategy
- Contribute significantly to the development and delivery of knowledge transfer, enterprise, business engagement and public engagement activities with a sustained high value impact of manifest benefit to the College and the University

### **Person Specification**

For **Lecturer** position:

- Normally, a higher degree relevant to the research/teaching area (usually PhD) or equivalent qualifications
- Extensive research/teaching experience and scholarship within subject specialism
- Proven ability to devise, advise on and manage learning/ research
- Skills in managing, motivating and mentoring others successfully at all levels

For **Senior Lecturer** position:

All of the above and demonstrated competence in Research; Learning and Teaching; and Management and Administration; and excellence in at least two of these areas.

### **Research**

For **Lecturer** position:

- Experience and achievement reflected in a growing reputation
- Extensive experience and demonstrated success in planning, undertaking and project managing research to deliver high quality results
- Extensive experience of applying and/or developing and devising successful models, techniques and methods
- Experience and achievement in knowledge transfer, enterprise and similar activity

For **Senior Lecturer** position:

An excellent national reputation and a developing international profile through significant original research work and a clear record of impact. Evidence of success under the following headings, as appropriate to the discipline:

- High level peer esteem as evidenced by
  - Excellent reputation in the UK and often internationally, reflected in sustained high quality output, level of innovation, impact on subject and recognition
  - An excellent and sustained record of peer reviewed research publications
- Successful and sustained supervision of doctoral students to completion
- Substantial and sustained research income generation, e.g. through research grants, contracts, research consultancy or other external funding
- Sustained high value impact knowledge transfer and enterprise that is of manifest benefit to the College and University

### **Teaching**

- Ability to design, deliver, assess and revise teaching programmes
- Extensive experience and demonstrated success in developing appropriate approaches to learning and teaching, and advising colleagues
- Experience and success in knowledge transfer, enterprise and similar activity that enhances the student experience or employability

### **Management Administration**

For **Lecturer** position:

- Ability to contribute to School/Departmental management processes
- Ability to assess and organise resources effectively
- Understanding of and ability to contribute to broader management/administration processes

For **Senior Lecturer** position:

An excellent teaching profile and performance in terms of both impact and quality. The teaching quality demonstrated to be informed by an appropriate level of scholarship. Evidence of success under the following headings:

- High national reputation for the development of teaching and learning excellence within the discipline
- Successful and sustained use of a range of appropriate teaching methods, and assessment strategies that promote high quality learning, including learning that is flexible, distinctive and current and stimulates learners' natural curiosity
- Significant and sustained contribution to one or more of the following: strategic development of new programmes; approaches to learning; the development of learning resources
- High quality and sustained contributions to fostering excellence in teaching activities more widely, i.e. in the Department/School or College and/or externally
- Track record of substantial and sustained high value impact on the enhancement of the student experience, and/or employability
- Mentoring and expert advice which develops the skills of colleagues in teaching and in fostering learning

### **Management and administration-related requirements**

For **Lecturer** position:

- Ability to contribute to School/Departmental management processes
- Ability to assess and organise resources effectively
- Understanding of and ability to contribute to broader management/administration processes

For **Senior Lecturer** position:

Demonstrated significant achievement in management and administration-related activities, which may include leadership of activities/initiatives. Evidence of success under the following headings

- Successful and sustained performance in significant administrative/managerial role (s) (e.g. exams officer)
- Significant and sustained high quality innovative contributions to the management/administration of the Department/School/College or University
- Successful and sustained contribution to the corporate life of the School/College/University, displaying willingness to contribute actively to committees, collaborative teaching and administrative tasks