Role Profile

**Job title**  
Research Associate/Fellow in Supercritical Fluid Modelling

**Job family and level**  
Research and Teaching  
Level 4 Training  
Grade/Level 4

**School/Department**  
Faculty of Engineering

**Location**  
University Park Campus

**Purpose of role:**  
Candidates must have (or about to obtain) a PhD, or equivalent in a relevant area, together with relevant research skills and knowledge of supercritical fluids and image analysis modelling of supercritical reactors. The project involves strong academic and industrial collaboration.

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<thead>
<tr>
<th>Main responsibilities</th>
<th>% time per year</th>
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| 1 To operate supercritical water rigs and to synthesis nanomaterials  
To develop IA based models to link synthesis with mixing and other variables inside a supercritical water continuous flow reactor | 70% |
| 2 Production of reports, publications, presentations and travel to meetings with industry and scientific community. | 10% |
| 3 Supervision of project students. | 10% |
| 4 Liaison meetings with project sponsor and its subsidiaries. | 5% |
| 5 Any other duties appropriate to this post as required by their line manager. | 5% |

**Person specification**

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<tr>
<th>Skills and Training</th>
<th>Essential</th>
<th>Desirable</th>
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| Skills and computational modelling.  
Strong organisational skills and project management.  
Ability to find, read, assess and summarise published relevant research literature.  
Excellent communication and presentation skills. | |

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<th>Knowledge and experience</th>
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| Experience in high pressure reactors.  
Process control systems for high pressure reactors.  
Experience in the use of relevant software based modelling, using MATLAB-Simulink. | Experience of writing MATLAB code.  
Closely liaising with external partners. |

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<th>Qualifications, certification</th>
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<tr>
<td>PhD (or close to completion) or equivalent in engineering degree with a background in supercritical or high pressure fluids.</td>
<td>Chemical engineering background.</td>
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Role Profile

Expectations and behaviours

The University has developed a clear set of core expectations and behaviours that our people should be demonstrating in their work, and as ambassadors of the University’s strategy, vision and values. The following are essential to the role:

- **Valuing people**: Is always equitable and fair and works with integrity. Proactively looks for ways to develop the team and is comfortable providing clarity by explaining the rationale behind decisions.

- **Taking ownership**: Is highly self-aware, looking for ways to improve, both taking on board and offering constructive feedback. Inspires others to take accountability for their own areas.

- **Forward thinking**: Driven to question the status quo and explore new ideas, supporting the team to “lead the way” in terms of know-how and learning.

- **Professional pride**: Sets the bar high with quality systems and control measures in place. Demands high standards of others identifying and addressing any gaps to enhance the overall performance.

- **Always inclusive**: Ensures accessibility to the wider community, actively encouraging inclusion and seeking to involve others. Ensures others always consider the wider context when sharing information making full use of networks and connections.

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### Key relationships with others

- **Line manager**: Ed Lester

- **Role holder**: Research Associate/Fellow in Supercritical Fluid Modelling

- **Key stakeholder relationships/direct reports**: Colleagues, Students