



<b>Job title</b>	Research Associate / Fellow in Composites Manufacturing	<b>Job family and level</b>	Research and Teaching Level 4 (Appointment will be Level 4 Career training grade where an appointment is made before PhD has been completed)
<b>School/ Department</b>	Faculty of Engineering	<b>Location</b>	Advanced manufacturing building, Jubilee Campus

## Purpose of role

The person appointed will develop and validate (virtually and in a lab) effective algorithms aimed at detecting defects and active control for resin transfer moulding (RTM) under influence of uncertainties. The successful candidate will join the established interdisciplinary team working on the Core project “Resin injection into reinforcement with uncertain heterogeneous properties: NDE and control” funded by the EPSRC Future Composites Manufacturing Research Hub.

	<b>Main responsibilities</b> (Primary accountabilities and responsibilities expected to fulfil the role)	<b>% time per year</b>
1	Modelling and computational work related to development and validation of algorithms aimed at defect detection and active process control in RTM	45%
2	Lab validation of algorithms aimed at defect detection and active process control in RTM	30%
3	Communication, engagement and continuation activities: · Write up research work for publication in leading international journals and/or contribute to the dissemination at national/international conferences, resulting in successful research outputs. · Identify opportunities and assist in writing bids for research grant applications with project partners. Prepare proposals and applications to both external and/or internal bodies for funding or contractual purposes	15%
4	Project management and partner liaison activities: · Prepare reports and presentations to communicate project outcomes and milestones to partner organisations (the Hub and industrial partners). · Organise and participate in meetings with partner organisations to clarify objectives and communicate research outcomes · Maintain work plans and time records to facilitate project management and auditing requirements.	5%
5	Any other duties appropriate to the post as required by their line manager	5%

## Person specification

	Essential	Desirable
<b>Skills</b>	<ul style="list-style-type: none"> <li>• Proven ability to work as part of a team, with and excellent efficiency/time management skills</li> <li>• Excellent oral and written communication skills, including the ability to communicate with clarity on complex information</li> <li>• Ability to program (e.g. MatLab, C) and use specialised software packages (e.g., Ansys Fluent)</li> <li>• Ability to perform experiments in a composites lab.</li> </ul>	<ul style="list-style-type: none"> <li>• Familiarity with good software engineering practice such as version control and testing</li> <li>• Lab skills to do resin infusion experiments</li> </ul>
<b>Knowledge and experience</b>	<ul style="list-style-type: none"> <li>• Knowledge of composites manufacturing</li> <li>• Experience in modelling of fluid flows</li> <li>• Significant experience in solving engineering numerical problems</li> <li>• Experience of lab experiments</li> <li>• Ability to operate within a safety management framework</li> <li>• Ability to undertake research and perform communication activities (including the writing of reports and publications and the presentation of results at conferences and meetings evidenced by publications in peer-reviewed journals and conference publications) with a minimum of supervision</li> </ul>	<ul style="list-style-type: none"> <li>• Modelling, computational and lab experience related to resin infusion</li> <li>• Familiarity with the concept of uncertainty quantification</li> </ul>
<b>Qualifications, certification and training (relevant to role)</b>	<ul style="list-style-type: none"> <li>• Degree in Mechanical Engineering or a related discipline</li> <li>• Either holds (or is about to obtain) a PhD in Mechanical Engineering or a related field</li> </ul>	<ul style="list-style-type: none"> <li>• PhD (or Studying towards) in Uncertainty Quantification and/or Composites Manufacturing / in a field relating to resin infusion</li> </ul>



The University strongly endorses Athena SWAN principles, with commitment from all levels of the organisation in furthering women's careers. It is our mission to ensure equal opportunity, best working practices and fair policies for all.

## 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.

## Key relationships with others

