



<b>Job title</b>	Research Associate/Fellow in integrating artificial intelligence with additive manufacturing for the manufacture of medicines	<b>Job family and level</b>	Research Level 4 (Appointment will be Level 4 Career training grade where an appointment is made before PhD has been completed)
<b>School/ Department</b>	Engineering - Centre for Additive Manufacturing	<b>Location</b>	Jubilee Campus, Advanced Manufacturing Building

### Purpose of role

This role will be part of a team working on a EPSRC funded Prosperity Partnership “Accelerated Discovery and Development of New Medicines”, which is operated in partnership with GSK. The role will support the Investigator team in achieving the Prosperity Partnership’s overall research objectives by conducting research to enable us to integrate Artificial Intelligence with Additive Manufacturing to produce optimised processes.

	<b>Main responsibilities</b> (Primary accountabilities and responsibilities expected to fulfil the role)	<b>% time per year</b>
1	To plan and conduct research using established approaches, methodologies and techniques within the research area and support the development of improved methodologies to enhance the projects goals	30
2	To analyse and illuminate data, interpret reports, evaluate and criticise texts and bring new insights to research area.	35
3	To contribute to writing up research findings for publication.	7
4	To assist with the preparations, proposals and applications to both external and/or internal bodies for funding, contractual or accreditation purposes.	7
5	To build internal and/or external contacts to develop knowledge and understanding, forming relationships for future collaborations.	3
6	To assist in the operational aspect of research networks, for example, supporting research meetings and updating databases etc and contribute to collaborative decision making with colleagues in area of research.	3
7	To provide guidance as required to support staff and students, where appropriate in own area of expertise.	5
9	To plan and manage own research activity and resolve problems, if required, in meeting own/team research objectives and deadlines in collaboration with others.	10

## Person specification

	<b>Essential</b>	<b>Desirable</b>
<b>Skills</b>	<ul style="list-style-type: none"> <li>▪ Excellent oral and written communication skills, including the ability to communicate with clarity on complex information.</li> <li>▪ Demonstrable skills in the use and development of Additive Manufacturing systems</li> <li>▪ Demonstrable skills in the development of digital methods, including artificial intelligence, machine learning and design optimisation</li> <li>▪ Analytical ability to facilitate conceptual thinking, innovation and creativity.</li> <li>▪ Effective laboratory note-taking and logging of experiments and data.</li> <li>▪ Ability for independent research within the context of a team.</li> <li>▪ Ability to prioritise and organise resource requirements and deploy effectively.</li> <li>▪ Strong analytical ability to analyse and illuminate data, interpret reports, evaluate and criticise texts and bring new insights.</li> <li>▪ Strong self-motivation and creativity</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ability to foster a research culture and commitment to learn in others.</li> <li>▪ Ability to code in a range of languages, including Python, Fortran and others.</li> </ul>
<b>Knowledge and experience</b>	<ul style="list-style-type: none"> <li>▪ Experience of developing new approaches, models, techniques or methods.</li> <li>▪ Knowledge of methods (inc. experimental) for validation of computational models.</li> <li>▪ Experience of working in a multidisciplinary team.</li> <li>▪ Demonstrated creativity and leadership in problem solving.</li> <li>▪ Experience in the operation of 3D printers</li> <li>▪ Experience in developing AI solutions involving data science and/or optimisation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Knowledge of materials and materials science.</li> <li>▪ Experience of working and analysing large datasets</li> <li>▪ Liaising with external partners.</li> <li>▪ Experience in the operation of vat photopolymerisation 3D printing.</li> <li>▪ Knowledge and background in the integration of digital methods into manufacturing.</li> <li>▪</li> </ul>
<b>Qualifications, certification and training (relevant to role)</b>	<ul style="list-style-type: none"> <li>▪ PhD (or about to obtain) in Engineering, Physical Sciences or Computational / Data Sciences</li> </ul>	<ul style="list-style-type: none"> <li>▪ Training in health and safety/risk assessment.</li> </ul>



As part of this, we welcome a diverse population to join our work force and therefore encourage applicants from all communities, particularly those whose protected characteristics under the Equality Act 2010, are not well-presented in our current staff body.



The University is a signatory of the Declaration on Research Assessment (DORA). As such we commit to focus on the scientific content of publications (where requested or provided as part of the recruitment and selection process) as a basis for review of quality, and consideration of value and impact of research conducted, rather than any proxy measures such as Journal Impact Factor.

## 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 friendly, engaging and receptive, putting others at ease. Actively listens to others and goes out of way to ensure people feel valued, developed and supported.
- Taking ownership** Is clear on what needs to be done encouraging others to take ownership. Takes action when required, being mindful of important aspects such as Health & Safety, Equality, Diversity & Inclusion, and other considerations.
- Forward thinking** Drives the development, sharing and implementation of new ideas and improvements to support strategic objectives. Engages others in the improvement process.
- Professional pride** Is professional in approach and style, setting an example to others; strives to demonstrate excellence through development of self, others and effective working practices.
- Always inclusive** Builds effective working relationships, recognising and including the contribution of others; promotes inclusion and inclusive practices within own work area.

## Key relationships with others

