University of Nottingham
UK | CHINA | MALAYSIA

Role profile

Job title	Research Associate/Fellow	Job family and level	Research and Teaching Level 4 (Appointment will be Level 4 Career training grade where an appointment is made before PhD has been completed)
School/ Department	Faculty of Engineering – Additive Manufacturing Research Division	Location	University Park Campus

Purpose of role

This post will be one of a number of integrated positions that are associated with large EPSRC Programme Grant entitled “Next Generation Biomaterials Discovery (EP/N006615/1)”. The overall project aim is to discover the next generation of biomaterials targeting the treatment of infectious diseases/cancers and to deliver the potential of regenerative medicine and future medical devices. The focus of this specific role within the team is the design and development of novel, bioactive, particles *via* the synthesis and use of molecularly designed polymeric surfactants. The performance of which will be tested by the project’s application specialists, either as produced or when used as feedstock’s for use in additive manufacturing processes. The candidate will be expected to optimise the molecular design and synthesis of these novel surfactant *via* controlled polymerisation routes, develop them into formulations suitable for processing via Microfluidic and AM techniques. Thus, there will also be a requirement to develop routes to scale up the manufacture of these to the multi 100’s of gram scale needed for manufacture with AM techniques. The job holder will have to coordinate with the application focused members of the team to deliver samples of formulated inks for processing, contribute to the interpretation of the spectroscopic/application data and contribute to the AM processing method development The candidate will be required to liaise with the project’s industrial collaborators and present findings of this work at national and international conferences.

	Main responsibilities (Primary accountabilities and responsibilities expected to fulfil the role)	**% time per year**
1	a) To optimise the designed polymer/ink formulation scale up processes. b) To design and develop novel polymers for Microfluidic/ Additive Manufacturing ink formulation processing. c) To design and build, in collaboration with the workshop, scale up apparatus for polymer/ink processing. d) To develop understanding about the polymer/ink material performance, in collaboration with the internal project collaborators based on their material testing data. e) Contribute to the interpretation of the spectroscopic/application data. f) Contribute to the Microfluidic/AM processing method development g) Liaise with the project’s industrial sponsors on the polymer chemistry and formulation development.	65%

2	Production of reports, publications, presentations and travel to period of collaborative work at the industrial collaborators site, scientific meetings and/or outreach to the industry, scientific community and general public.	15%
3	Maintenance of lab equipment and training of other researchers and students in the safe use of the equipment.	5%
4	Liaison meetings with partners.	5%
5	Supervision of project and PhD students.	5%
6	Any other duties appropriate to this post as required by their line manager.	5%

Person specification

	Essential	**Desirable**
Skills	▪ Relevant materials characterisation (e.g. NMR, MALDI, XRD, SEM, AFM, XPS, FTIR, GPC/MALLS, etc.). ▪ Experience in controlled polymerisation and the construction of co-polymers with 3D structure. ▪ Knowledge of Microfluidic and AM manufacturing techniques ▪ Knowledge of conventional emulsion polymerisation techniques at a laboratory scale ▪ Strong organisational skills and project management. ▪ Excellent communication and presentation skills. ▪ Effective laboratory note taking and logging experiments and data.	• Training in health and safety/risk assessment. • Skills in writing bids for research grants.
Knowledge and experience	• Significant demonstrated ability of team work. • Experience of publication of academic journal papers and reports. • Demonstrated creativity and leadership in problem solving.	• Liaising with external partners. • Designing, building or maintaining equipment. • Maintenance of lab equipment.

	• Experimental design, taking measurements, interpretation and analysis.	
Qualifications, certification and training (relevant to role)	▪ PhD (or be about to obtain) or equivalent in Chemistry or Chemical Engineering or similar Science / Engineering degree with background in polymer chemistry.	▪ PhD or equivalent with background in continuous processing of nanomaterials.

The University of Nottingham is focused on embedding equality, diversity and inclusion in all that we do. As part of this, we welcome a diverse population to join our work force and therefore encourage applicants from all communities, particularly those with protected characteristics under the Equality Act 2010.

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