Nottingham Trent University

Research Fellow
School or Department: Biosciences
Grade & Salary: Grade G £33,739 - £38,825 per annum

Role Description:

To deliver and coordinate laboratory research that generates regulatory-relevant biocompatibility, antimicrobial, biofilm and durability data to advance a novel antibiofilm urinary catheter coating towards commercialisation and clinical translation

Principal duties and responsibilities: The role will encompass all of the following, but the balance of duties and responsibilities will be determined in discussion with the post holder's line manager:

A) Subject Area

[1] Undertake biocompatibility and safety assessments of coated materials using recognised standards and protocols, including cytotoxicity screening, extractables and leachables studies, and related biological testing (following ISO 10993-18, -5, -10).

[2] In collaboration with the industry partner, perform coating characterisation, stability and durability investigations, including preparation of coated substrates and evaluation of antimicrobial performance retention over clinically relevant timeframes.

[3] Design and conduct laboratory-based microbiology and biomaterials experiments to evaluate the antimicrobial and antibiofilm performance of novel catheter coating technologies against clinically relevant urinary tract pathogens.

[4] Apply biofilm-relevant laboratory models, including flow-based systems, to assess coating performance under physiologically relevant conditions representative of urinary catheter use.

[5] Analyse, interpret and manage experimental data using appropriate statistical and scientific approaches, maintaining accurate records and generating high-quality datasets suitable for regulatory, academic and industrial audiences.

[6] Contribute to the preparation of technical reports, regulatory-supporting documentation, research publications, conference presentations and project outputs that facilitate translation of the technology towards commercialisation and clinical application.

[7] Work closely with academic and industrial collaborators to support project delivery, ensuring that experimental activities align with project milestones, regulatory requirements and commercial objectives.

B) Principal Duties

[1] Undertake individual and collaborative research on the development and evaluation of novel antimicrobial catheter coating technologies, including coating characterisation, biocompatibility assessment, durability studies and the generation of data to support regulatory and commercial translation.

[2] Analyse and interpret research findings, generate original ideas arising from the results, and prepare reports and recommendations for the project team and industrial partners.

[3] Produce high-quality research outputs, including technical reports, regulatory-supporting documentation, peer-reviewed publications, conference papers and presentations to academic, industrial and other stakeholder audiences.

[4] Contribute to the planning, organisation and delivery of the project, liaising effectively with internal and external collaborators to ensure that research objectives, milestones and deadlines are achieved.

[6] Conduct experimental work relating to antimicrobial efficacy and biofilm control using appropriate microbiological methods, recognised standards and clinically relevant laboratory models.

[7] Maintain up-to-date knowledge and skills relevant to biomaterials, biofilms, medical devices and translational research through continuing professional development and participation in appropriate networks and collaborations.

[8] Ensure that all research data, laboratory records and project documentation are accurately maintained, stored and managed in accordance with institutional policies, funder requirements and good research practice.

[9] Attend and contribute to project meetings, research group meetings and meetings with industrial partners, providing updates on progress, risks and future activities.

[10] Assist in the supervision of undergraduate and postgraduate student projects and contribute to teaching activities where appropriate, particularly in relation to laboratory techniques, research methods and specialist equipment.

Provide guidance, training and day-to-day supervision to students and other staff supporting the research programme where appropriate. N.B. The post-holder may be required to undertake any other duties which may reasonably be required as within the nature of the duties and responsibilities of the post as defined, subject to the proviso that normally any changes of a permanent nature shall be incorporated into the job description in specific terms.

Our Principles, Our Ways:

Our Ways represents a commitment to making a difference, taking bold steps, and maintaining moral standards. It's about proactively creating positive change while prioritising integrity and accountability in all our actions. We encourage colleagues to strive towards Our Ways with the following behaviours:

Our Ways		
We change lives.	**We are bold.**	**We do the right thing.**
Relationships with others	Adaptability	Planning and delivering work
Delivering through others	Problem solving	Accountability
	Developing yourself	

Personal Attributes:

Attributes	**Essential**	**Desirable**
Knowledge	A thorough understanding of biocompatibility and safety assessment of medical devices and biomaterials, including knowledge of methods relating to ISO 10993 standards, particularly ISO 10993-5 and ISO 10993-10. Expertise and understanding of current developments in biomaterials, antimicrobial technologies, medical devices or related translational healthcare technologies. Understanding of experimental design, data analysis and interpretation within a biological, biomedical or materials science research environment. Expertise in relevant software and IT packages for data analysis, scientific reporting and presentation.	Knowledge of microbiology, antimicrobial susceptibility testing, biofilms or host–microbe interactions. Knowledge of extractables and leachables studies, chemical characterisation, or medical device regulatory pathways. Understanding of technology translation and commercialisation within Higher Education or industry. Knowledge of research and funding opportunities.
Skills	Ability to perform or develop biocompatibility, cytotoxicity or toxicological assessment methodologies relevant to medical devices. Ability to design and conduct laboratory-based research using recognised scientific methodologies.	Ability to apply microbiological or biofilm-based laboratory techniques. Experience of presenting research findings to academic,

	Ability to collate, interpret and analyse complex scientific data. Ability to explain complex ideas clearly using terminology appropriate to the audience. Strong scientific writing and bibliographic research skills, including use of electronic information resources. Ability to identify and resolve technical problems that may affect the achievement of research objectives and deadlines. Systematic approach to managing information, laboratory records and research data.	industrial or regulatory audiences.
Experience	Relevant research experience in biomaterials, biomedical sciences, toxicology, medical devices or a related discipline. Experience of biocompatibility testing and/or safety assessment of materials intended for biological applications. Experience of experimental design, data collection, analysis and interpretation. Experience of preparing scientific reports and technical documentation.	Experience working to ISO 10993 standards, particularly ISO 10993-5 and ISO 10993-10. Experience of microbiology, antimicrobial materials or biofilm research. Experience of working with industrial collaborators or translational research projects. Experience of contributing to peer-reviewed publications and conference presentations.
Qualifications	Undergraduate degree and/or Master's degree (or equivalent experience) in Biomedical Science, Toxicology, Biological Sciences, Biomaterials, Biotechnology, Biomedical Engineering or another relevant discipline.	PhD (completed or near completion) in a relevant discipline. Evidence of experience in medical device biocompatibility assessment. Membership of a relevant professional body.