University of Nottingham
UK | CHINA | MALAYSIA

Role profile

Job title	Test Engineer – Electrical Machines and Drives; and Materials (magnetics and insulation)	Job family and level	Administrative, Professional and Managerial Level 4
School/ Department	Faculty of Engineering	Location	PEMC Building, Jubilee Campus

Purpose of role

Become a core member of a team working on electrical machines, electromagnetic design, magnetic and insulation materials, thermal management, control, construction and testing of high performance electrical machines. The group has world-class facilities for experimental work including approximately 3500m2 of research space and a construction and testing capability up to 5MW. The current post arises from projects with key industrial partners in the field of electrical machines for which experience in topics related to testing of electrical machines, drives and materials are required.

	Main responsibilities (Primary accountabilities and responsibilities expected to fulfil the role)	% time
1	**Technical Activities** • Organizational, Operational and Technical Familiarization • To take the lead on, plan, develop and conduct individual and/or collaborative test and validation projects and proposals either as an individual or as part of a broader program. • To acquire, analyze, interpret, and evaluate findings/data using approaches, techniques, models, and methods selected or developed for the purpose. • Manage the demand and expectation of customers by setting priorities and service levels, pre-empting customer needs/requests, identifying opportunities and facilitating change management. Where appropriate investigate and devise new methods and approaches. • Be responsible for the safe conduct of work within work area ensuring that the school's arrangements for compliance with the University Safety Policy are implemented.	45%
2	**Project Management** • Develop project plans, work plans, and schedules in collaboration with senior colleagues and project stakeholders. • Define research objectives in collaboration with senior colleagues and project stakeholders. • Manage resources in order to achieve research outputs. • Organise and participate in project meetings and technical workshops. • Track and report project progress.	20%

3	**Engagement** • To build relationship and collaborate actively with the senior level internal and external contacts, nationally and in particular with the Aerospace and Automotive industry. • Interact with research partners and industrial partners (potentially spending time at UK partner sites) to establish industrial requirements and specifications. • Utilise these customer requirements to drive the development of new and innovative systems. • Participate in and present at relevant meetings.	10%
4	**Dissemination & Exploitation** • Write technical reports and papers to disseminate results. • Disseminate results through oral and poster presentations at meetings, conferences, and seminars. • Support the exploitation of results through the identification of new IP and/or publications. • Participate in the delivery of workshops to a range of audiences in support of project dissemination, exploitation, and impact strategies. • To communicate complex and conceptual ideas to those with limited knowledge and understanding as well as to peers, using a range of media and references.	10%
5	**Proposal Development** • Support proposal development and submission to industry and to regional, national, and international funding bodies.	10%
6	**Other** • Any other duties appropriate to this post.	5%

Person specification

	Essential	Desirable

Personal Skills	• Good analytical and problem-solving skills.
	• Excellent interpersonal skills:
	  ○ Strong written and verbal communication skills with attentional to detail
	  ○ Ability to communicate with clarity on complex and conceptual ideas to a range of stakeholders.
	  ○ Active listening skills.
	  ○ Strong team player.
	• Excellent organization and time management skills with a proven ability to work to deadlines.
	• Excellent collaborative skills and ability to build relationships internally and externally in particular with industrial organizations.
	• Enthusiasm and self-motivated with the drive to embed new knowledge and take full ownership of the project and see it through to resolution.
		• Skilled in one or more of the following:
		  ○ Structured problem solving and analytical reasoning
		  ○ Process improvement e.g., six sigma
		  ○ Systems engineering

Technical Skills, Knowledge, and Experience	• Skilled in coding / programming – MATLAB, Python, or relevant packages • Experience in testing and validation of rotating machinery • Experience of designing, planning, and implementing test methods for and testing rotating machines and electrical drive systems, test rig, or similar. • Good understanding of manufacturing and assembly processes, and design for manufacture. • Experience of working in a relevant industrial or research environment. • A proven track record of developing, applying and delivering experimental and modelling research methodologies and techniques.	• Experience in a similar position. • Expertise in electrical, manufacturing, or mechanical design. • Experience ideally within Electronic/Mechanical/Mechatronic Engineering. • Knowledge of electrical drives, thermal management, rotor-dynamics, sensors, reliability engineering and familiarity with test standards are desirable. • Understanding of testing standards (motor drive test standards, magnetic materials test standards and insulation material test standards) • Plotting and data analysis ability • Developing live test report templates and interface documents to accelerate the activities. • Experience of project management.

Qualifications, certification, and training (relevant to role)	• Bachelor's in Electrical / Electronic / Mechatronics / Instrumentation (or relevant) Engineering with relevant industrial / practical experience.	• Master's in Electrical / Electronic / Mechatronics / Instrumentation (or relevant) Engineering, or with equivalent industrial / practical experience.
Other		• Willing to travel within the UK and Europe.

Expectations and behaviors

The University has developed a clear set of core expectations and behaviors 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 innovative 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.
Striving to be inclusive	Builds effective working relationships, recognizing and including the contribution of others; promotes inclusion and inclusive practices within own work area.

Key relationships with others