



Job title	Application Engineers in Industrialisation of Electrical Machines and Drives	Job family and level	Research & Teaching (R&T) Level 5
School/ Department	Faculty of Engineering	Location	Jubilee Campus

Purpose of role

The Zero Carbon Cluster is a key University priority area where we are working closely with industry to develop exciting new technologies into commercial applications that will drive delivery of the international commitments to achieve Net Zero Carbon.

The purpose of this role will be to deliver individual and collaborative commercial programmes in the area of electrical machines and drive systems, their manufacturing, industrialisation and test and validation.

The role will be responsible for generating new intellectual understanding/knowledge through the application of knowledge and for developing ideas for application of research and development outcomes.

The post holder will deliver to a project plan against commercial contracts being managed by Nottingham Drives Specialist Services in the areas of manufacturing or testing and validation or industrialisation of electrical machines, power electronics and drive systems.

	Main responsibilities (Primary accountabilities and responsibilities expected to fulfil the role)	% time per year
1	Plan, develop and conduct individual or collaborative research objectives, projects and proposals. Sustain and pursue a personal research plan and present the research findings. Conduct individual or collaborative research projects. Investigate and devise research methods and approaches.	20%
2	To acquire, analyse, interpret and evaluate findings/data using approaches, techniques, models and methods selected or developed for the purpose.	20%
3	Collaborate actively with internal and external contacts to complete research and commercial projects and to advance the discipline.	15%
4	To manage the application of a range of methodologies, approaches and techniques appropriate to the type of test and development work being undertaken. Where appropriate investigate and devise new methods and approaches.	10%

5	To communicate complex and conceptual ideas to those with limited knowledge and understanding as well as to peers, using high level skills and a range of media.	10%
6	Provide expert advice to other staff and students and possibly externally, within defined area	10%
7	Be responsible for resolving problems to meet objectives and deadlines.	10%
8	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.	5%

Person specification

	Essential	Desirable
Skills	<ul style="list-style-type: none"> ▪ A broad and deep knowledge of test methods for rotating machines and electrical drive systems. ▪ Excellent oral and written communication skills, including the ability to communicate with clarity on complex and conceptual ideas to those with limited knowledge and understanding as well as to peers, using high level skills and a range of media. ▪ Self-motivated and a natural problem solver. ▪ A broad knowledge of electromagnetic or manufacturing, or mechanical, and thermal or power electronics design applied to electrical machines and drives. ▪ High level analytical capability to facilitate conceptual thinking, innovation and creativity. Including the ability to devise, advise on and manage complex programmes. ▪ Ability to build relationships and collaborate with others, internally and externally, in particular with industrial organisations. ▪ Ability to collaborate with multidisciplinary research teams and projects including in the planning, tasking, resource management, liaison with partners and dissemination of research results. ▪ Ability to be a team leader 	<ul style="list-style-type: none"> ▪ Broad experience in the use of CAE software including finite element software for stress and dynamics analysis , power electronic simulation tools such as PLECS and computer aided design software, such as Creo ▪ Excellent analytical reasoning and problem-solving skills with ability to apply it to unusual or difficult problems. ▪ Ability to be very well organized, able to work well with a diverse cross-functional team.
Knowledge and experience	<ul style="list-style-type: none"> ▪ A proven track record of developing, applying and delivering experimental and modelling research methodologies and techniques. ▪ Experience in a similar position- ideally within Electronic/Mechanical/Mechatronic Engineering. ▪ Significant experience in electrical testing and validation of rotating machinery and drives and expertise in mechanical, manufacturing and electrical design. 	<ul style="list-style-type: none"> ▪ Experience of supervising junior colleagues. ▪ Experience in Aerospace or Automotive sectors. ▪ Knowledge of electrical drives, thermal management, rotordynamics, sensors, reliability engineering and familiarity and test standards are desirable.

	<ul style="list-style-type: none"> ▪ A consistent track record of published research in peer reviewed journals. 	
Qualifications, certification and training (relevant to role)	<ul style="list-style-type: none"> ▪ PhD in Electrical or Mechanical Engineering or demonstrable equivalent experience 	<ul style="list-style-type: none"> ▪ PhD related to Electrical Machines or Drives or Test and Validation.



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

