



<b>Job title</b>	Principal Research Fellow in Rotating Electrical Machines	<b>Job family and level</b>	Research & Teaching Level 6
<b>School/ Department</b>	Faculty of Engineering	<b>Location</b>	PEMC, Jubilee Campus

## Purpose of role

The role holder will be expected to make a significant leadership impact within the Electrical Machines and Drives Team within the PEMC group, capitalising on a proven and strong track-record of research achievements and successful project delivery.

The role holder is expected to demonstrate deep capabilities in mechanical aspects of rotating machines and ability to deliver large and complex projects. The role holder will participate and lead continuous improvement capability programmes for mechanical aspects of electrical machines and will act as the main mechanical technical authority for rotating electrical machines projects. They will be responsible for strategic planning of capability programmes and project delivery and will also contribute to the University's strategic planning processes. They will act as co-investigator or principal investigator on major research projects in the field of Mechanical aspects of Electrical Machines and will identify opportunities for the development of new research projects.

The role holder will take responsibility for the functional excellence of mechanical analysis to maintain high standards in the design, development and testing as well as contribute generally to the development of mechanical design and analysis tools and training provision of mechanical systems for rotating machines.

The role holder will not have direct line management responsibilities in the first instance but will have the responsibility for the professional development of the electrical machines mechanical design team and contribute to project administration as required.

	<b>Main responsibilities</b> (Primary accountabilities and responsibilities expected to fulfil the role)	<b>% time per year</b>
1	To provide research and organisational leadership to those working within the mechanical research area(s), by for example co-ordinating resources, the work of others to ensure the effective delivery of research projects and agree objectives and work plans with the team.	5%
2	To act as a line manager (including performance review) and personal mentor to peers and colleagues, where appropriate, and provide expert advice and coaching to colleagues and students internally and externally.	2%
3	To act as technical lead on major research projects within the area of electrical machines and power electronics. Investigate and devise new	2%

	research methods, generate new research approaches and contribute generally to the development of thought and practice in the field of Electrical Machines.	
4	To interpret findings, review and synthesise the outcomes of research projects in propulsion systems and apply to research and teaching practice, where appropriate.	5%
5	To develop and sustain an ongoing national reputation as a research leader in mechanical aspects of electrical machines, through original research work. Disseminate and explain research findings through peer-reviewed national and international publications, and present or exhibit at national/ international conferences and other similar events.	5%
6	To develop proposals for research projects which will make a significant impact by leading to an increase in knowledge and understanding and the discovery or development of new explanations, insights, concepts or processes.	5%
7	To deliver good quality research, design and analysis of electrical Machines.	60%
8	To contribute to the development of research strategies and the teaching and learning policy in the ZCC/NDSS.	5%
9	To lead and develop internal (e.g. by chairing/participating in University Committees) and external relationships (e.g. external assessors and/or active researchers) to foster future collaboration.	2%
10	To contribute to the curriculum leadership of CPD offerings in Mechanical aspects of Electrical Machines, and the teaching and learning programmes in future ZCC offerings e.g. through delivery of advanced research lectures to staff and/or delivery of course modules.	2%
11	Disseminate conceptual and complex ideas to a wide variety of audiences using appropriate media and methods to promote understanding.	2%
12	Be responsible for administrative duties in areas such as purchasing, test scheduling, training organisation, workshops, and represent the group on various committees and working groups in the wider University and outside of the University and managing or monitoring assets and budgets allocated as part of the role.	5%

## Person specification

	<b>Essential</b>	<b>Desirable</b>
<b>Skills</b>	<ul style="list-style-type: none"> <li>▪ Oral and written communication skills, including the ability to communicate with clarity on complex information.</li> <li>▪ Ability to deliver on large and complex projects.</li> <li>▪ Ability to provide effective leadership and management of groups and teaching activities.</li> <li>▪ Ability with demonstrated success in obtaining sources of funding, providing effective leadership, planning, and building, resourcing a team and delivering research results.</li> <li>▪ Ability to facilitate conceptual thinking, innovation and creativity.</li> </ul>	
<b>Knowledge and experience</b>	<ul style="list-style-type: none"> <li>▪ Track record of published research, development and delivery of high quality research in rotating electrical machines.</li> <li>▪ Strong understanding of mechanical aspects of electrical machines including rotor dynamics, bearing systems and mechanical design.</li> <li>▪ Research and teaching experience with an established national and growing international reputation in the field of mechanical aspects of rotating electrical machines.</li> <li>▪ Experience in developing and devising new research programmes, models, techniques and methods.</li> <li>▪ Record of promoting and maintaining collaborative links with industry/business/community.</li> </ul>	<ul style="list-style-type: none"> <li>▪ An understanding of University management systems and the wider higher education environment.</li> <li>▪ Previous experience of the supervision and pastoral care of students and researchers.</li> <li>▪ Experience with testing of electrical machines.</li> <li>▪ Experience with magnetic bearing systems.</li> <li>▪ Knowledge of thermal and lubrication systems applied to electrical machines.</li> </ul>
<b>Qualifications, certification and training (relevant to role)</b>	<ul style="list-style-type: none"> <li>▪ PhD or equivalent in relevant subject area.</li> <li>▪ Or equivalent professional/research experience.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Membership of a professional body, where appropriate.</li> </ul>



## 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** Understands that it is essential to provide a structure that people can thrive in. Knows how to communicate with people to create a healthy working environment and get the best out of people.
- Taking ownership** Communicates vision clearly, providing direction and focus. Knows how to create a productive environment where people are inspired and can work cross-departmentally in partnership.
- Forward thinking** Has the ambition to be a pioneer in own area, anticipating the future change, needs and challenges. Knows how to innovate within their work context and champions others to be inspired to be part of this ambition
- Professional pride** Keeps up to date on latest thinking, trends and work practices. Supports team to be thought leaders; willing to challenge if obstacles get in the way.
- Always inclusive** Establishes far reaching partnerships, well beyond own area across a broad range of networks. Understand role to pay due regard to the needs of the whole community.

## Key relationships with others



