Role profile

<table>
<thead>
<tr>
<th>Job title</th>
<th>Research Associate / Fellow</th>
<th>Job family and level</th>
<th>Research and Teaching Level 4 Training Grade/Level 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>School/Department</td>
<td>Faculty of Engineering - Power Electronics Machines &amp; Control Group</td>
<td>Location</td>
<td>Aerospace Technology Centre, Jubilee Campus</td>
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Purpose of role

The successful candidate will undertake research on electrical machine design with focus on their Reliability aspects. This will be for pure research but also for industrial projects, including aerospace and automotive applications.

<table>
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<tr>
<th>Main responsibilities</th>
<th>% time per year</th>
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<tbody>
<tr>
<td>(Primary accountabilities and responsibilities expected to fulfil the role)</td>
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<tr>
<td>1. To deliver research as part of a collaborative team and contribute to the</td>
<td>60%</td>
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<tr>
<td>achievement of specific research objectives as defined by line manager</td>
<td></td>
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<tr>
<td>2. To collaborate in writing papers for submission to journals and conferences and</td>
<td>20%</td>
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<tr>
<td>prepare progress reports on the results of research.</td>
<td></td>
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<tr>
<td>3. To present the results of research at project progress meetings and at conferences</td>
<td>10%</td>
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<tr>
<td>4. To assist in the co-ordination of the research and related administrative tasks,</td>
<td>10%</td>
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<tr>
<td>including liaising with external project collaborators and providing assistance with</td>
<td></td>
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<tr>
<td>supervision of doctoral students.</td>
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## Person specification

<table>
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<tr>
<th>Skills</th>
<th>Essential</th>
<th>Desirable</th>
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|        | • Evidence of being familiar with FE software such as MotorCad, ANSYS Maxwell, Infolytica Magnet.  
|        | • Evidence of being familiar with numerical computing and statistical tools.  
|        | • Evidence of excellent oral communication skills (proved by the attendance as presenter at international conferences).  
|        | • Evidence of excellent technical writing skills.  
|        | • Well organized and self-motivated, able to work independently and as part of a team  
|        | • Evidence of planning, managing and delivering engineering projects.  
|        | • Practical skills in electrical machine design.  
|        | • Familiar with thermal, electrical and mechanical issues of electrical machines.  
|        | • Skills in writing bids for research grants.  
|        | • Strong track record of scientific publications in high-impact journals.  
|        | • Evidence of being familiar with Multiphysics Software such as ANSYS Workbench (Fluent, Static and Dynamic Structural).  

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<thead>
<tr>
<th>Knowledge and experience</th>
<th>Essential</th>
<th>Desirable</th>
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|                          | • Evidence of experience in a research and development environment.  
|                          | • Evidence of experience in electromagnetic and thermal design of permanent magnet synchronous machines for transportation applications.  
|                          | • Evidence of experimental work in the area of insulation testing.  
|                          | • Evidence of knowledge of the degradation of insulation of electrical machines and experience of modelling of these phenomena.  
|                          | • Evidence of experience in accelerated lifetime tests for electrical machines insulation.  
|                          | • Knowledge and experience of aspects related to lifetime consumption and degradation of electrical machines.  
|                          | • Evidence of experience in dielectric testing tools such as Partial Discharges, Dissipation Factor, Insulation Capacitance/Resistance, AC/DC Hipot testing.  
|                          | • Membership to societies in the field of electrical and electronics engineering (e.g. IEEE, IET).  
|                          | • Serving as reviewer for peer-reviewed journals/conferences in the field of electrical machines and drives.  

<table>
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<tr>
<th>Qualifications, certification and training (relevant to role)</th>
<th>Essential</th>
<th>Desirable</th>
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|                                                              | • First degree or equivalent in electrical/electronic engineering or a related subject.  
|                                                              | • PhD or equivalent (or near completion) in electrical engineering or mechanical or material engineering  
|                                                              | • Qualifications or evidence of completed courses in the area of electrical machines design.  
|                                                              | • Qualifications or evidence of completed courses in the area of partial discharges in insulating materials.  

RPF Band C
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.

- Qualifications or evidence of completed courses in the area of accelerated aging tests and insulation degradation.
- Evidence of courses/training in the field of electrical machines, covering any one of the following: 1) electromagnetic design, 2) thermal management, 3) insulation lifetime modelling/testing.
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

- **Line manager**
  - Michael Galea

- **Role holder**
  - Research Associate/ Fellow

- **Key stakeholder relationships**
  - Colleagues
  - Students