# Role profile

<table>
<thead>
<tr>
<th>Job title</th>
<th>Research Associate/Fellow in Electrical Machines</th>
<th>Job family and level</th>
<th>Research and Teaching Level 4 (Appointment will be Level 4 Career training grade where an appointment is made before PhD has been completed)</th>
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<tbody>
<tr>
<td>School/Department</td>
<td>Engineering – PEMC</td>
<td>Location</td>
<td>University Park Campus</td>
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**Purpose of role**

Insert brief paragraph describing purpose of role here (100 words recommended maximum).

**Main responsibilities**  
(Primary accountabilities and responsibilities expected to fulfil the role)

| % time per year | 1 Electrical Machine design and analysis  
|----------------|--------------------------------------------|
| 40%            | - Detailed electromagnetic design of electrical machines, including PM, Induction and Reluctance type motors  
|                | - Fluent in thermomechanical design of electrical machines  
|                | - Analysis and understanding of high frequency effects |

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<tr>
<th>% time per year</th>
<th>2 Electrical Machine experimental testing and characterisation</th>
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| 20%            | - Experimental testing of motors  
|                | - Analyse experimental results and correlate to analysis |

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<tr>
<th>% time per year</th>
<th>4 Dissemination of results</th>
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| 10%            | - Writing of research reports and papers in order to disseminate research results.  
|                | - Develop a track record of published research findings with the industrial partner and in internationally-respected peer-reviewed journals where suitable.  
|                | - Further dissemination of results through invited oral and poster presentations at meetings with industrial and research partners, but also in academic circles where suitable. |

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<th>% time per year</th>
<th>5 Industrial Support/Project Management</th>
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| 30%            | - Maintain regular contact and act as a technical contact with industrial sponsors and respond to enquiries.  
<p>|                | - Attend meetings at sponsors sites as required. |</p>
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<th>Skills</th>
<th>Essential</th>
<th>Desirable</th>
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|        | • Proven Research skills.  
|        | • Excellent oral and written communication skills, including the ability to communicate with clarity on complex information.  
|        | • Ability to apply finite element packages, (ex. ANSYS, Magnet, JMAG) to the design and analysis of different type of electrical machines  
|        | • Good programming ability  
|        | • High analytical ability to analyse data, and find technical solutions.  
|        | • Ability to assess and organise resource requirements and deploy effectively.  
|        | • Ability to build relationships and collaborate with others, both internally and externally.  
|        | • Ability to foster a research culture and commitment to learn in others.  
|        | • Familiarity with thermo-mechanical design and analysis of rotating machinery  
|        | • Ability to conduct experimental characterization of electrical machines  
|        | • Familiarity with the concept of multifunctional design.  
| Knowledge and experience | • Experience of management of research projects, including liaison with sponsors.  
| | • Experience of report writing and publication of research results in journals and conferences.  
| | • Previous experience in a research environment.  
| | • Experience of finite element analysis in a research environment.  
| | • Experience with experimental testing of electrical machines  
| | • Knowledge of electromagnetic, thermal, and mechanical design of rotating machinery  
| | • Grant proposal (writing of).  
| | • Mechanical design experience  
| | • Experience in manufacturing of electrical machines  
| | • Experience characterizing engineering materials  
| | • Industrial experience.  
| Qualifications, certification and training (relevant to role) | • Good (2.1) first degree (or equivalent) in electrical/mechanical engineering or a related subject.  
| | • PhD or equivalent (or near completion) in engineering, applied mathematics or a related subject area and research experience in electrical machines  
| | • PhD or post-doctorate research on high frequency electrical machines  
| |  

RPF Band C
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<th>Personal attributes</th>
<th>Ability to work in a team, lead and collaborate actively and professionally with industrial partners. Good interpersonal &amp; organisational skills.</th>
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<td>Self-motivated and ability to work with minimum supervision.</td>
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<td>Good written and verbal communication skills.</td>
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<td>Ability to take initiative.</td>
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<td></td>
<td>Ability to lead, teach &amp; mentor other researchers and students.</td>
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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.
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**
- **Role holder**
- **Key stakeholder relationships**: Colleagues, Students

[Diagram showing relationships: Line manager to Research Associate/Fellow to Colleagues, Students]