### Purpose of role

To research into novel power converter topologies regarding Electric Vehicle power systems and develop highly compact manufacturing methodologies to take advantage of wide bandgap semiconductors.

<table>
<thead>
<tr>
<th>Main responsibilities</th>
<th>% time per year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong> Collaborate within research projects aiming at the exploitation of wide bandgap semiconductors, particularly in the manufacturing processes involved in heterogeneous integration and high performance control of power electronic converters.</td>
<td>30%</td>
</tr>
<tr>
<td><strong>2</strong> Supporting the line manager within collaborative projects. This will consist in: preparing plans, deliverables, templates, keeping risk and change register, organising meetings, keeping communication with the project partners and funding body, contributing to the intellectual life of the PEMC group, including interaction with other early stage researchers, participation in strategic meetings, and in discussions and online activity.</td>
<td>30%</td>
</tr>
<tr>
<td><strong>3</strong> Writing new research proposals</td>
<td>15%</td>
</tr>
<tr>
<td><strong>4</strong> Production of reports and publications, dissemination of results - presentations and travel to meetings and/or outreach to the industry, scientific community and general public</td>
<td>15%</td>
</tr>
<tr>
<td><strong>5</strong> Research Supervision. As a member of the research group, supervise postgraduate students, regularly liaising with researchers and other students in the team. Responsible for training of new researchers and support in ensuring that project objectives are achieved.</td>
<td>5%</td>
</tr>
<tr>
<td><strong>6</strong> Any other duties appropriate to this post as required by their line manager</td>
<td>5%</td>
</tr>
</tbody>
</table>
## Person specification

### Essential

<table>
<thead>
<tr>
<th>Skills</th>
<th>Knowledge and experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Have an excellent command of the English language with written and verbal communication that is clear and easy to understand</td>
<td>• Practical experience in embedding wide bandgap semiconductors together with passive components</td>
</tr>
<tr>
<td>• Be able to explain technical concepts to non-technical people.</td>
<td>• Good knowledge of Power Electronic Convertors</td>
</tr>
<tr>
<td>• Be able to build strong alliances with colleagues and stakeholders and engage effectively with personnel in a wide range of roles</td>
<td>• Practical, hands on experience in the design, construction and testing of electrical/electronic circuits and real time programming.</td>
</tr>
<tr>
<td>• Be a self-motivated proactive individual able to organise your own time effectively, have a flexible approach and able to work to tight timescales, either alone or as a member of a larger team.</td>
<td>• Experience of writing reports and conducting effective research</td>
</tr>
<tr>
<td>• Be enthusiastic and self-motivated with the drive to embed new knowledge and take full ownership of the project and see it through to resolution.</td>
<td>• Knowledge or experience of manufacturing processes and power converter design and control</td>
</tr>
<tr>
<td>• Have a “can do” attitude and demonstrate a passion for new technology and learning. Be adaptive to change in a dynamic working environment.</td>
<td>• Worked in a similar or related role within an industrial, scientific or research environment.</td>
</tr>
<tr>
<td>• Have the ability to plan a project, execute the plan and make adjustments according to delays and technical issues.</td>
<td>• Practical experience of Power Electronic Convertors</td>
</tr>
<tr>
<td>• Ability to influence and engage collaboratively between the Industrial collaborators and the University of Nottingham.</td>
<td>• Relevant industrial experience</td>
</tr>
</tbody>
</table>

### Desirable

- Experience in design and modulation of DC-DC, AC-AC and AC-DC converters.
The University strongly endorses Athena SWAN principles, with commitment from all levels of the organisation in furthering women’s careers. It is our mission to ensure equal opportunity, best working practices and fair policies for all.

<table>
<thead>
<tr>
<th>Qualifications, certification and training (relevant to role)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Relevant PhD or about to obtain (or equivalent) in Power Electronics or related subject</td>
<td>• Bachelors or Masters first degree in Electrical and/or Electronic Engineering</td>
</tr>
<tr>
<td>• Bachelors or Masters first degree in Electrical and/or Electronic Engineering</td>
<td>• Relevant PhD in an engineering discipline, materials science or physics</td>
</tr>
</tbody>
</table>

Athena SWAN Silver Award
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**
  - Line Manager - PEMC research Group

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

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