



Job title	Thermal Research Engineer (KTP Associate)	Job family and level	Off scale – KTP Associate
School/ Department	Faculty of Engineering	Location	Motor Design Limited 5 Edison Court, Wrexham Technology Park, Wrexham, LL13 7YT

Purpose of role

To lead the delivery of a KTP project to develop fast and accurate modelling capability to simulate and design oil spray cooling systems for the next generation of electric traction motors. The aim is to transfer knowledge from real-world testing and academic research to developing practical modelling capability for motor design engineers.

There are periods of time when the work will be conducted at the University of Nottingham to use the labs and engine rig for testing.

	Main responsibilities (Primary accountabilities and responsibilities expected to fulfil the role)	% Time
1	Correlation of existing test data with simulation, review of simulation methods.	5%
2	Industrial visits and conferences: <ul style="list-style-type: none"> - 1 week of industrial visits in Italy (automotive customers) - 1 month visit to Italian Automotive Valley for industrial case study - Attendance at top technical conferences in the field of electrical machines 	10%
2	Design and Manufacture of Experimental Facility.	15%
3	Carry out the experiments for different cooling setups.	15%
4	Simulation method development, correlation test and simulation results, demonstrate on a case study. Develop marketing materials to showcase results.	30%
5	Simulation software development, develop a proof of concept software tool.	10%
6	Disseminate the project outputs in both the academic venues and commercial domains. IP protection planning. Formulate a publication timing plan, with high impact conferences targeted to present key project outputs.	5%

7	Time allocation to personal and professional training and development.	10%
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Person specification

	Essential	Desirable
Personal skills	<ul style="list-style-type: none"> • Have an excellent command of the English language with written and verbal communication that is clear and easy to understand • Be able to build strong alliances with colleagues and stakeholders and engage effectively with personnel in a wide range of roles. • Be a self-motivated proactive individual able to work to tight timescales, either alone or as a member of a larger team. • 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. • Have a “can do” attitude and demonstrate a passion for new technology and learning. Be adaptive to change in a dynamic working environment. 	<ul style="list-style-type: none"> • Have the ability to plan a project, execute the plan and make adjustments according to delays and technical issues. • Be able to explain technical concepts to non-technical people.
Knowledge and experience	<ul style="list-style-type: none"> • Previous experience of thermal modelling of electrical machines • Demonstrable hands-on test experience combined with a more theoretical modelling experience • Knowledge of different electrical machine types, their cooling arrangements and their constituent components • Strong aptitude for physics and maths • An inclination towards experimental R&D, with evidence of robust data analysis in prior project/university work 	<ul style="list-style-type: none"> • Relevant industrial experience • Awareness and understanding of commercial drivers • Experience with customer engagements and building relationships • Relevant experience in a research environment involving the design of flow-loops and rotating mechanical setups
Qualifications, certification and training (relevant to role)	<ul style="list-style-type: none"> • High achieving Mechanical Engineering graduate (or related discipline e.g. Thermal, Automotive or Aerospace Engineering) with a first class or upper second class degree, or equivalent or a mechanical engineering related post-graduate qualification (integrated MEng, MSc or PhD) 	<ul style="list-style-type: none"> • PhD Degree (or near to completion) in engineering, preferably with a thermo-mechanical focus

Other	<ul style="list-style-type: none">• Willingness to travel within the UK and spend periods of time working in Nottingham	
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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 friendly, engaging and receptive, putting others at ease. Actively listens to others and goes out of way to ensure people feel valued, developed and supported.
- Taking ownership** Is clear on what needs to be done encouraging others to take ownership. Takes action when required, being mindful of important aspects such as Health & Safety, Equality, Diversity & Inclusion, and other considerations.
- Forward thinking** Drives the development, sharing and implementation of new ideas and improvements to support strategic objectives. Engages others in the improvement process.
- Professional pride** Is professional in approach and style, setting an example to others; strives to demonstrate excellence through development of self, others and effective working practices.
- Always inclusive** Builds effective working relationships, recognising and including the contribution of others; promotes inclusion and inclusive practices within own work area.

Key relationships with others

