Postgraduate study
Department of Electrical and Electronic Engineering
www.nottingham.ac.uk/eee

The University of Nottingham

UNITED KINGDOM • CHINA • MALAYSIA

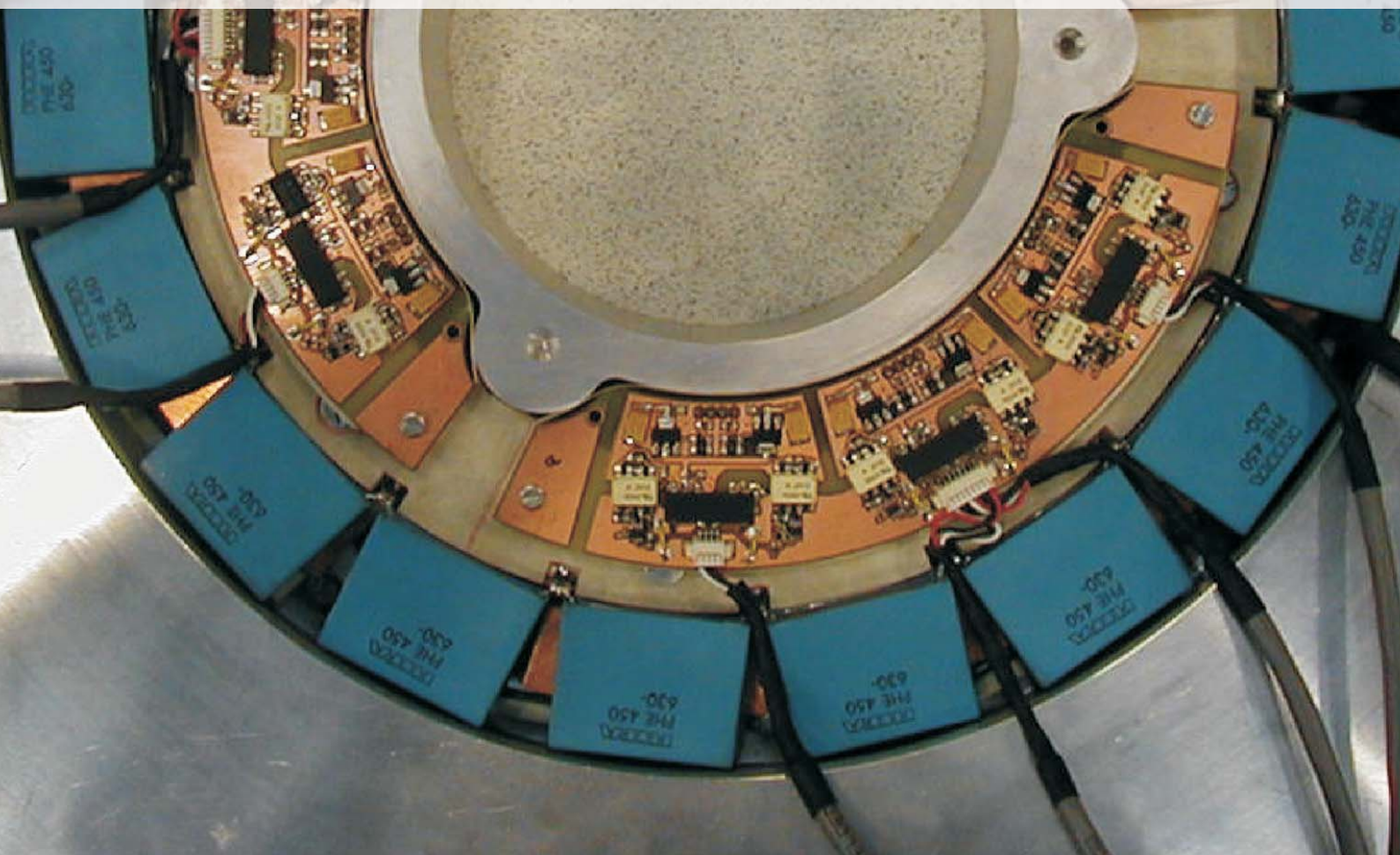
Power Electronics and Drives MSc

The control and conversion of electric power using solid-state techniques are now commonplace in both the domestic and industrial environments. A knowledge and understanding of the diverse disciplines encompassed by Power Electronics: devices, converters, control theory and motor drive systems, is now essential to all power engineers. Power electronics, driven by the need for greater energy efficiency and more accurate control of a wide range of systems, is developing rapidly.

This course provides a specialist education in power electronics and drives techniques, covering key fundamental principles along with modern applications and current practices.

Students will develop:

- the analytical and critical powers for the development of hardware and software required for power electronics and drives
- the ability to plan and undertake an individual project
- interpersonal communication and professional skills
- the ability to communicate ideas effectively in written reports
- the technical skills to equip them for a leading career in power electronics or electrical machine drive systems
- an understanding of how power electronics are applied within key industries such as aerospace and power supply



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Course structure

This course is taught on a full-time basis over one year and is also offered as a postgraduate diploma which follows the same taught modules but does not include the research project. The course consists of 120 credits of taught modules and a 60 credit independent research project. Please be aware modules are subject to change.

Core modules - 90 credits

Autumn semester

Advanced Control System Design with project	20 credits
Power Electronic Design	15 credits
Power Electronics Integration	10 credits

Spring semester

Power Systems for Aerospace, Marine and Automotive Applications	15 credits
Advanced Power Conversion	10 credits
Advanced AC Drives with project	20 credits

Optional modules

Autumn semester - 20 credits

Power Networks	10 credits
Electrical Machines	10 credits
Control Systems Design	10 credits

Spring semester - 10 credits

FACTS and Distributed Generation	10 credits
Advanced Electrical Machines	10 credits

Individual Project

Following the successful completion of the taught modules, an individual research project is undertaken during the summer term.

Previous research projects on this course have included:

- development of a microprocessor controlled variable speed permanent magnet motor for an aerospace application
- experimental determination of induction motor torque-speed curves under variable speed
- evaluation of stray reactance in a current source rectifier for marine propulsion motor drives and wind power generators
- design, build and testing of a DSP-controlled switched reluctance motor for an automotive power assisted steering application

Funding opportunities

Find out more about funding options at:
www.nottingham.ac.uk/graduateschool/funding

Employment prospects

Students of this course have entered into roles in design and development within major international companies or government agencies, obtained consultancy posts with leading contract consultant companies and moved into successful academic careers.

Entry requirements

Applicants should have at least a 2.2 honours degree (or international equivalent) in electrical or electronic engineering.

English language requirements:

- IELTS score of at least 6.0 with a minimum score of 5.5 in individual elements

Other qualifications are accepted and exceptions are sometimes made for students who have had their education entirely in the medium of English and where English is a well-established second language.

How to apply

Candidates are encouraged to apply at:
https://pgapps.nottingham.ac.uk

Contact us

For further information, please contact:

PGT Admissions
Department of Electrical and Electronic Engineering
t: +44 (0)115 95 15600
e: pg.adm@eee.nottingham.ac.uk
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