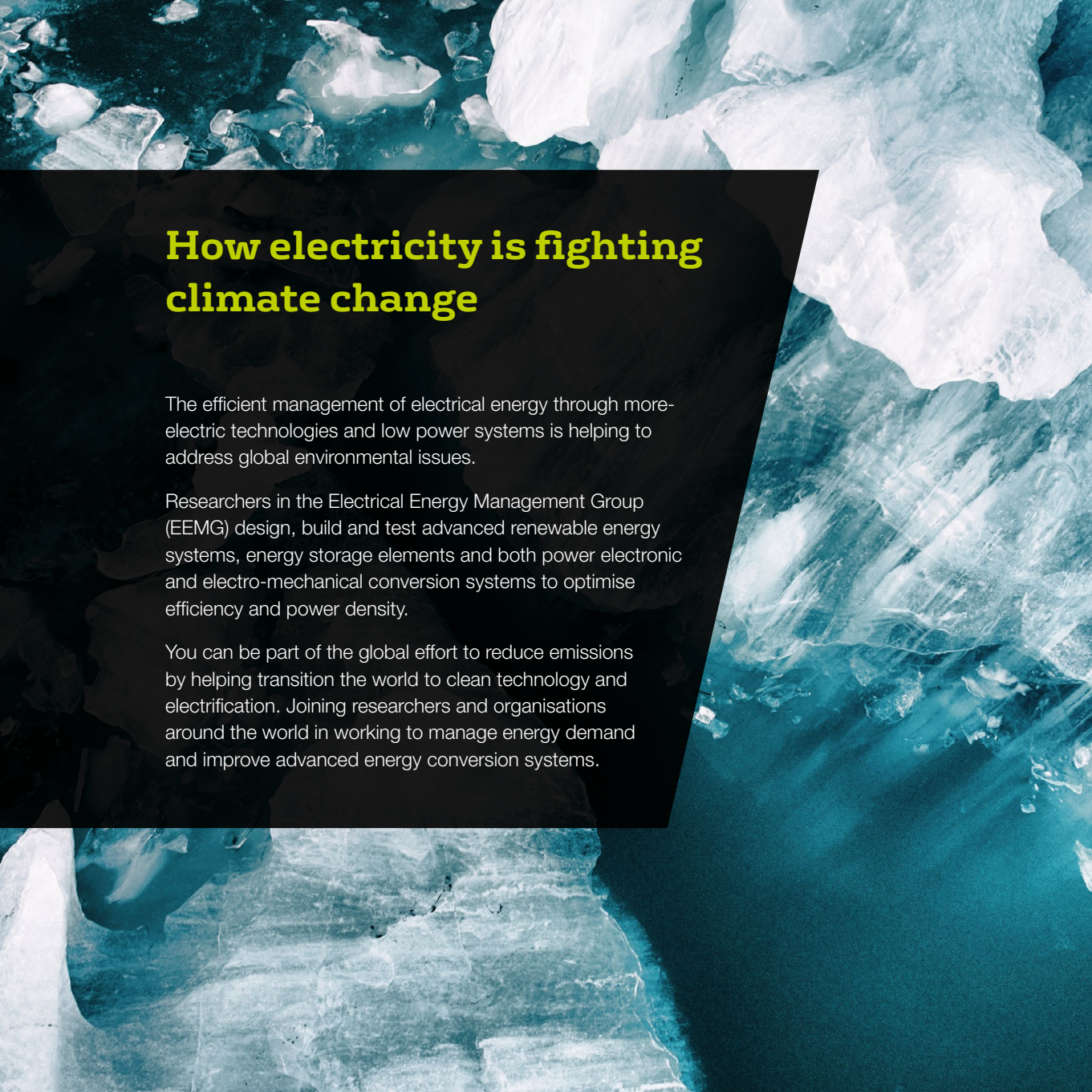
University of BRISTOL

Be part of the Electric Revolution

with an Electrical Energy Management Group PhD



How electricity is fighting climate change

The efficient management of electrical energy through more-electric technologies and low power systems is helping to address global environmental issues.

Researchers in the Electrical Energy Management Group (EEMG) design, build and test advanced renewable energy systems, energy storage elements and both power electronic and electro-mechanical conversion systems to optimise efficiency and power density.

You can be part of the global effort to reduce emissions by helping transition the world to clean technology and electrification. Joining researchers and organisations around the world in working to manage energy demand and improve advanced energy conversion systems.

By joining the EEMG you could help:

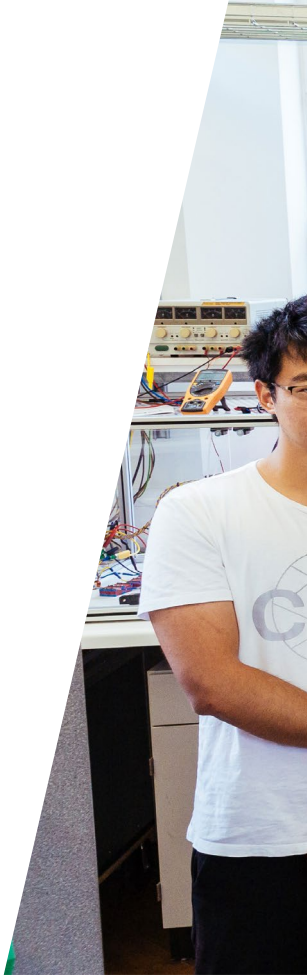
- build and design new electric vehicle drivetrains to help tackle air pollution and enable the UK to reach its target of all new cars effectively being zero emission by 2040 **www.gov.uk/government/publications/industrial-strategy-the-grand-challenges/missions**
- develop small - and large-scale energy systems that will allow millions of people around the world who are without electricity to access clean cooking fuels and technologies, thereby helping to contribute to the United Nations' sustainable development goal 7 of universal access to affordable, reliable and sustainable energy by 2030 **https://sustainabledevelopment.un.org/sdg7**
- improve energy efficiency by developing advance power electronics to make equipment more compact and lightweight, enabling the UK to reach the EU 20-20-20 targets **https://ec.europa.eu/clima/policies/ strategies/2020_en** and help reduce global warming to meet the IPCC's target to limit global warming to 1.5°C. **ec.europa.eu/clima/policies/ strategies/2020_en** and **ipcc.ch/sr15/**

The Electrical Energy Management Group

Our work focuses on designing innovative power electronics, electrical drives and electrical generation. The development and application of these technologies will bring about game-changing transformations that will help to sustain the growing global population.

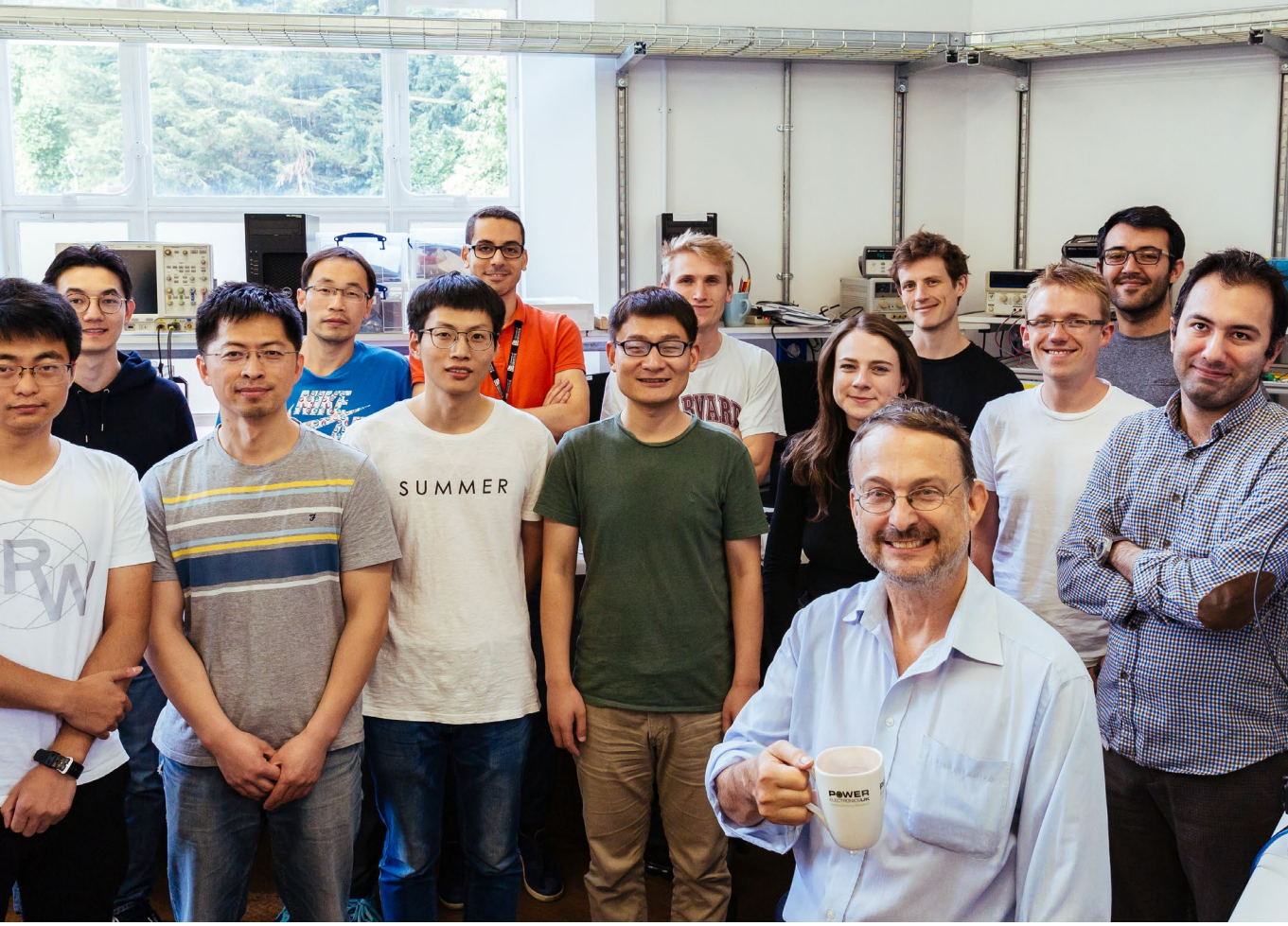
We are looking for enthusiastic graduates to join a multi-disciplinary team of researchers whose innovations are changing the face of energy consumption and production.

Apply now to do a PhD with the EEMG
bristol.ac.uk/study/postgraduate/apply

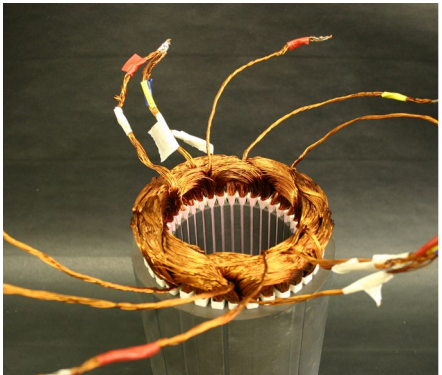


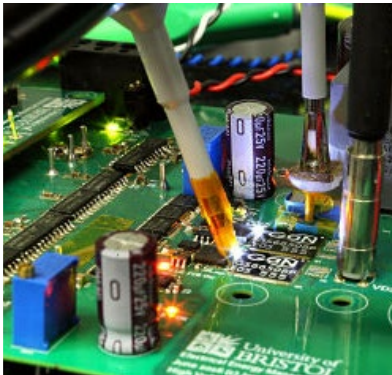
"The in-depth theoretical undertaking and practice realisation of technologies underpin and drive our work in developing a low carbon future."

Prof Phil Mellor, Head of Group


SUMMER
POWER

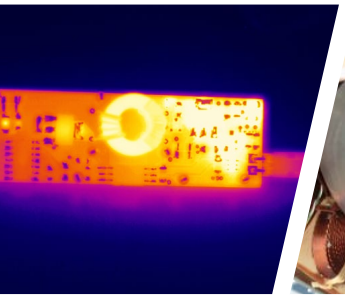

bluestone
national park resort

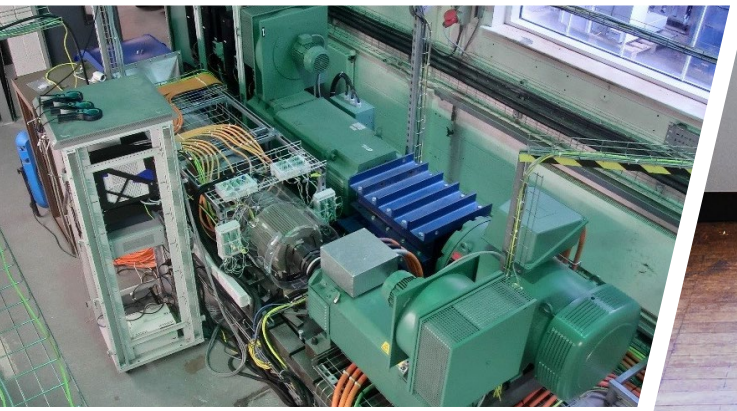




"My research aims to aid the hybridisation and electrification of aircraft, reducing the environmental footprint of aviation. We are investigating the air-cored machine topology as a solution to meet the power density targets set by the Aerospace Technology Institute."

Suzie Collins, EEMG PhD





Our research facilities

- joint design and manufacturing of machines, drives and other types of power electronic converters
- high-fidelity AC/AC power conversion equipment for the optimisation of drive efficiency, also applicable to networks
- 200 kVA and 1 MVA dynamic testing and hardware-in-the-loop simulation
- expansive measurement equipment with torque transducers, high-bandwidth (GHz+) oscilloscopes, impedance analysers, source meters, specialist probes, real-time control and measurement systems
- simulation tools and validation techniques spanning systems and sub-components
- environmental chambers and a high-precision calorimeter for the evaluation of losses in power electronics
- access to main engineering workshop based here, where you can carry out precision machining, wire eroding, laser cutting and PCB manufacture
- use of the Faculty of Engineering's other laboratories, such as the composite fibre, hydraulics and aerodynamics laboratories

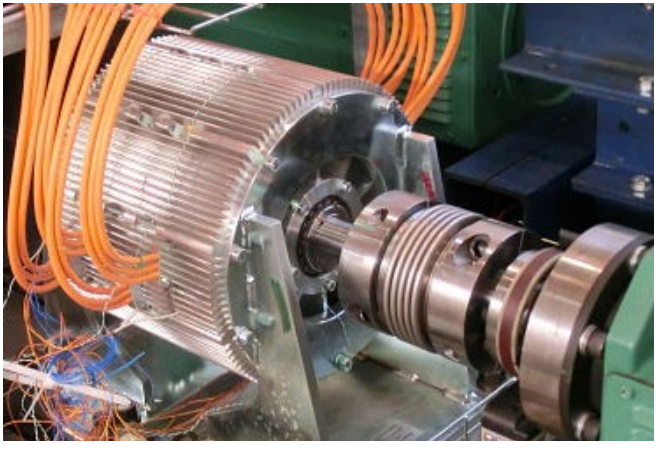
"Having a strong technical background in power electronics and energy conversion positioned me well to create an environment of innovation to deliver business growth within my company."

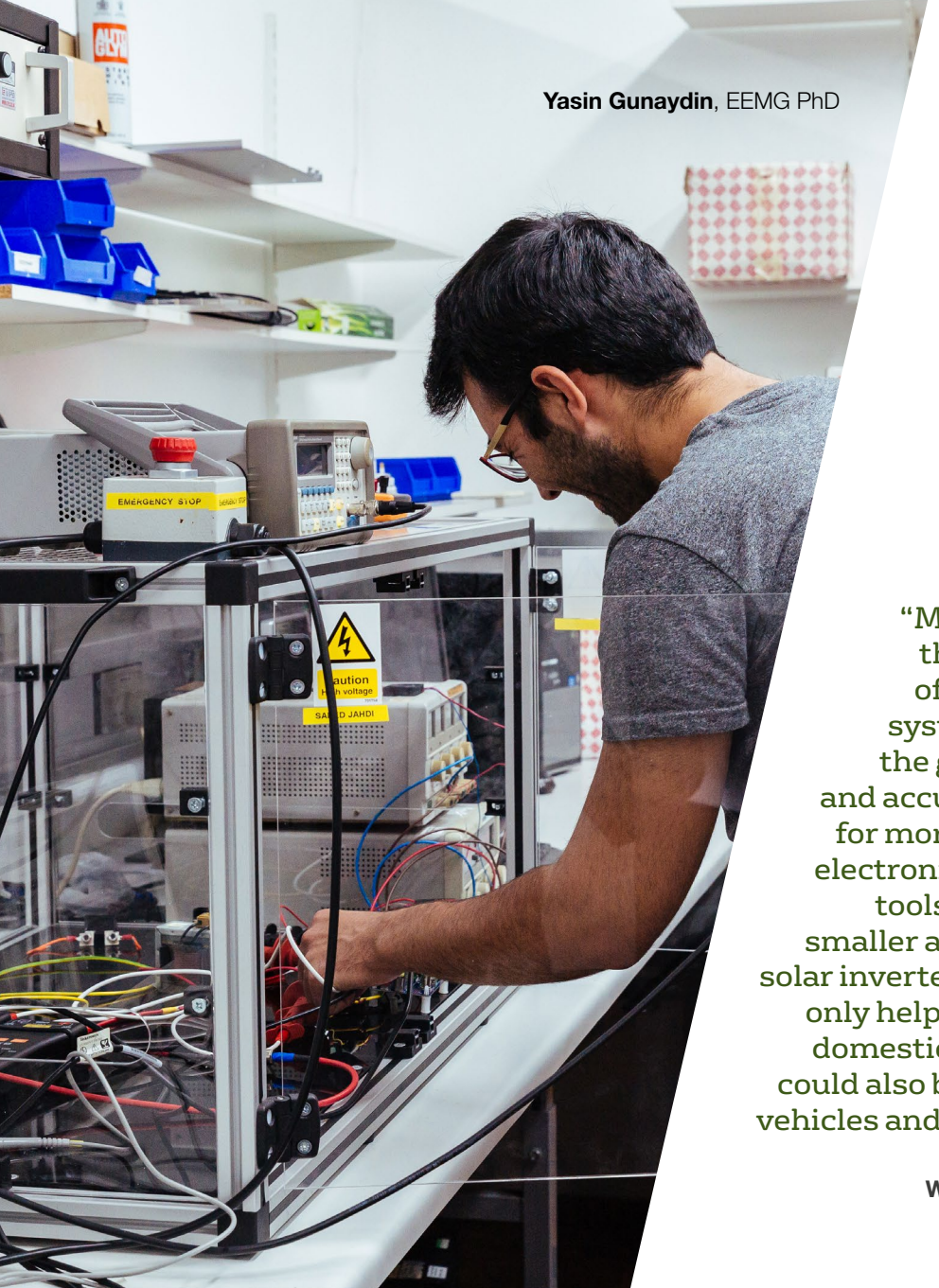
Dr Will Dury EEMG Alumni
Challenge Director - Driving the Electric Revolution at Innovate UK

Accelerate your career

A PhD with our group will offer you a unique opportunity to develop in-depth skills and knowledge in accelerating the electrification of vehicles, enhancing green energy generation and developing innovative semi-conductor materials, micro-electronics and power-electronics. You'll direct your own work, test in real world conditions and see first-hand the impact of your research.

Many of our PhD students are sponsored by and work closely with leading UK companies. A PhD with us will advance your career development and open doors for you.





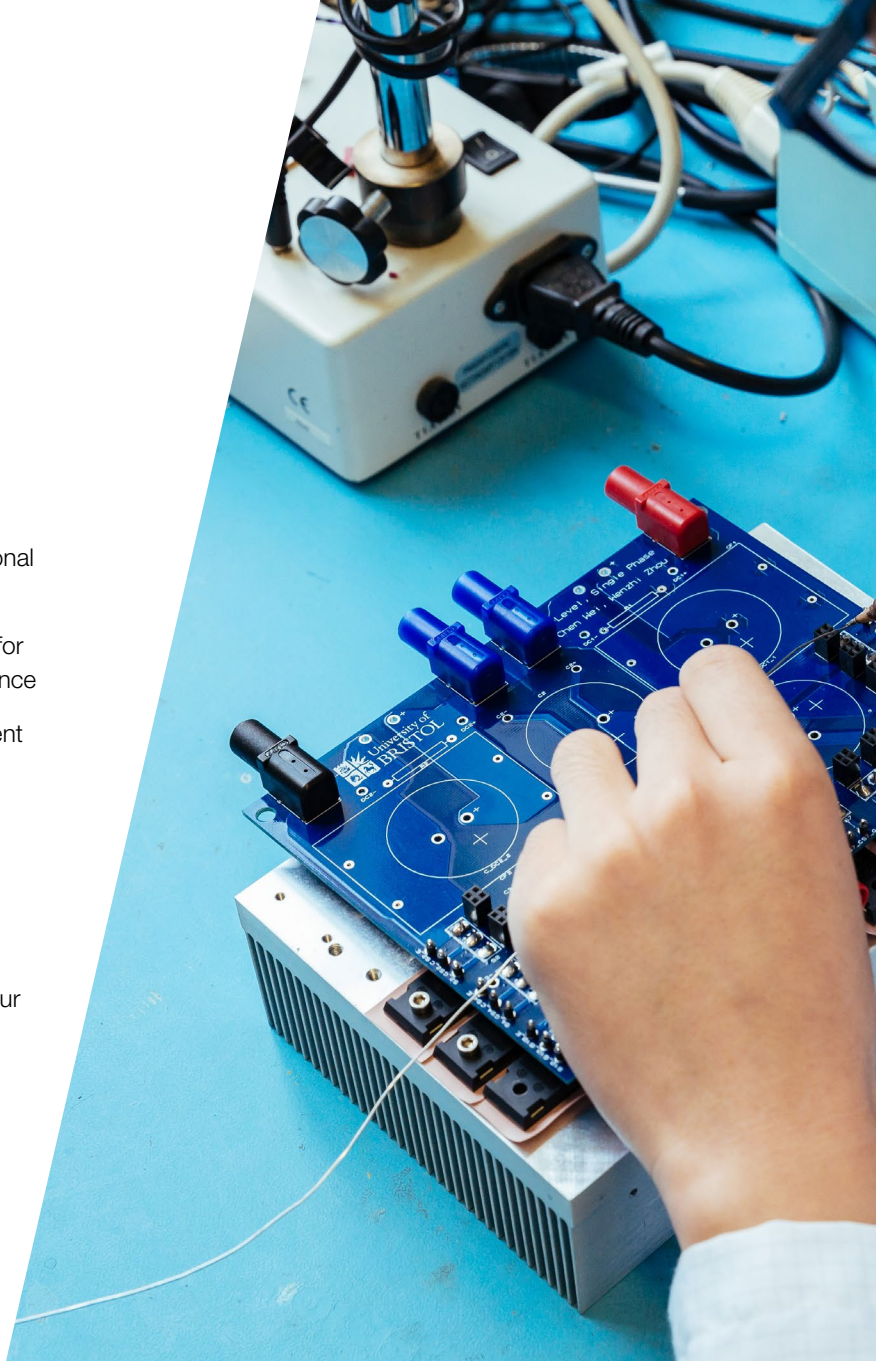
Yasin Gunaydin, EEMG PhD

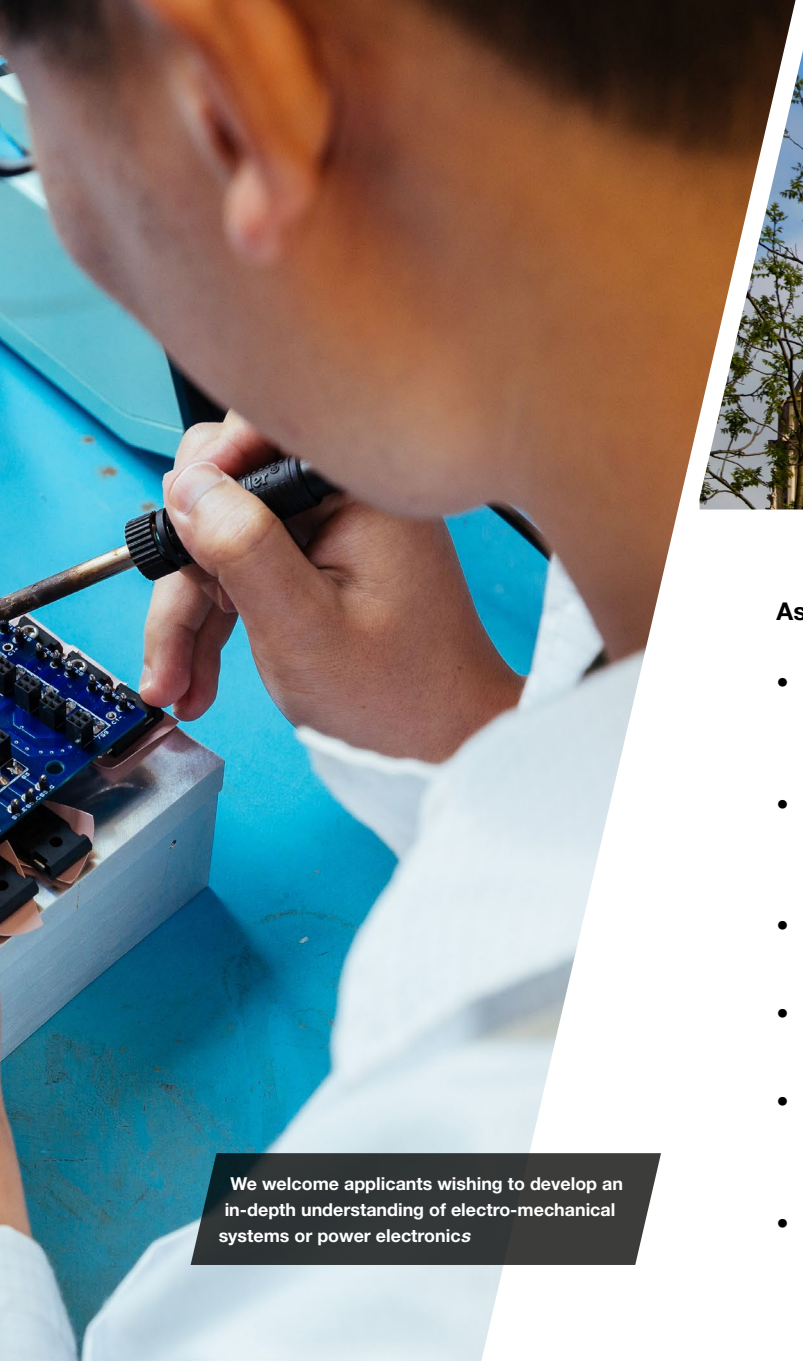
"My research on the thermal modelling of power electronic systems will support the generation of fast and accurate design tools for more compact power electronic systems. These tools aid the design of smaller and more portable solar inverters, which will not only help popularise green domestic solar energy but could also be used in electric vehicles and electric aircraft."

Wenbo Wang, EEMG PhD

What we can offer you:

- enhanced tax-free stipends
- membership of the top international research networks in the field
- research expenses and funding for international conference attendance
- access to the very best equipment and facilities
- industry sponsorship and placements
- training in state-of-the-art technologies
- professional development with our Bristol Doctoral College





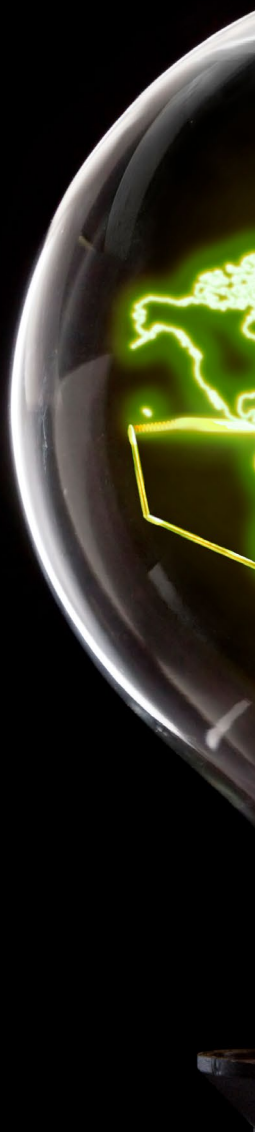
We welcome applicants wishing to develop an in-depth understanding of electro-mechanical systems or power electronics

As part of your PhD you will:

- work closely with academic experts, each of our academics take on no more than two PhD students per academic year
- be part of a world-leading research group at one of the UK's top five universities for research (THE analysis of REF 2014)
- learn at a worldwide top 50 and UK top 10 ranked university (QS 2020)
- tackle the high-impact clean energy challenges of the future
- advance your career, our graduates are sought after by leading employers (High Fliers 2019)
- live in Bristol, the UK's top city (Sunday Times 2017)

"It has been a real privilege to be a part of an international collaboration and really fun to work with people on interesting problems."

Will Clements, EEMG PhD



Electrical Energy Management Group

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