

# Electrical Energy Management Research Group

## University of Bristol, U.K.



Research into low-carbon electrical systems that are enabled by advanced, compact and highly efficient electrical machines and actuators, and power electronic conversion systems. Management of electrical power, with a focus on the electrical systems employed in aircraft, automotive drive systems and renewable energy plant. Design and analysis of machines, actuators and passive magnetic devices, including thermal modelling. Research into power electronics for a very wide range of applications from energy scavenging to high-power aircraft and land vehicle systems.

### Key Research Fields & Competence Areas:

- Aircraft and land vehicle electric power trains
- Power electronics for more-electric land and air systems.
- Electromechanical actuators and associated power electronics
- Magnetics modelling –motors, generators and actuators.
- Magnetics for high-frequency power conversion
- Current measurement for power electronics
- High-power, high-fidelity, switched-mode amplifiers and drivers
- Piezo-electric actuation and associated drives
- Energy scavenging – transducers and power processing
- High-voltage power electronics for industrial applications
- Power semiconductor device evaluation and exploitation.

### Institute Highlights:

- Well equipped laboratories including high-power test cells
- Strong collaboration with industry
- Majority of funding is from industry projects
- Broad range of government and institute funded projects
- Attracting high-quality PhD students
- Close cooperation with all engineering disciplines
- High level of advanced engineering companies in the vicinity
- Underpinned by BEng and MEng programmes with specialist modules given by the group academics

### Contact Information:

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