



UNSW
SYDNEY



Safety Critical Electric Drives for High-Value Industries

The research and development of a range of fault-tolerant electrical drives for use in applications that require the highest level of reliability.

Competitive advantage

- Expertise in the design and control of novel, power-dense multi-phase electric drives for use in safety-critical applications including rail transportation, electric vehicles, marine propulsion drives and aerospace
- Provision of best-in class power density for permanent-magnet machines through innovative five-phase generator technology that uses fractional-slot, concentrated-wound electric machines
- Patented control techniques for drives with faults
- World-leading drives with new, multi-phase designs that enhance torque production, smooth ripple-free torque, and provide tolerance to faults

Impact

- Many high-value and high-growth industries rely on electrical drives for processing materials, compressing gas and transportation. More efficient and reliable machine drives improve the yield and performance of both new and existing installations.

Successful applications

- Open winding multi-phase drive system for fault tolerance

Capabilities and facilities

- Electrical machine design experience
- Multi-phase machine design techniques
- Multi-phase drives and controls
- Low-speed, high-torque load machines and high-speed load machines

Our partners

More Information

Professor John Fletcher

School of Electrical Engineering and Telecommunications

T: +61 (0) 2 9385 6007

E: john.fletcher@unsw.edu.au

UNSW Knowledge Exchange

knowledge.exchange@unsw.edu.au

www.capabilities.unsw.edu.au

+61(2) 9385 5008