



**UNSW**  
SYDNEY



## Novel Axial Flux Machine Design

**The development and assessment of ground-breaking and innovative axial machines. Axial flux machines have a form factor that suits in-hub motors for electric vehicles. They have been used for many years as the motor of choice for the world record-breaking Sunswift team, and are a popular choice of electrical generators for small- and large-scale wind turbines.**

### Competitive advantage

- Innovations that include PCB-mounted windings; three-phase machines and multi-phase variants; and permanent-magnet machines with a unique flux-weakening capability
- Extensive experience in axial-flux machine design, analysis and control
- Expertise in finite-element analysis and its use in axial flux machine design
- Academic team that has expertise in design, operation and control sectors
- Specialist knowledge of electrical machine design

### Successful applications

- Small-scale wind turbine generator
- Novel electrical generator for a specialised application

### Capabilities and facilities

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

### Our partners

- Hummingbird Electronics

### More Information

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