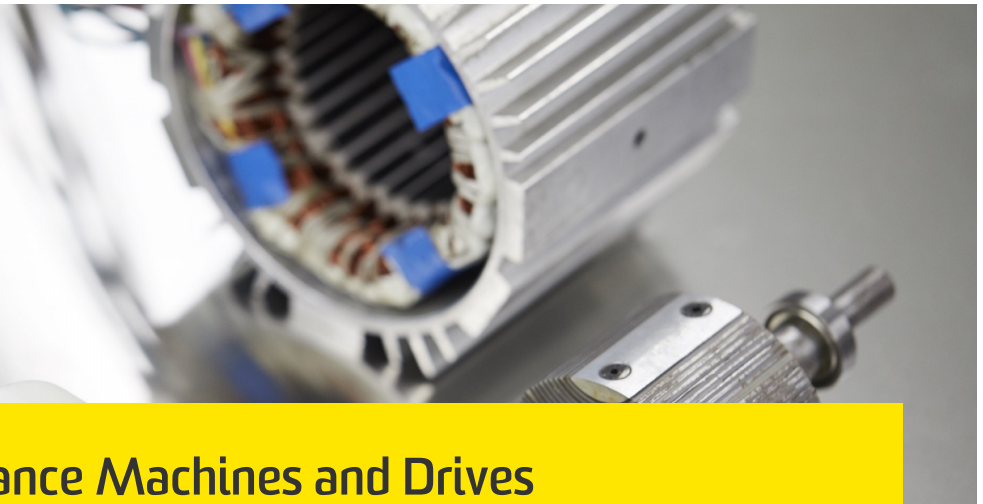




UNSW
SYDNEY



Synchronous Reluctance Machines and Drives

Development of a new type of synchronous reluctance machine that has a skewed, axially-laminated rotor, which solves the problem of torque ripple normally associated with traditional rotors.

Competitive advantage

- An innovative axially-laminated rotor that is skewed, which improves machine performance and creates near-zero torque ripple
- Novel multi-phase winding techniques improve output torque
- Advanced tools for the analysis, design and fabrication of novel rotors using 3D printing
- Ability to produce smaller, cheaper machines

Impact

- The rotor structure can be operated at very high speed, which makes it useful in many emerging applications
- Synchronous reluctance machines and drivers are cheaper and more efficient than conventional field-excited and permanent-magnet synchronous machines as they do not require permanent-magnets and do not rely on rotor currents

Successful applications

- Applications in electric vehicle powertrains and high-speed drive applications for Australian and Chinese industries

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

- Shandong BOFA Power Machinery
- Motorica

More Information

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