



**UNSW**  
SYDNEY



## Linear Electrical Machine Drive Systems

**Both a permanent-magnet mover and a line-start linear electrical machine drive system have been designed for linear machine drive systems. Together, they optimise periodic motion and also enhance the line-start capability of the permanent-magnet linear synchronous machine.**

### Competitive advantage

- Expertise at using damping windings for modelling and drive strategy
- Ability to deliver higher tolerance in the estimated position

### Impact

- Line start within all ranges of initial mover position
- Rapid acceleration to synchronous speeds without the need for accurate position sensor

### Successful applications

- Up to 6 per cent reduction in overshoot of the periodic motion
- Prototype electromagnetic launch system
- General linear machine drive systems

### Capabilities and facilities

- Hardware setup for testing linear machines, with two types of mover
- dSPACE 1104 real-time experimental platform
- Complete motion control system

### More Information

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