



**UNSW**  
SYDNEY



## Novel Analysis and Control of Microgrids

**Using expertise in analysis and control to develop and implement novel solutions to manage demand, detect faults and regulate frequency in microgrids.**

### Competitive advantage

Expertise in modelling, analysis, fault detection, fault classification and control of microgrids, including peak demand management, demand response and fault ride through operations

Novel approaches to:

- detection and classification of disturbances in islanded -microgrids
- fault location
- regulating frequency through demand response

Development of improved load-shedding techniques

### Impact

- Greater appliance level data analysis and control
- Facilitating the integration of electric vehicles
- Enabling power demand management
- Implementation of novel controllers under unbalanced voltage conditions

### Successful applications

- Reliable microgrids for remote communities with a communication-based control architecture
- Analysis and control of doubly-fed induction generators (DFIG) in microgrids
- Micro-generation test facility for the assessment of power quality and hybrid system control capabilities and facilities

### Capabilities and facilities

- Single-phase microgrid test facility
- Three-phase microgrid
- Software tools for analysis

### More Information

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