Modular and Scalable Power Electronics for Large-scale Energy Storage Systems

Unlocking the benefits of large-scale energy storage systems requires advances in power electronics topologies for interfacing and supporting the electricity grid. Multilevel converters can provide optimised, reliable, modular and cost-effective solutions for large-scale multi-megawatt energy storage systems across a range of energy storage technologies.

More Information

Dr Georgios Konstantinou

School of Electrical Engineering and Telecommunications

T: +61 (0) 2 9385 7405
E: g.konstantinou@unsw.edu.au

UNSW Knowledge Exchange

knowledge.exchange@unsw.edu.au

www.capabilities.unsw.edu.au

+61 (2) 9385 5008

Competitive advantage

- Next-generation, modular and scalable power electronics for multi-megawatt energy storage systems
- Highly efficient and reliable redundant solutions
- Extensive range of multilevel power electronics converter prototypes
- State-of-the-art measurement and grid emulation facilities
- Hardware and software validation and testing

Impact

- Next-generation power electronics topologies for large-scale energy storage
- Advanced grid support functions
- Redundant and fault-tolerant implementations
- Technology and cost optimisation, irrespective of energy storage solution

Capabilities and facilities

- Multilevel converters (scaled-down laboratory prototypes)
- Measurement and grid simulation facilities
- State-of-the-art real-time simulators for grid integration validation, hardware and controller testing, and power hardware-in-the-loop capabilities