



High-Current High-Conversion-Ratio DC-DC Converter for Super-Capacitor Charging Applications

The design of an optimised bi-directional DC-DC converter that is capable of charging and discharging super-capacitor banks.

Competitive advantage

- Class-leading and unique, with:
- Both digital and analogue control
- High-efficiency and high-reliability
- Cost-effective design

Impact

- Improves the efficiency of energy management systems
- Makes energy recovery economically viable in CDI water treatment systems.

Successful applications

- Customized high-current DC-DC converter for capacitive de-ionisation technology to treat underground brackish water.

Capabilities and facilities

- High-bandwidth, high-current probes
- High-bandwidth, high-resolution oscilloscope
- Real-time hardware-in-the-loop simulation platform
- Power device analyser

Our partners

- Instrument Works
- Goldwind Environmental

More Information

Professor John Fletcher

Energy Systems Research Group,
School of Electrical Engineering and
Telecommunications

T: +61 (0) 2 9385 6007

E: john.fletcher@unsw.edu.au

UNSW Knowledge Exchange

knowledge.exchange@unsw.edu.au

www.capabilities.unsw.edu.au

+61(2) 9385 5008