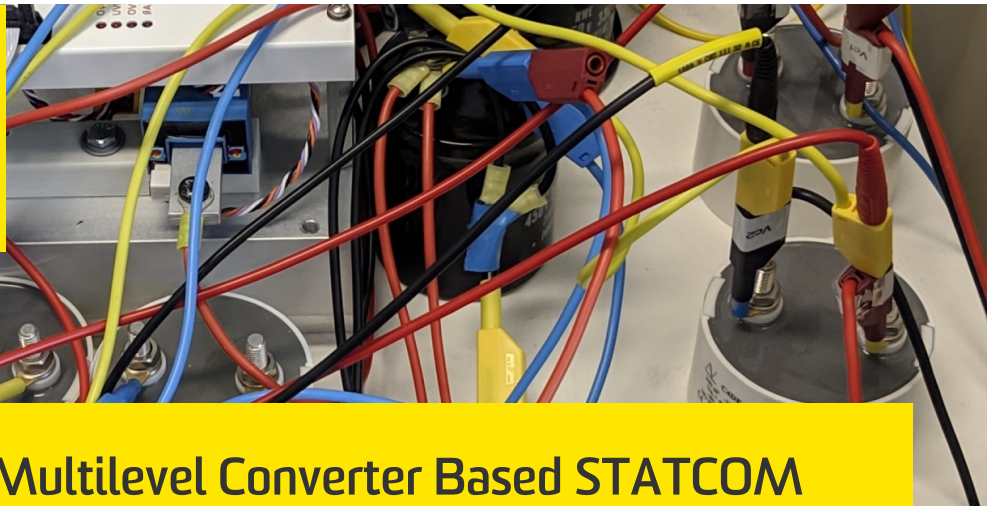




UNSW
SYDNEY



Cascaded H-bridge Multilevel Converter Based STATCOM

A cascaded H-bridge multilevel converter based low-capacitance STATCOM that is able to operate with extremely low DC capacitance values. It can achieve 80% reduction in the capacitor's size, improve current quality, and reduce the maximum voltage stress on the semiconductors compared to a conventional STATCOM.

Competitive advantage

- Significantly reduces the cost of large DC capacitors
- Avoids reliability issues related to electrolytic capacitor failure
- Reduces the cost of switching cell protection by reducing the DC-link fault level
- Reduces the weight and volume of the converter, which can make it easier to containerise high power STATCOMs

Successful outcomes

- Experimental prototype of a single phase cascaded H-bridge multilevel converter based low-capacitance STATCOM

Capabilities and facilities

- Power electronics laboratory
- Hardware testing capability up to 50kVA, 1kV, 400A
- Arbin battery and supercapacitor tester with environmental chamber

More Information

Dr Branislav Hredzak, Professor John Fletcher

School of Electrical Engineering and Telecommunications

T: +61 (0) 2 9385 4895

E: b.hredzak@unsw.edu.au

UNSW Knowledge Exchange

knowledge.exchange@unsw.edu.au

www.capabilities.unsw.edu.au

+61(2) 9385 5008