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Reconfigurable Energy Storage Systems

Reconfigurable Energy Storage (ES) systems incorporate a module switching circuit which allows the topology of the ES modules connected to the output converter to be controlled. The voltage and current capacity of the reconfigurable ES system can be adjusted, which increases flexibility and operating range.

Competitive advantage

- Innovative reconfigurable energy storage systems have been developed that can:
- Be adapted online to fulfil different operating modes
- Feed a load from the battery system
- Feed the load from a backup power source, regenerative mode, intra-module balancing mode and charging mode

Impact

- Unlike conventional systems, the ES shares components among the different operating modes, which makes it more compact
- Existing redundant modes increase reliability

Successful applications

- DC linked battery and battery/ultracapacitor reconfigurable energy system prototype.

Capabilities and facilities

- Energy storage system prototypes
- Hardware-in-loop simulation for rapid assessment of control techniques
- Hardware testing capability up to 50kVA, 1kV, 400A
- Arbin battery and supercapacitor tester with environmental chamber

More Information

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