



**UNSW**  
SYDNEY



## Micro-Supercapacitors for IoT

**Micro-supercapacitors offer energy densities comparable to micro-lithium-ion batteries, but with one hundred times more power density and an ability to be recharged in 3 seconds. These devices have a range of potential applications, including electric vehicles and wearable electronics.**

### Competitive advantage

- Bulk intercalative charge storage allows high energy density and low self-discharge
- Dual-carrier transfer renders high power capability
- Based on neutral aqueous electrolyte with high environmental compatibility

### Impact

- Improved lifetime, stability and power density for electric vehicle applications
- Facilitating maintenance-free biosensors, mobile environmental sensors, wearable electronics and nanorobotics

### Successful applications

- Lab-demo coin-type cell developed

### Capabilities and facilities

- High-end electrochemical materials and device evaluation system
- In-situ electrochemical cell diagnosis (structural, chemical, and thermal)
- Advanced materials fabrication platform
- Versatile printing technologies for cell development (roll-to-roll, spraying, bar coating, doctor blade, etc.)

### More Information

Associate Professor Da-Wei Wang

School of Chemical Engineering

T: +61 (0) 2 9385 7355

E: [da-wei.wang@unsw.edu.au](mailto:da-wei.wang@unsw.edu.au)

UNSW Knowledge Exchange

[knowledge.exchange@unsw.edu.au](mailto:knowledge.exchange@unsw.edu.au)

[www.capabilities.unsw.edu.au](http://www.capabilities.unsw.edu.au)

+61 (2) 9385 5008