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.

More Information

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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.)