



Electrochemical Capacitors for Pulsed Power Applications

Need: Power demands require rapid discharges.

Problem: These power demands shorten battery and fuel cell life.

Solution: Electrochemical Capacitors (ECs) can dramatically lengthen battery/fuel cell life, reduce size of battery/fuel cell.

Problems of the current state of the art technology:

Current EC technology uses activated carbon (AC) as the electrode material.

- AC has high surface area but small average pore size which inhibits electrolyte ingress/egress.
- AC has higher resistivity which generates parasitic heating in high power applications.

Eltron's technology:

Eltron's materials meet or exceed the performance of major EC manufacturers. The technology will reduce device size due to superior power densities and relative powers. These materials also display reduced discharge response times compared to state-of-the-art materials – advantageous for pulsed power applications. Eltron's nanostructures are highly conductive and offer an ordered mesopore network. These attributes will provide more complete electrolyte wetting and faster release of stored charge compared to activated carbon.

Applications:

- Electric Vehicles: launch assist, regenerative braking
- Microcomputer Memories: maintenance-free power sources
- Actuator and Solenoid Valves: backup power
- Consumer Electronic Devices: power supplements

Stage of Development:

Eltron is fabricating "AA" prototype cells to be tested in the lab.

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Benefits

- Better electrical conductivity than activated carbon
- Larger average pore size, allowing more complete electrolyte wetting
- Lowered equivalent series resistance (ESR)
- Increased specific power
- Shorter charge times
- Decreased parasitic heating

Contact Us

To discuss the possibility of entering into a business relationship with Eltron, contact the Business Development Group at business@eltronresearch.com.



Eltron Research & Development Inc.

Eltron Research & Development commercializes novel technologies involving energy, chemicals, advanced materials and environmental systems.