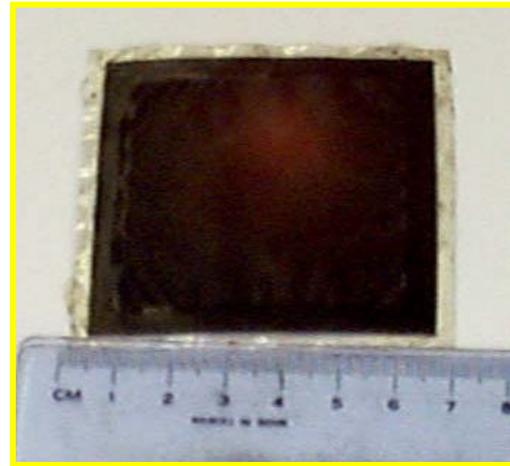
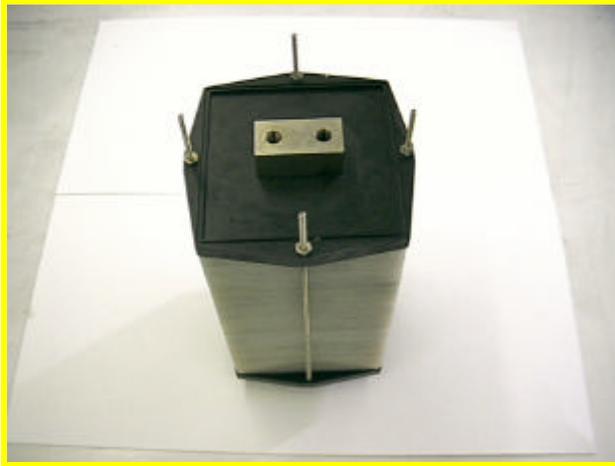




High Energy Density Super Capacitor Developments



Objective

Chemical Double Layer Nickel: This effort will develop Ni-C electrode Chemical Double Layer Super Capacitors into 30-volt, 10 farad modules capable of delivering high power current pulses for space flight applications;

Ruthenium Oxide Electrode, Pseudo-Capacitance: This effort will develop Ruthenium Oxide Electrode Super Capacitors, targeting development of 30 volt devices, of 1 farad, with 30 – 50 J/g energy density, and power densities greater than 10 W/g; and

Asymmetric, Vanadium, Nitride Electrodes: This effort will develop Asymmetric Vanadium Nitride Electrode Super Capacitors for pulsed communication applications. Target device is 30 volts, 1 farad with an internal resistance less than 0.25 ohms.

Why Needed

High Energy Density Super Capacitors, when used in conjunction with a traditional power source, also offer significant discharge rate performance while maintaining bus voltage stability. They also offer significant power source weight savings over a traditional source only sized for the same task. Early test data also shows battery life can be extended by use of super capacitors.

Point of Contact

Steve Luna / ED11
Phone: 256-544-3402
Email: steve.luna@msfc.nasa.gov

Sponsor

Bantam Technologies Development Program