

NASA SBIR/STTR Technologies

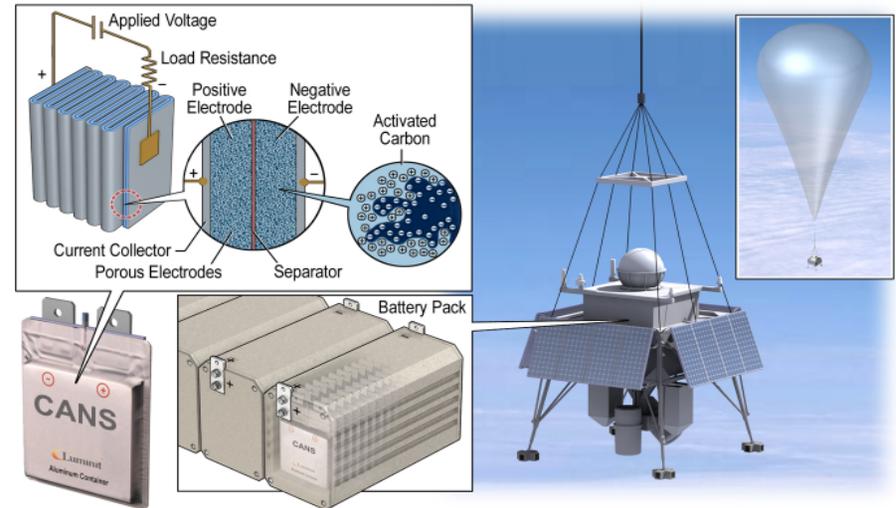
S3.07-9733 - Carbon Nanotube-based Supercapacitor



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Identification and Significance of Innovation

To address the NASA need for a power storage device or system that can store and provide solar generated power for 100 days balloon missions at mid-latitudes in which 12 hours of darkness per day is anticipated, Luminit, LLC proposes to develop a compact, low mass Carbon Nanotube-based supercapacitors (CANS) based on CNT-sol-gel technology, which can be easily adapted to various applications including balloon programs. This system will provide electrical power for experiments and NASA support systems CANS offers a low cost, reliable power storage device that is durable, low in mass and volume, 28 VDC and provides 100 watts to 1,000 watts of power. CANS can also be used for various military and commercial applications.



Estimated TRL at beginning and end of contract: (Begin: 2 End: 3)

Technical Objectives and Work Plan

Technical Objectives

1. Development of a preliminary CANS design
2. Development of CNT-sol-gel based electrode materials
3. Testing and demonstration of CANS feasibility
4. Exploration of the commercial potential of CANS and CNT-sol-gel materials.

Work Plan

1. Design a CANS system
2. Develop CNT-sol-gel composite materials
3. Develop CNT-sol-gel based electrode
4. Fabricate and test CANS
5. Explore the commercial potential and product viability
6. Prepare and submit reports

NASA Applications

CANS can be used successfully for NASA Balloon Programs and other applications where power storage is needed.

Non-NASA Applications

- Computer systems include notebook PCs
- eBook readers, and cell phones
- Uninterruptible power supply (UPS) systems
- Power conditioners
- Power tools
- Power storage

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NON-PROPRIETARY DATA