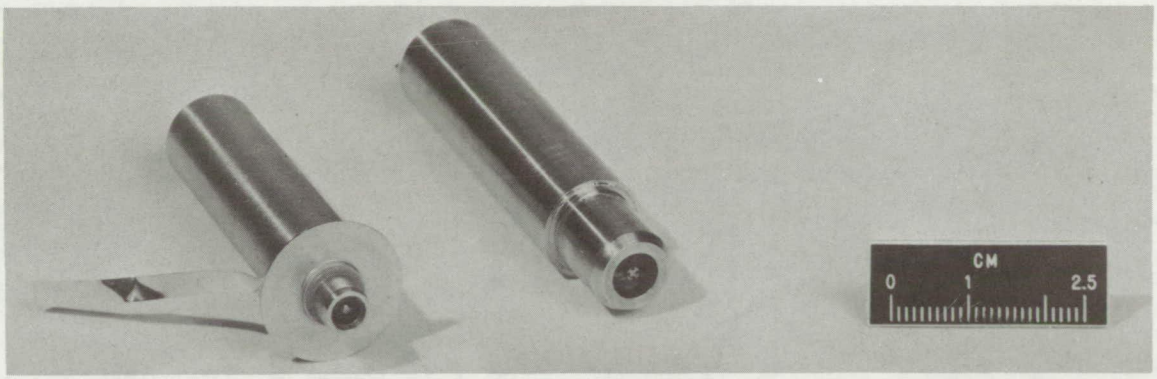
NASA TECH BRIEF

High-Energy, High-Power, Long-Life Battery



Based on the results of NASA-developed technology, a high-energy-density primary battery has been constructed. Energy densities of up to 130 watt hrs./lb. have been achieved. This is approximately twice the watt hrs./lb. customarily obtained with the AgZn battery.

The electrochemical couple consists of a lithium anode, a copper–fluoride cathode, and uses methyl formate/lithium hexafluoroarsenate for the electrolyte. Open circuit voltages of 3.4 to 3.5 volts and current densities of up to 40 ma/cm^2 have been achieved. The present battery uses a separate external activator. Once activated, battery life is approximately 30 hours.

Additional work is being carried on to further improve the shelf life of this battery. In addition, the effects of scaling are also being evaluated.

Patent status:

Title to this invention has been waived under the provisions of the National Aeronautics and Space Act [42 U.S.C. 2457 (f)], to the Honeywell/Livingston Electronics Laboratory, Route 309, Montgomeryville, Pennsylvania 18936.

Source: Sandors G. Abens
of Honeywell/Livingston Electronics Laboratory
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Category 01