ZAF Energy Systems Patents Monobloc Design for High Voltage Batteries

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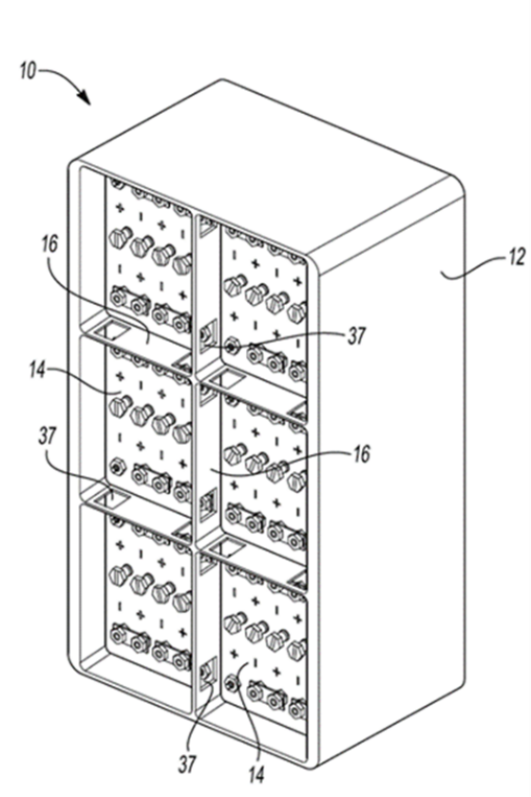

ZAF System's Technology

JOPLIN, MISSOURI, US, October 5, 2020 /EINPresswire.com/ -- ZAF Energy Systems Inc. (ZAF), a developer of next-generation zinc battery technologies, has been granted US Patent #10,777,781 titled "Monoblocs and Monobloc Batteries".

This technology has allowed ZAF to develop a novel Nickel-Zinc (Ni-Zn) 8D battery for 24-48V applications. These high voltage batteries will provide a safe, cost effective, and environmentally benign alternative to lithium-ion and other high voltage battery chemistries. ZAF's patented Monobloc design allows for the lowest cost, highest quality and most energy-dense design for automated manufacturing of high volume battery formats.

The ZAF NiZn Monobloc batteries will serve applications that have high voltage requirements. These markets range from data center, telecom, motive industrial, energy storage, and transportation. These are billion-dollar markets that continue to grow year over year as the appetite for batteries and energy storage expands. The economic and technical advantages of NiZn along with the recyclability help shape the value proposition. The safety aspect of the NiZn chemistry along with the Monobloc design will allow for ease of transportation and deployment where safety and fire hazards exist. The design makes for easy installation into cabinet and rack solutions that will make for seamless deployments. An additional feature of the ZAF NiZn monobloc design is that the cell terminals of each cell in the monobloc is designed to be accessible in the 8D assembly, thus allowing for individual cell monitoring at the system level. This greatly enhances the ability to maintain and optimize the performance of the battery while in use.

The Ni-Zn chemistry is an alkaline battery with long life, high power, and low levelized cost of energy. Currently, ZAF's Ni-Zn cells and batteries are capable of delivering from 60 to 110 Wh/kg and 90 to 250 Wh/L, depending on the specific design. ZAF's batteries can also be cycled more than 700 times at 80 percent depth-of-discharge, with additional advantages including, fast

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>
> *Randy Moore, President and CEO of ZAF Energy Systems*

recharge capability, high tolerance to extreme temperatures, sealed maintenance-free design, and easily recyclable chemistry. Ni-Zn is a lightweight and low-cost alternative to lead-acid, nickel-metal hydride, nickel-cadmium, and lithium-ion technologies.

"Everything we're hearing says motive batteries are shifting to higher voltages," said Randy Moore, President and CEO of ZAF Energy Systems. "For a while it was 24-volt systems. Then the OEMs were talking 36-volt and lately everyone seems to be keen on skipping 24 and 36 and to go straight to a 48-volt bus for motive applications. Nickel-zinc is the ideal replacement for lead-acid in these applications and this monobloc architecture is the ideal form factor."

About ZAF Energy Systems, Inc.
Incorporated in 2011 with locations in Bozeman, Montana and Joplin, Missouri, ZAF Energy Systems develops and commercializes next-generation zinc battery technologies that use sustainable, non toxic materials that can be safely and easily recycled. Its breakthrough battery technologies include Ni-Zn, Zinc-Air, and rechargeable hybrid aqueous battery chemistries. ZAF's primary and rechargeable batteries provide long-life and economical solutions in a safe package for a variety of applications. For more information, visit: www.zafsys.com

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