

ZAF Energy Systems' Receives a US Patent #10,511,059 'Alkaline Pouch Cell with Coated Terminals'

ZAF will integrate this novel alkaline pouch cell design with its Nickel-Zinc (Ni-Zn) chemistry to produce a high specific energy, customizable battery.

JOPLIN, MISSOURI, US, March 31, 2020 /EINPresswire.com/ -- [ZAF Energy Systems](https://www.zafenergy.com) Inc. (ZAF), a developer of next-generation zinc battery technologies, has received a US patent titled "Alkaline Pouch Cell with Coated Terminals." ZAF will integrate this novel alkaline pouch cell design with its Nickel-Zinc (Ni-Zn) chemistry to produce a high specific energy, customizable battery that can be used in applications previously not thought possible with traditional Ni-Zn designs.

According to Dr. Adam Weisenstein, Chief Technology Officer at ZAF Energy Systems and inventor of US Patent #10,511,059, "We are now able to combine ZAF's incredible advancements in the Ni-Zn chemistry with a robust, lightweight, and highly customizable pouch cell design. ZAF now has the opportunity to offer an aqueous technology capable of >100 Wh/kg, which can provide a solution in markets where a rechargeable, inexpensive, high energy density, and safe technology has been sought after for years."

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Randy Moore, ZAF's President & CEO



Ni-Zn batteries have excellent intrinsic properties, including high power, long cycle life, low life-cycle cost, and low environmental impact. The breakthroughs achieved by ZAF combine this patented Ni-Zn pouch cell with a proprietary electrolyte and zinc electrode formulation that greatly reduces zinc electrode migration. These improvements permit long cycle life along with high specific energy and power in a system with maintenance-free operation. ZAF has demonstrated the exceptional performance of the Ni-Zn chemistry in its G31 battery, which has a specific energy of 69 76 Wh/kg and has performed more than 700 cycles at 100 percent depth of

discharge (DOD) and many thousands of cycles at lower DOD. ZAF has demonstrated 110 Wh/kg

in pouch cells and projects to increase the specific energy to 120 Wh/kg, which allows ZAF to compete with lithium-ion technologies without the safety concerns and complicated battery management systems that add significantly to the total weight of the system.

“We recently formed a subsidiary Æsir Technologies to service our aerospace and defense customers,” said Randy Moore, ZAF’s President & CEO. “Nickel-zinc pouch cells are going to allow us to compete in these markets where lithium-ion energy density is required, such as directed energy weapons, and there are serious concerns about safety.”

About ZAF Energy Systems, Inc.

Incorporated in 2011 and 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 and can be safely and easily recycled. Its breakthrough battery technologies include nickel-zinc, zinc-air, and rechargeable hybrid aqueous battery chemistries. ZAF’s rechargeable batteries provide long-life and economical solutions in a safe package for a variety of applications. For more information, visit: www.zafsys.com

Kirk Plautz
ZAF Energy
+1 813-267-5669

[email us here](#)

Visit us on social media:

[LinkedIn](#)

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