

# Hindustan Zinc advances research in zinc battery technology

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**The company has partnered with IIT Madras and JNCASR Bengaluru to focus on improving zinc anode formulations and designing Zinc-Air battery modules**

India-based Hindustan Zinc Ltd. reported significant strides in its research on zinc-based battery technologies. The company emphasized several advantages of these batteries, such as improved safety due to non-flammable components, a long cycle life, wide temperature operability and recyclability.



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Highlighting the potential of zinc as a cost-effective and stable alternative to lithium, Hindustan Zinc has partnered with the Indian Institute of Technology (IIT) Madras and the Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR) Bengaluru to develop these energy storage solutions.

The company's collaboration with JNCASR, initiated in August 2024, focuses on developing zinc-ion batteries, with significant advancements in zinc anode formulations and electrode electrolyte interface engineering.

Simultaneously, a partnership with IIT Madras, established in October 2024, aims at designing a 1-kWh rechargeable Zinc-Air battery module, with potential applications in electric vehicles, grid-scale energy storage and consumer electronics.

The company also said that zinc-based batteries can provide backup power from 3 to 72 hours and have a greenhouse gas footprint substantially lower than conventional technologies. Additionally, the company has engaged with US-based AESir Technologies to advance nickel-zinc battery technology.

According to Bloomberg NEF, the global energy storage market is anticipated to grow at a 21% compound annual growth rate, reaching 442 GWh by 2030. Hindustan Zinc, as part of India's Vedanta Group, is a major integrated zinc producer, supplying to over 40 countries and holding a significant market share in India's primary zinc market. The company has been recognized for its sustainability practices and recently introduced EcoZen, a low-carbon zinc brand produced using renewable energy, which claims a substantially lower carbon footprint than the global average.

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