

Sodium-Ion Battery @ CSIR-CECRI



CSIR - CECRI



Powering The Future with Sodium-Ion Batteries

Affordable - Abundant - Reliable

Introduction

- ✓ Next-Generation Energy Solution
- ✓ Eco-Friendly
- ✓ A smarter Alternative to Lithium-Ion

Present & Future

- ✓ The energy density is 130 Wh/Kg
- ✓ The projected energy density is 200 Wh/Kg by the year 2028
- ✓ On par with Global competitor's Na-Ion Cell Specification

Features

Indigenous Resource Advantage Utilizes abundant, India-centric resources like Na, Mn, and C, reducing reliance on imported lithium. Make-in-India Technology Promotes self-reliance via indigenous research on electrodes, electrolytes, and cell design for Indian conditions.	IP-Protected Exclusive Innovation CECRI holds 5 patents on Na-Ion batteries covering 120+ cathode compositions (90–160 mAh/g), developed in-house for a strong competitive edge. Commercial Security IP protection safeguards technology from replication, enabling secure licensing and commercialization pathways.	Cost Effective Lower Cost CECRI's technology enables lower manufacturing costs and enhanced production capabilities. Cost Advantage with Al Use of aluminum for both electrodes cuts copper import reliance and lowers material costs.
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Applications ✓ Home & Commercial Backup System ✓ Renewable Energy Integreation ✓ Stationary Applications ✓ Electric Mobility & Grid Storage	Facilities ✓ Innovation Centre to translate from R&D to pilot level starting from raw materials to SIB production ✓ Automated Facility to manufacture Prismatic, Pouch & Cylindrical (18650/21700/32140) Cells
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