



High Energy Density Anode-Free Sodium Batteries

June 2025



Sodium Batteries—Overview

Benefits

Supply Chain



Safety

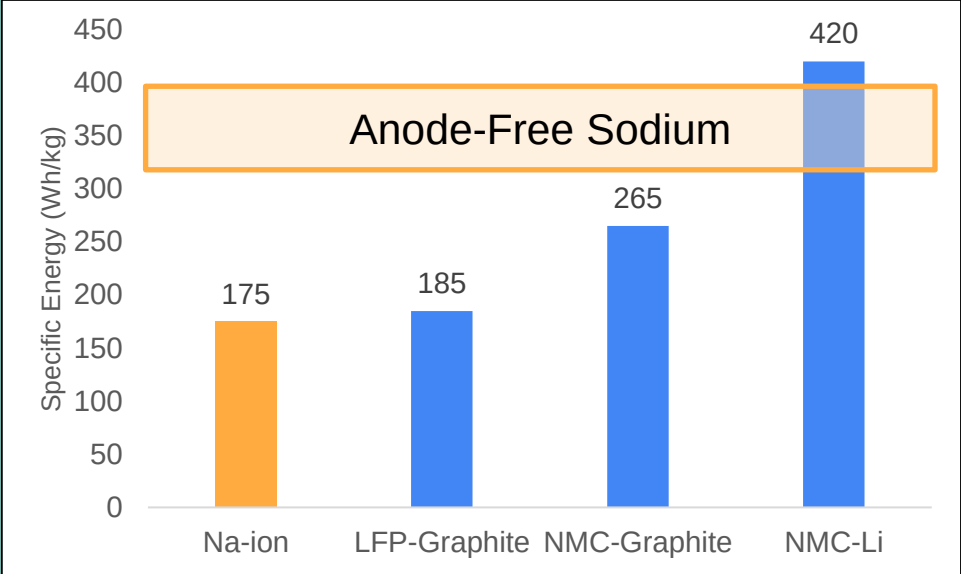


Low Temperature Performance



Downside

Energy Density

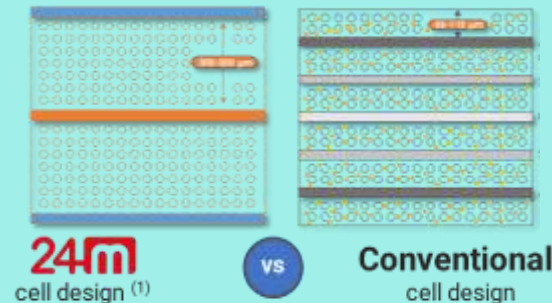


Solution: Anode-Free Sodium Batteries

Anode-Free Design

- Maximizes energy density and reduces cost by eliminating anode active material
- Removes hard-to-process materials like Li metal
- Maximize energy density while retaining benefits of sodium chemistry

Ultra-Thick Cathode



Low-Cost Solid Electrolyte Processing



High-Throughput Liquid Electrolyte Development



Market

Initial Market: Drones (2027)

Pain Points:

- Supply chain/Export restrictions
- Specific energy (Wh/kg)
- Low temperature performance

Battery market size:
Estimates range from
\$1.0B to \$4.9B
(2025)



Future Market: Vehicles (2029-)

Pain Points:

- Supply chain/Export restrictions
- Specific energy (Wh/kg)
- Low temperature performance

Battery market size:
\$150B worldwide,
\$15B in the US (2030)



World-Renowned Leadership and Industry Partners

Highly Experienced Leadership Team



Naoki Ota
President &
CEO, 24M



Dr. Yet-Ming Chiang
Professor, MIT
Chief Scientist &
Co-Founder, 24M



American
Superconductor



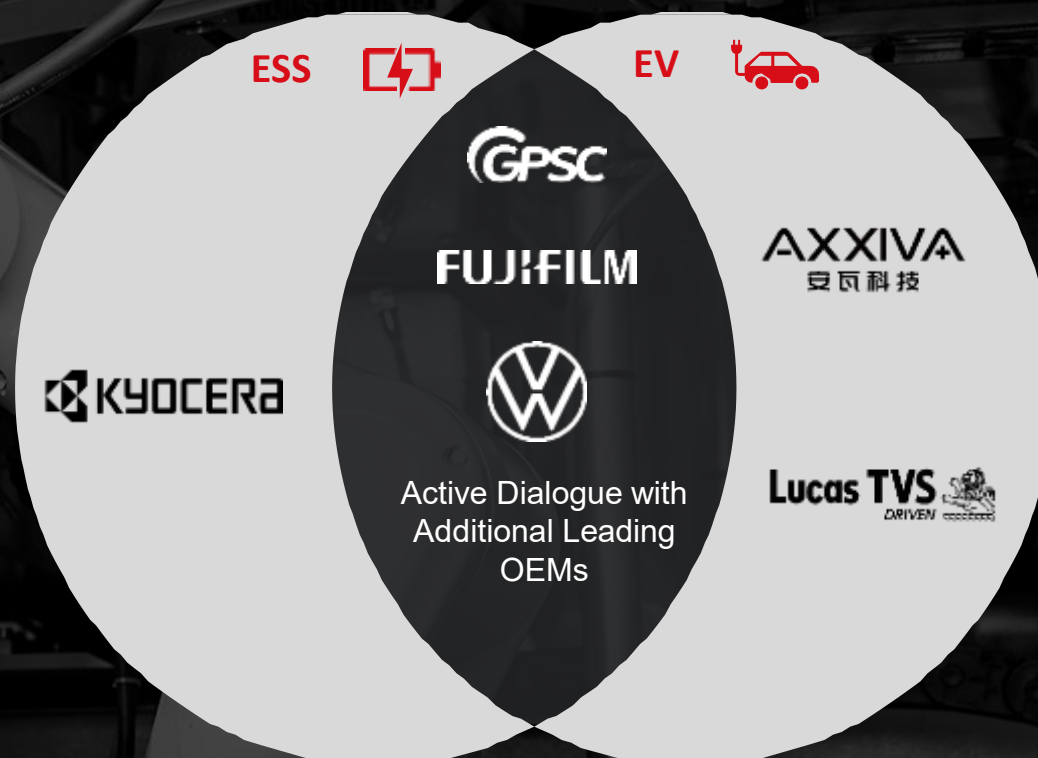
Dr. Venkat
Viswanathan
Professor, University
of Michigan



Dr. Junzheng Chen
VP, Advanced R&D



Key Partners & Investors

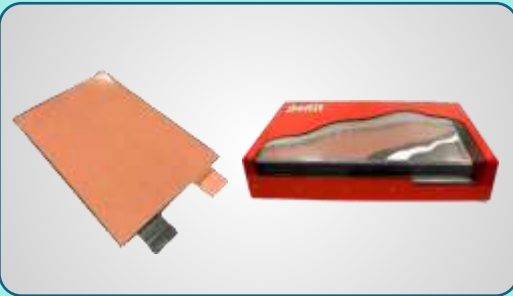


24M | Cutting-Edge Portfolio and Technology Platform

24M ETOP

Directly integrates electrodes into the pack

- Designed for all electrode types
- Achieves electrode pack efficiency over 75%
- Lower costs with streamlined process and fewer materials



Impervio

Transformative separator revolutionizing safety

- Prevents formation of dendrites, reduces fire risk
- Enables early fault detection and fail-safe mechanism
- Integrates with all formats of lithium-ion cells



Eternalyte

Unparalleled C-rate and low temperature performance

- Proprietary formulation significantly improves rate capability for Li-ion and Li-metal cells
- Provides path to long lived, high C-rate lithium metal cells using today's technologies



LiForever

Low-cost, chemistry agnostic with direct recycling

- Only technology capable of efficiently recycling 98% of battery materials
- Reduces inactive material costs



Future Needs

Commercialization/scale up plans

- Produce pre-A sample cells for demo in 2025-2026
- Identify commercialization partners in the UAV space

Pilot production (up to 1 MWh/year)

- Investment needed: \$3-6 M



Thank You!

