Liquefied Gas Electrolytes

for Next-Generation Lithium Batteries

Hamid Sayadi
February, 2023

South 8 – Advancing a Clean Energy Future

SOUTH 8 TECHNOLOGIES

Founded in 2016

Spin out from UC San Diego where the Liquefied Gas Electrolyte (*LiGas*) chemistry was first developed

Team

- 23 Full-Time Employees
- Prominent Series-A Investors Including LG Ventures, Shell Ventures, Anzu Partners, Foothill Ventures, Taiyo Nippon Sanso

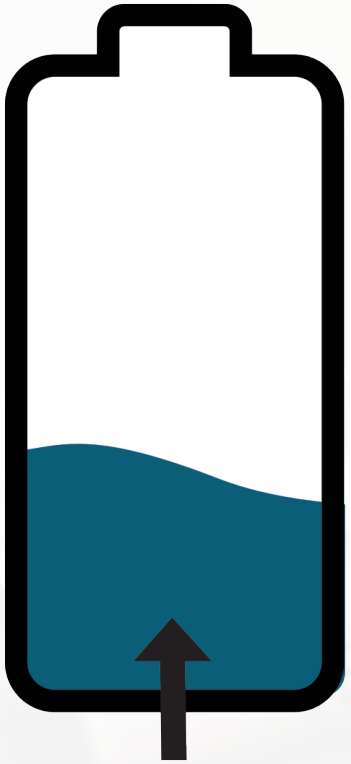
IP Portfolio

- 7 Separate Patent Families Issued in U.S.
- Several International Patents Issued
- Continual IP Generation

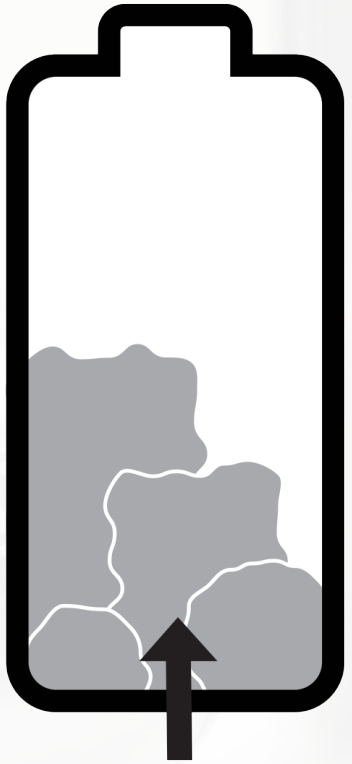
Traction

- Technology Validated by 3rd Party Validated by Leading Tier 1 Cell and Automotive Manufacturers and Dept. of Defense
- Several Purchase Orders Across Industry Segments
- Ongoing Joint Development Projects

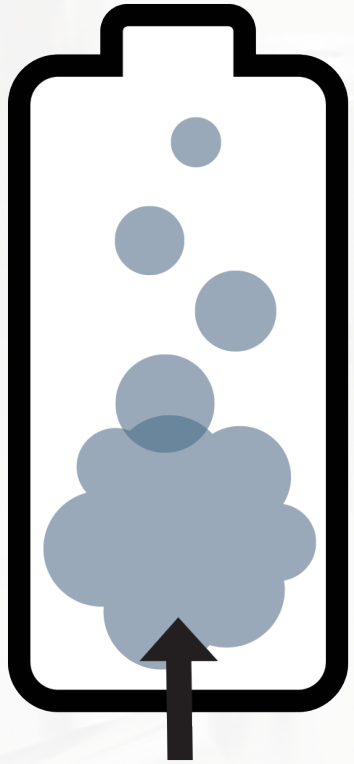
Next Generation Electrolyte



Conventional
Liquid Electrolyte

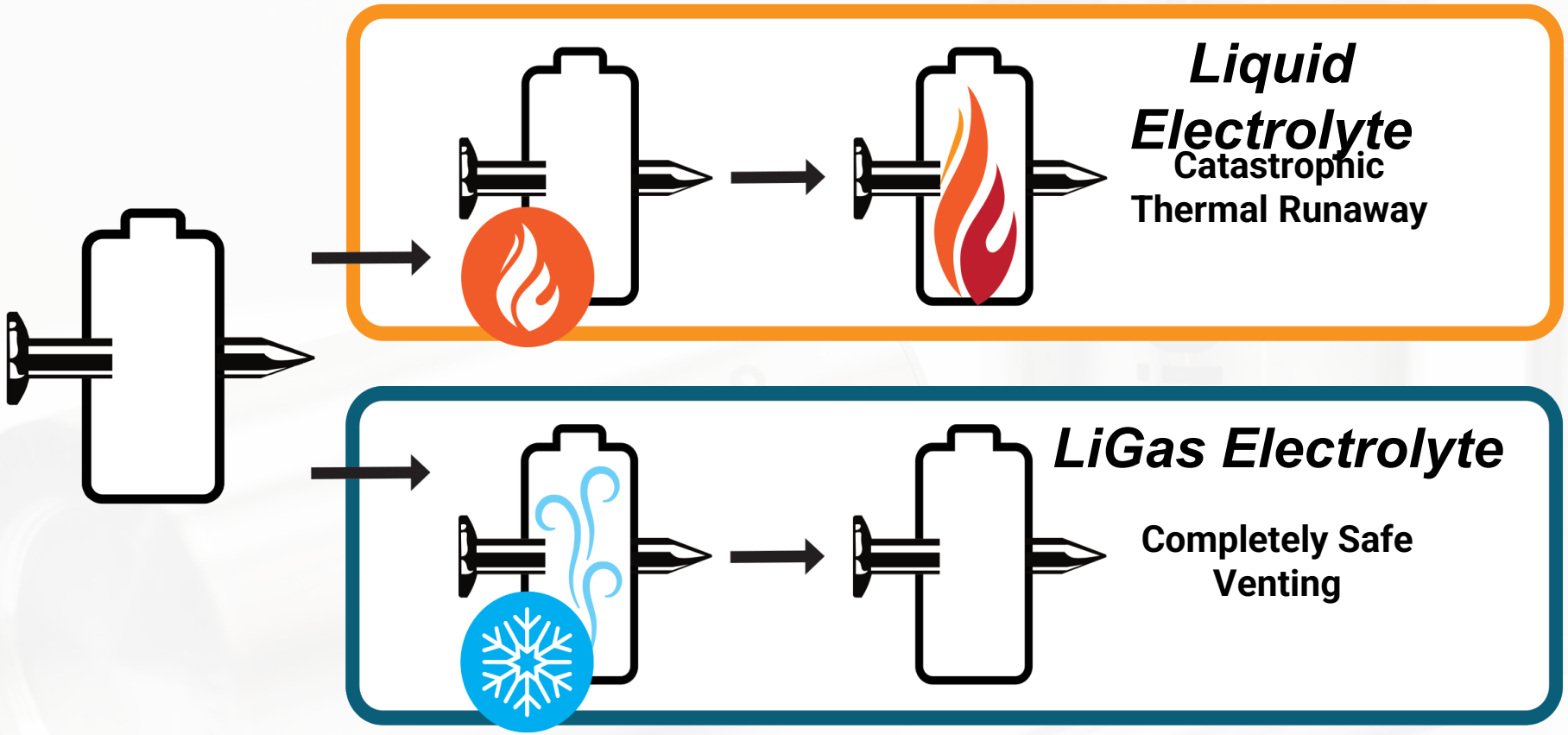


Solid State
Electrolyte



Liquefied Gas
Electrolyte (LiGas®)

LiGas Cells Have Superior Safety



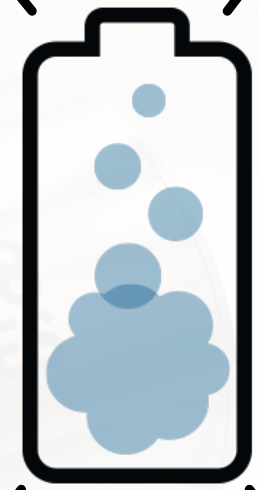
LiGas Electrolytes

SOUTH 8 TECHNOLOGIES

Improved Safety
Elimination of thermal runaway using non-toxic *LiGas* electrolytes

Cost-Effective
Faster manufacturing, high voltage, thick electrodes, safer cells.

Fast Charge
High electrolyte conductivity & ideal SEI enables <15 min fast-charge



All-Weather Resilience
-60 to +60 °C Operation

Material Compatibility
Full compatible with all common cell electrodes, separators, cans

Increased Energy
Thicker electrodes, more efficient battery system integration

Improved Recyclability
Safer handling of dry-cells, no longer need hazardous shipping

Faster Manufacturing
Electrolyte injection & wetting times reduced from hours to minutes.

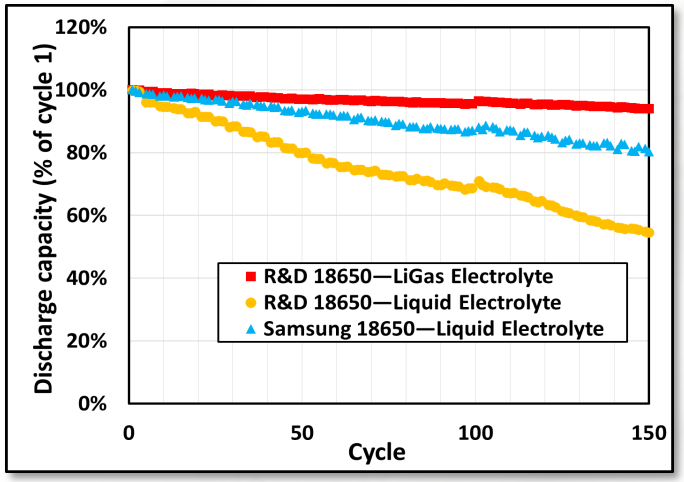
ARPA-E Award

SOUTH 8 TECHNOLOGIES

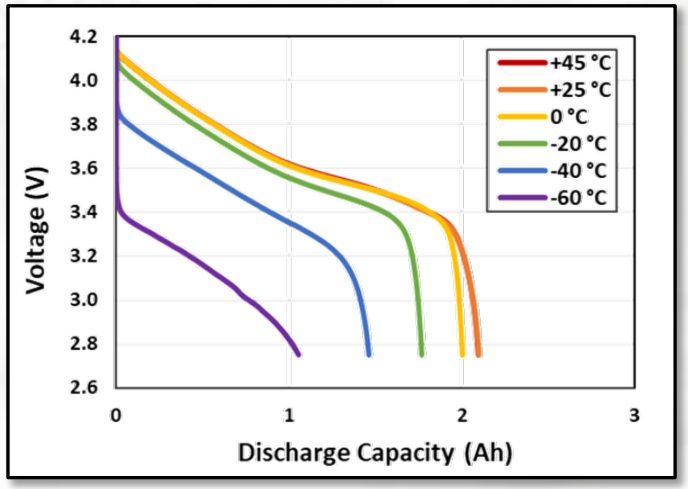
arpa·e
CHANGING WHAT'S POSSIBLE

--ARPA-E EVs4ALL Award---
LiGas Cell Development for Automotive Applications

Fast Charge

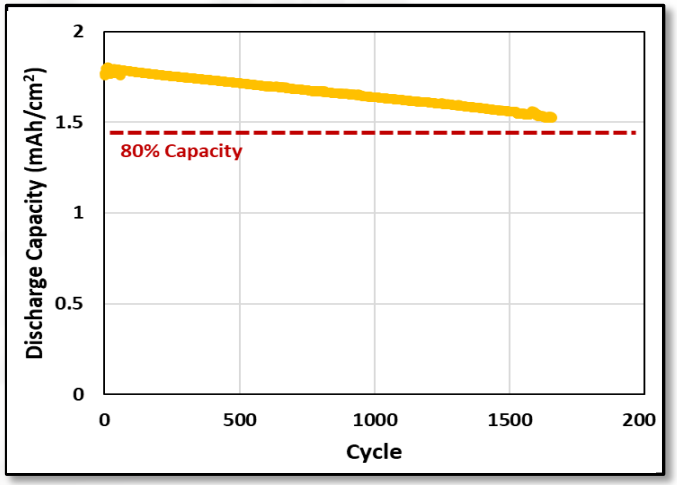


Low Temperature



Low Cost

Cobalt-free LNMO Cathode



LiGas (R)Evolution

SOUTH 8 TECHNOLOGIES

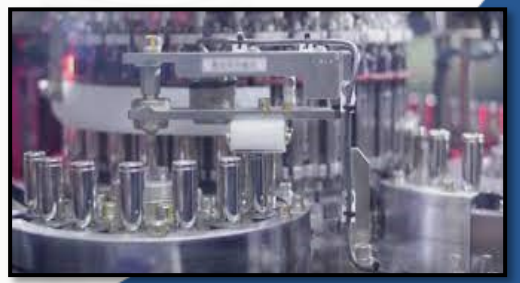
Technology Demonstration

Manufacturing Development

Pilot Production

Production Ramp Up & Field Validation

Electrolyte Sales



Delivering breakthrough battery technologies to advance a clean energy future.

2021 **2022** **2023** **2024** **2025**

Liquefied Gas Electrolytes

for Next-Generation Lithium Batteries

Thank you!!

info@south8technologies.com
www.south8technologies.com