



# *Liquefied Gas Electrolytes*

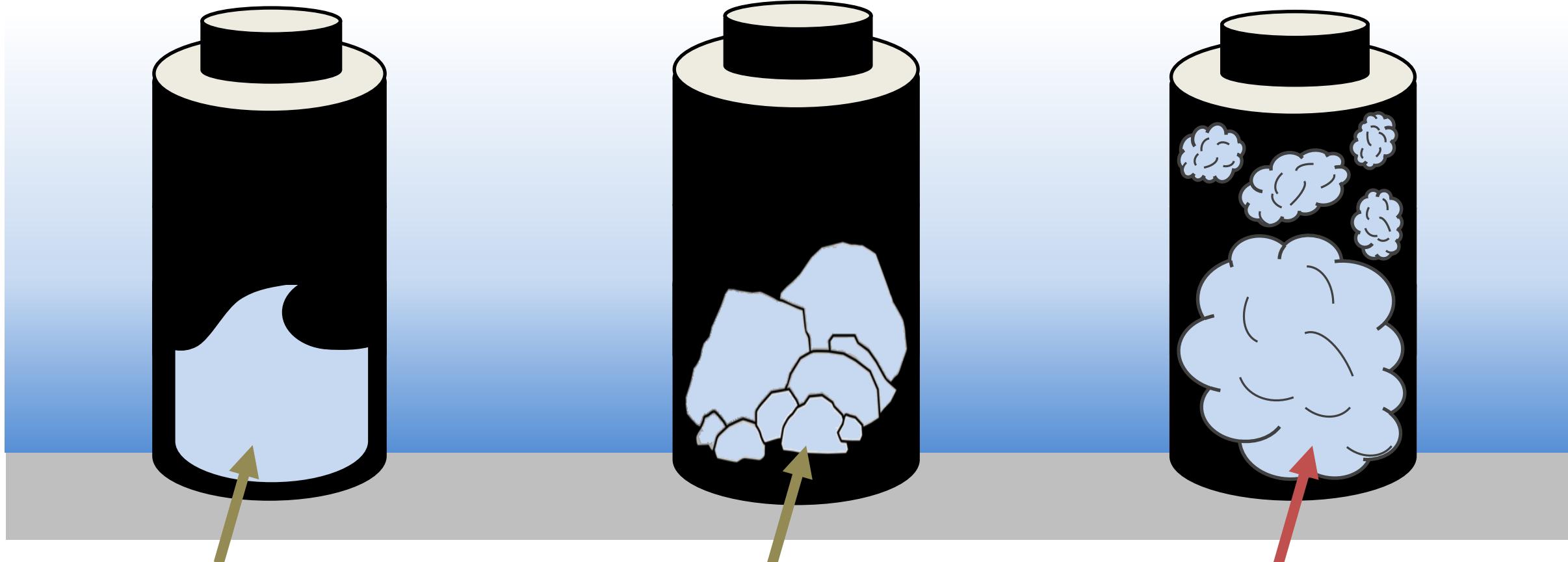
for Lithium Batteries

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CCO

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*Conventional Liquid  
Battery Electrolyte*

*Solid State  
Electrolyte*

*Liquefied Gas  
Electrolyte (LiGas™)*



All South 8's *LiGas* component materials are available commercially off-the-shelf and used widely in several industries today.

- Non-toxic
- Low-Flammability
- Low cost and/or easily scalable
- All gasses manufactured domestically
- Compatible with conventional separator, cathodes, binders, etc.

## ---Performance Enhancements---



### **Increased Energy**

Higher voltage and capacity cells allow for >300 Wh/kg Li-ion and >400 Wh/kg Li-Metal (future)



### **Improved Safety**

Rapid electrolyte venting enables safer cells under physical or electrical abuse



### **All Weather Resilience**

World record -60 to +60 °C operation reduces engineering costs of thermal management



### **Fast Charge**

High electrolyte conductivity enables 15 minute fast-charge, meeting EV requirements



### **Battery Integration Optimization**

Mass and volume savings due to improved safety and lower thermal management requirements

## ---Lower Cost Manufacturing---



### **Manufacturing Compatibility**

Existing manufacturing & supply chain provides most necessary components at scale



### **Thicker Electrodes**

Ability to wet thicker electrodes reduces manufacturing cost and increases cell capacity



### **Rapid Electrolyte Wetting**

Faster injection & wetting times reduces the cell idling time prior to cell formation



### **Reduced Formation Time**

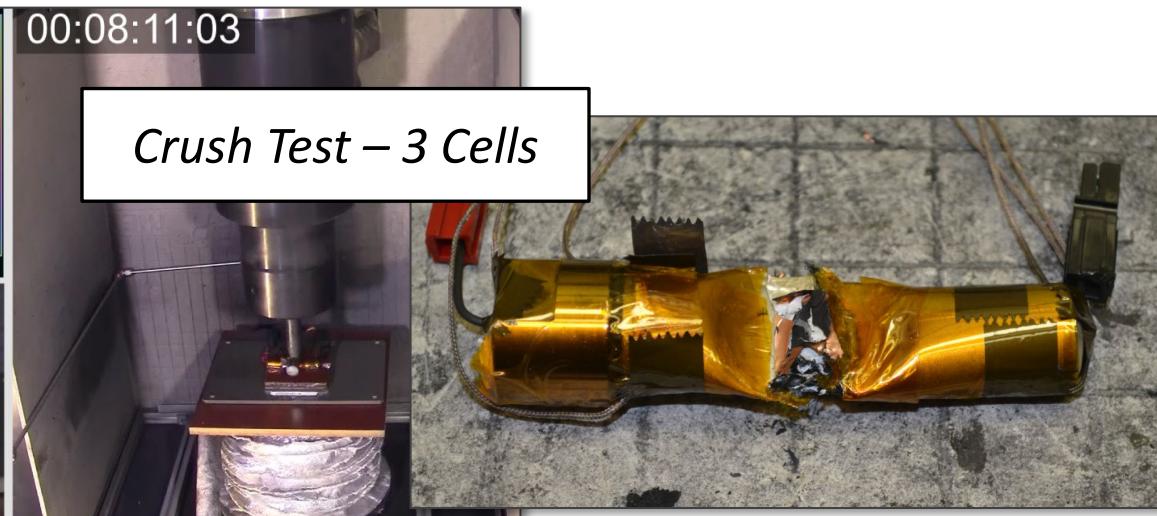
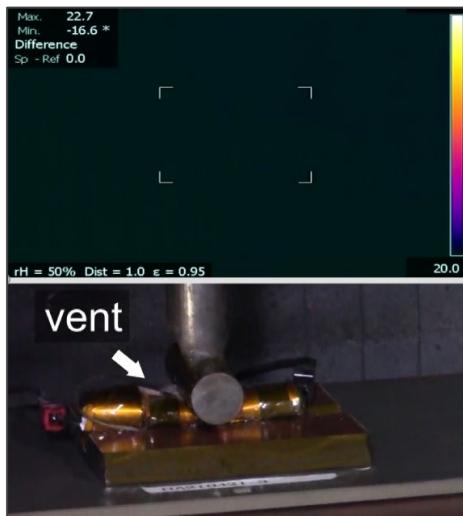
Demonstrated reduced formation of Li-ion cells can reduce cell cost considerably



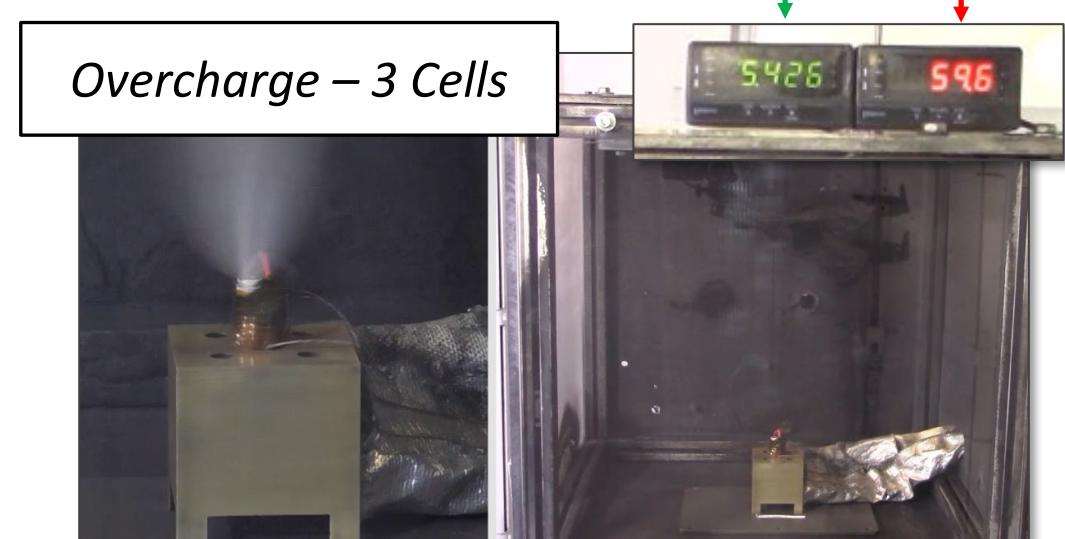
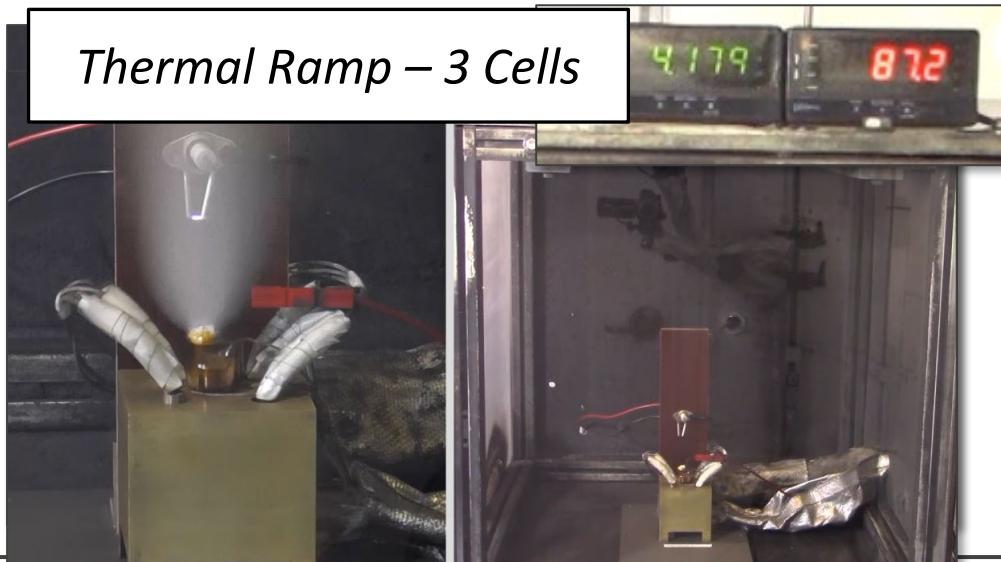
### **Recycling**

Simple venting of electrolyte allows for reduced recycling cost with cheaper transportation

# 3<sup>rd</sup> Party Safety Testing – Sandia National Labs



--3<sup>rd</sup> Party Safety Testing--  
LiGas Cells Fail Safely



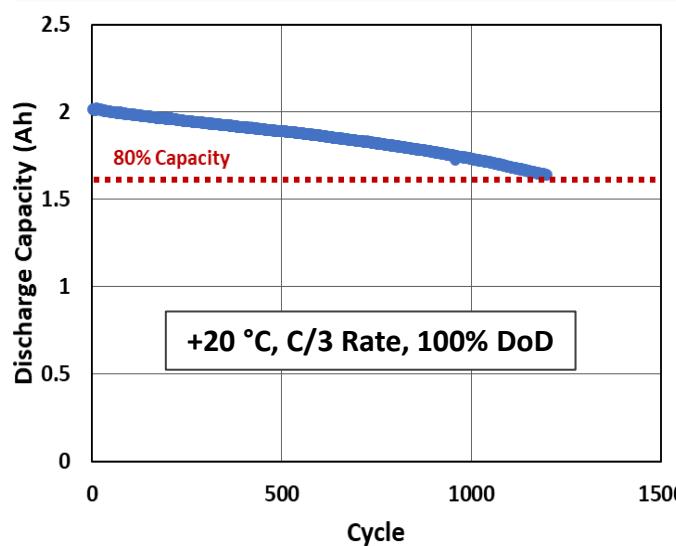
# Technology Readiness

***Demonstrated Performance***

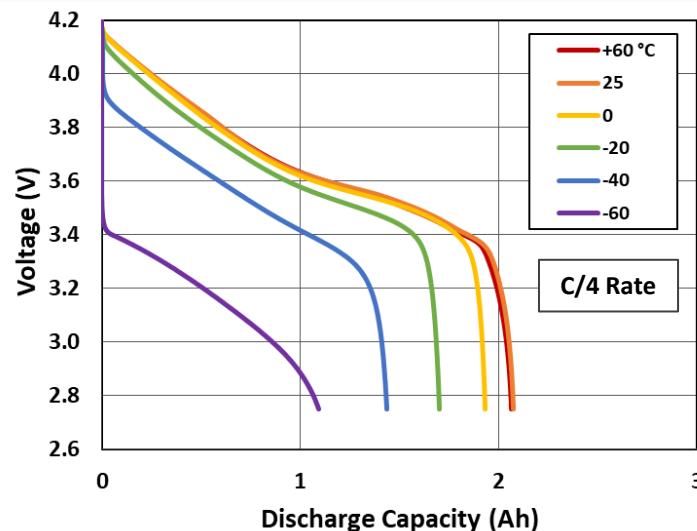
***Customer Validated***

***Pilot Production In California***

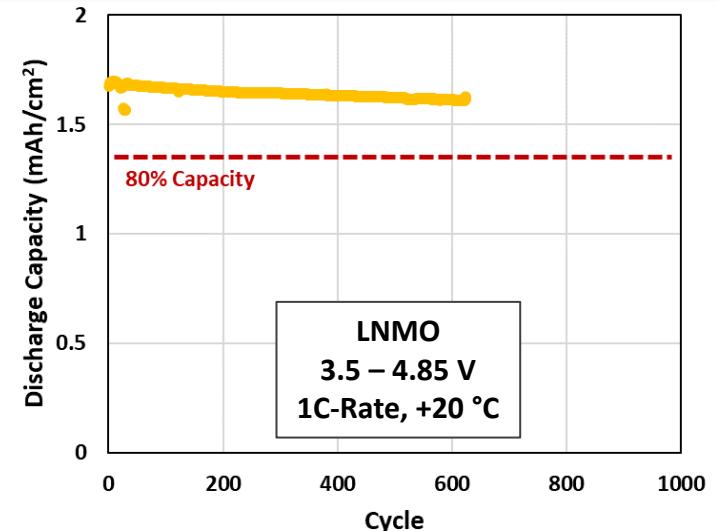
***Technology Licensing***



**Excellent Cycle Life**



**-60 to +60 °C Operation**



**Cobalt-Free, High Power 4.85V LNMO Cathode**

# **SOUTH 8** **TECHNOLOGIES**

Next Generation Energy Storage Devices



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