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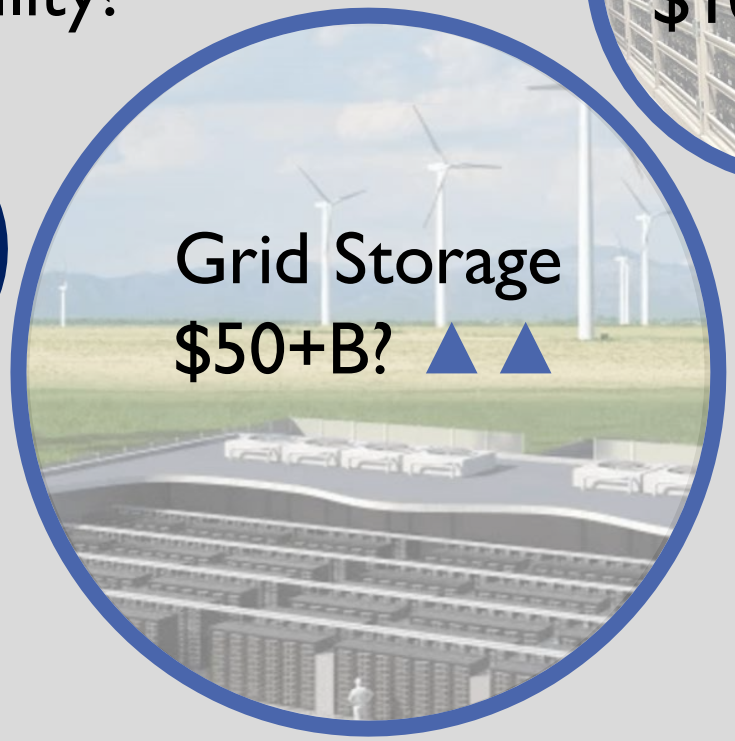
The Limitless Potential of Zinc Batteries



Onas Bolton, PhD CEO/Founder – onas.bolton@octetsci.com

Growing Battery Markets

- Ballooning need
- $$ Inadequate Lithium supply
- Lead toxicity
- Safety issues
- Sustainability?



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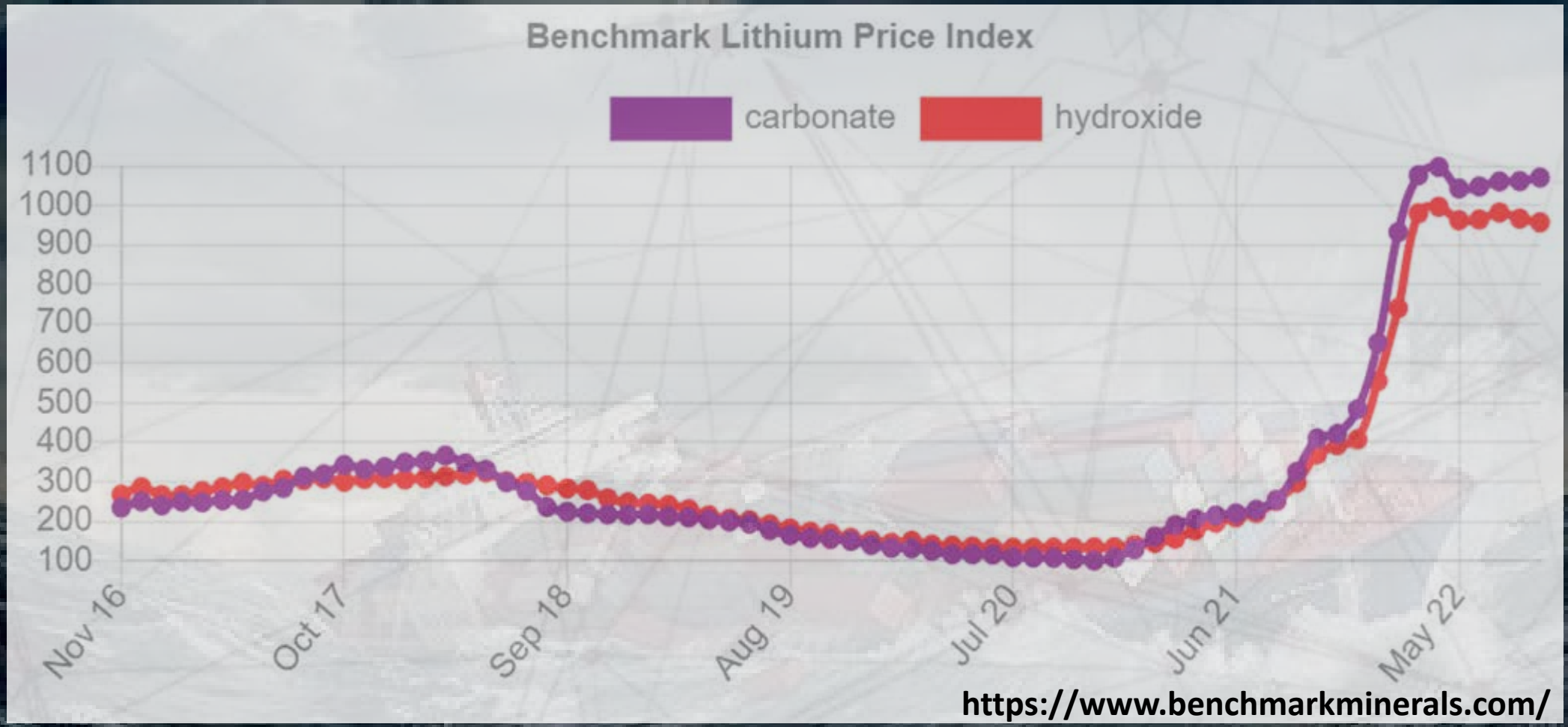

Li-Ion Price: in 2021 = $105 / kWh → in 2022 = $160 / kWh

A Better Battery Technology

	Lithium -Ion	Lead-Acid	Other Flow	Zinc
Safety	✗	✗	✓	✓
Cost	✗	✓	✗✓	✓
Performance	✓	✗	✗	✓
Supply chain	✗	✓	✗✓	✓
Long lasting	✗	✗	✓	✓
Sustainable	✗	✓	✓	✓

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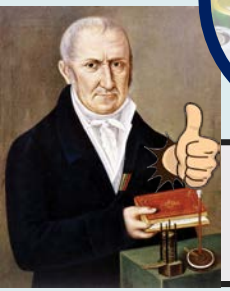
A Future of Zinc Batteries

Easier to scale, use & recycle

Broad market potential

Still a young technology



Consumer
$6B

Military
$3B

Grid Storage
$50+B? ▲

Backup
$10B ▲

Starter
$30B

Electric Passenger Vehicles
$200+B? ▲

Legacy Zinc markets

New Zinc markets

Tomorrow's Zinc Battery Markets

1799

1900s

2000s

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Zinc Batteries: Today vs. Tomorrow

Areas for Improvement:

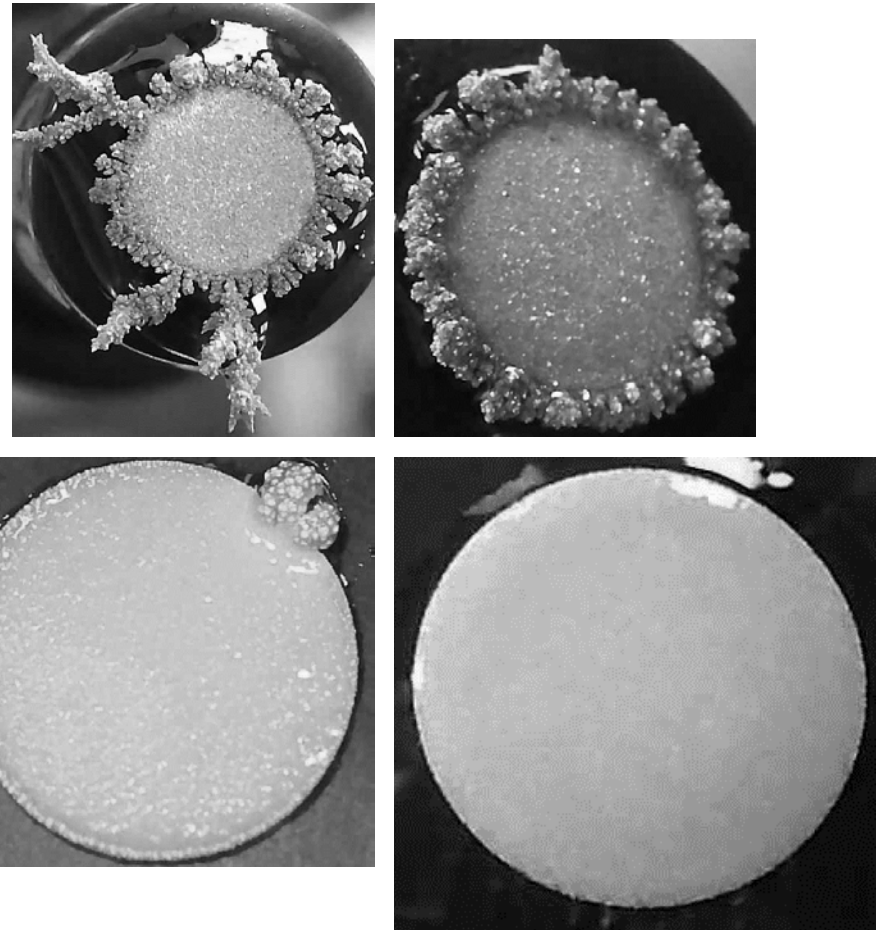
Efficiency · Cycle Life · Shelf Life ·

Energy Density · Capacity Loss

Challenges:

Dendrites · Gassing ·

Shape Change · ***Poor Plating***



Electroplating?

Use Additives!

Classical Electrolyte Additives

- *Too weak*
- *Limited range of use*
- *Unstable*
- *Foaming or Insoluble*

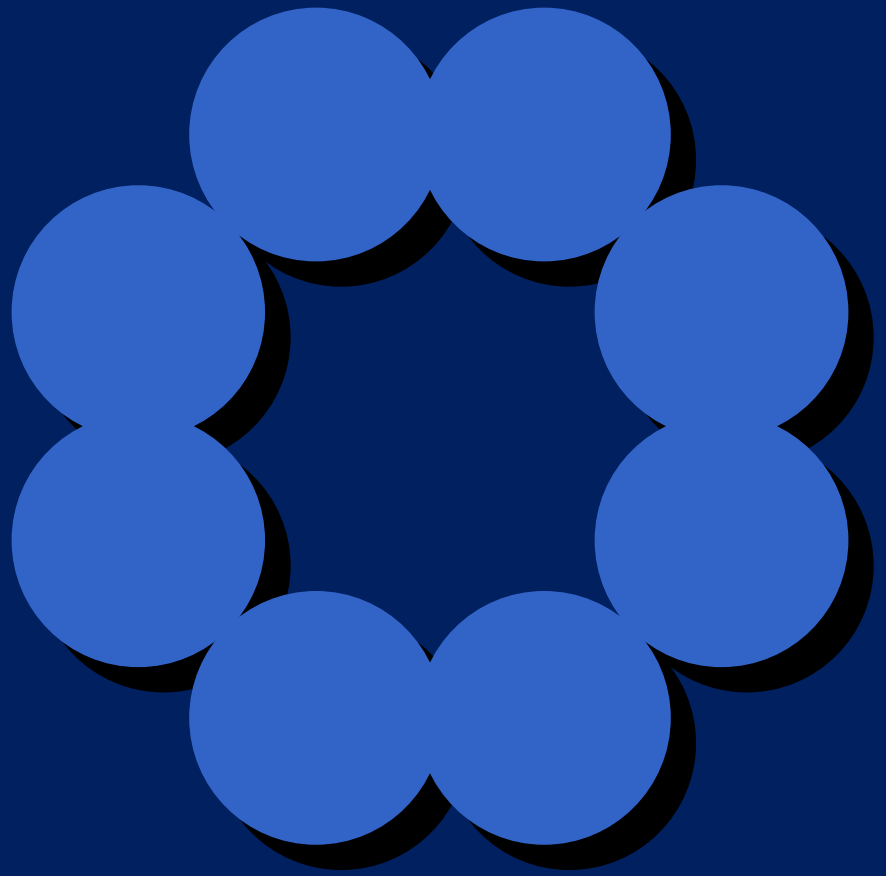
Not *Designed* for Zinc Batteries!

The Next Step in Zinc Battery Evolution:

Electrolyte Additives *DESIGNED* for Zinc Batteries

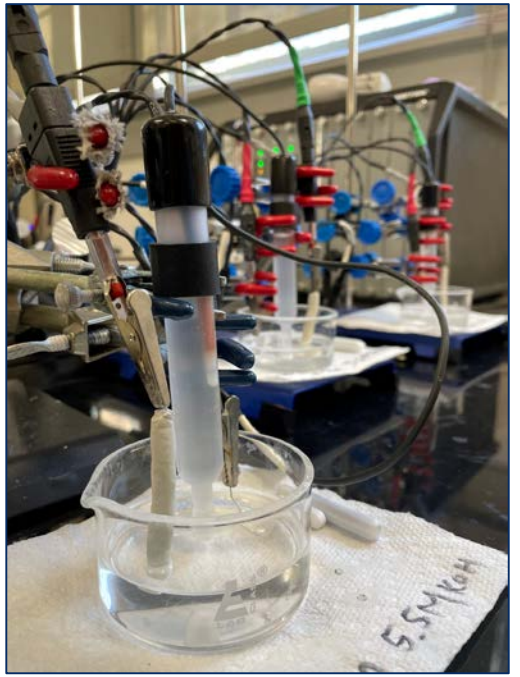
Target: Better Additives for Zinc

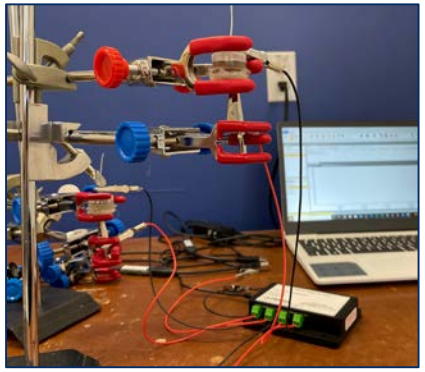
- ❑ Stop Dendrites
- ❑ Stop Hydrogen
- ❑ Minimal Impendence
- ❑ Functional in Dilute Solution
- ❑ Long-term Stability
- ❑ Scalable / Economical

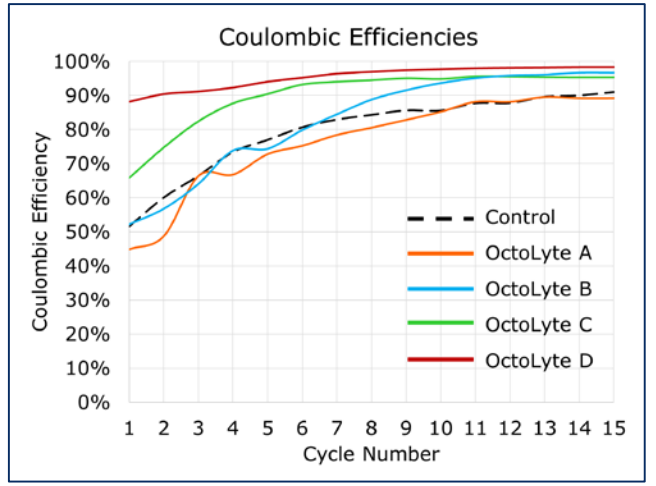


Designing Optimal Additives

- New molecules
- High-throughput approach
- Work closely with end-users
- Focus on scalability
- Exceptionally easy to implement
- Dive deep! (technologically)







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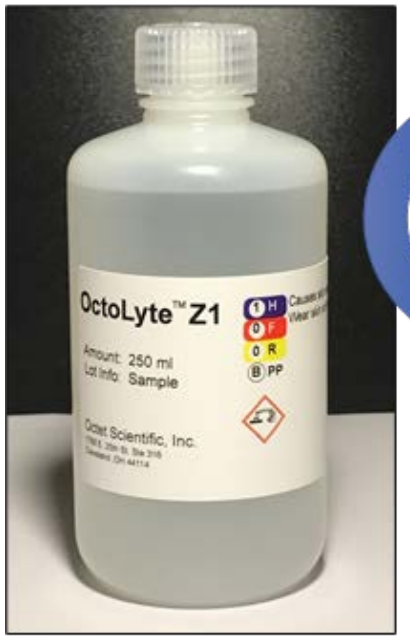
Nearly **250** New Additives Tested

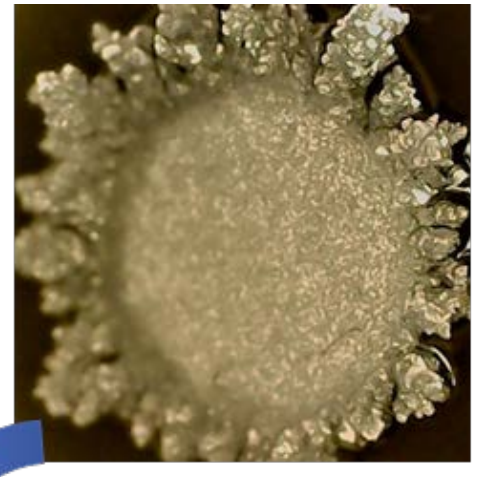
Over **1500** Data Sets

Alkaline & Acidic | Charge & Discharge

OctoLyte™

A New Class of
Electrolyte Additives,
Designed for Zinc Batteries





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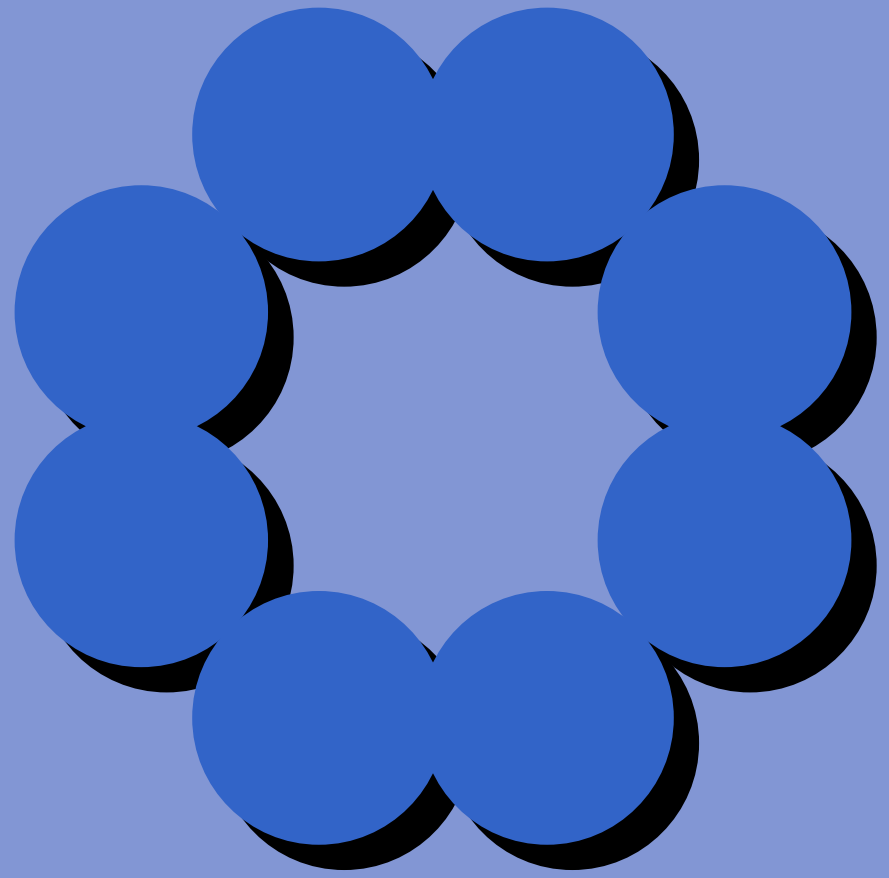
Achieved: Better Additives for Zinc

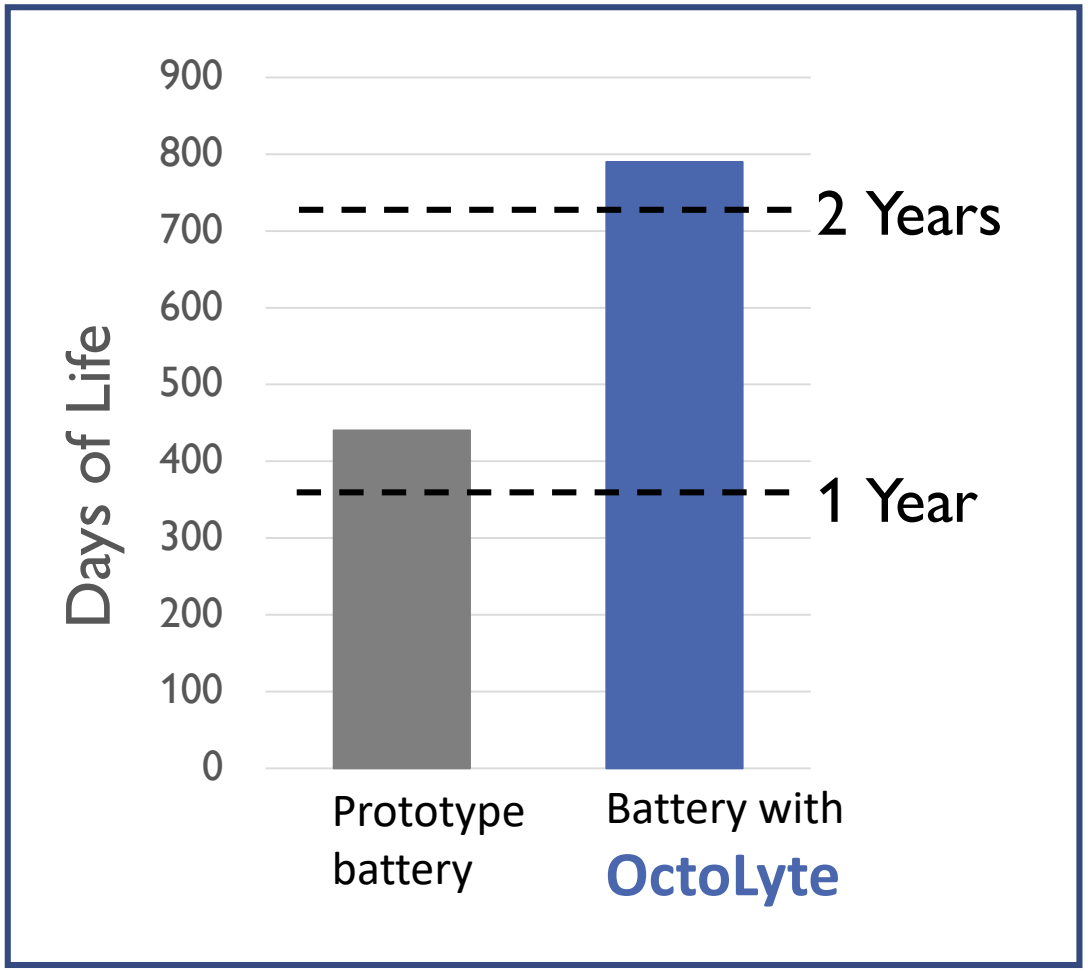
- ☑ Stop Dendrites
- ☑ Stop Hydrogen
- ☑ Minimal Impendence
- ☑ Functional in Dilute Solution
- ☑ Long-term Stability
- ☑ Scalable / Economical



Customer Data:
Batteries last longer with OctoLyte™

In an e-bike/scooter battery

OctoLyte adds a year of life!



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OctoLyte™

Drop-In Improvement for Zinc Batteries

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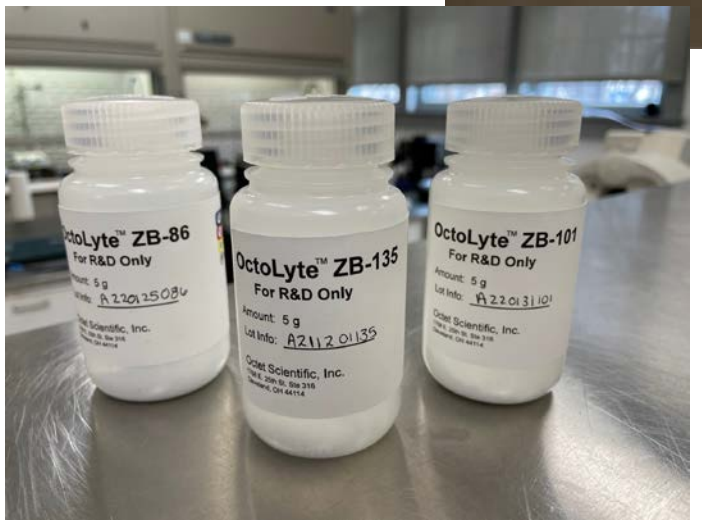

www.OctetSci.com
Onas.Bolton@OctetSci.com