

# Miami Solution-

## Novel Electrochemical Extraction of Lithium from Brines

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### Problems and issues with existing electrochemical processes:

1. Low capture efficiency and high pressure drop
2. High cost and low production rate due to low loading of electrodes
3. Large number of cycles required to reach a desired purity for battery production

### Solutions:

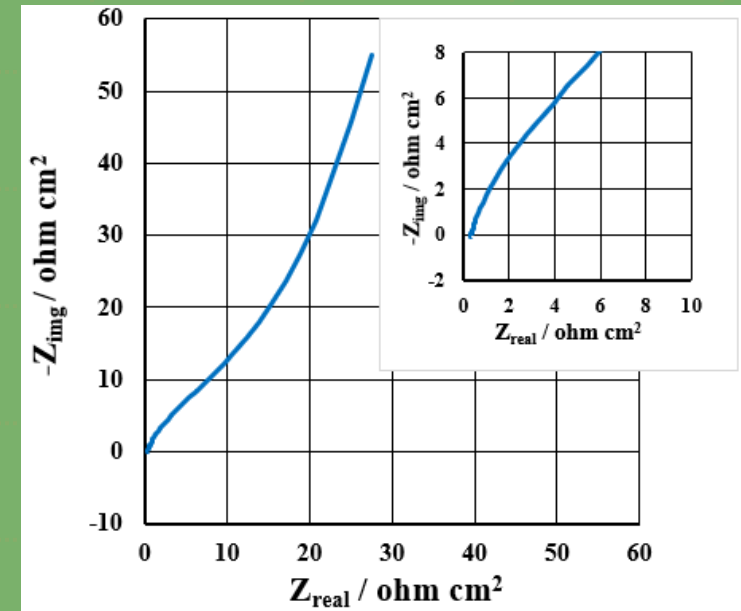
1. Advanced design of electrodes and cells
2. Novel electrode fabrication technologies providing high loading
3. Highly efficient electrochemical processing system and operational scheme significantly reducing the number of cycles.

### Goal:

Efficient and durable lithium extraction technology offering a cost of ~1 \$/kg and water consumption of 8000 gallon/ton of LiOH



Left: Photo of a casted thick electrode layer (900  $\mu\text{m}$ ) on current collector film using our proprietary method. Right: Cylindrical electrode fabricated using our method with thickness of 1000  $\mu\text{m}$ .



The electrochemical impedance spectroscopy of the electrode indicating a low resistivity of the electrode.