

Project Overview

This project focuses on the development of advanced lithium-ion batteries with higher energy density, fast charging capability, improved safety, and longer battery life. It involves the design, synthesis, and characterization of high-performance cathode and anode materials, along with the study of lithium-ion transport and interphase stability. The key technical goals include achieving high-voltage cathodes >4.5V and >120 mAh/g and high-capacity anodes >175 mAh/g, both up to 10C with >80% capacity retention. Final deliverables target high energy density >250Wh/kg and high-power density continuous power >500W/kg for a coin cell.

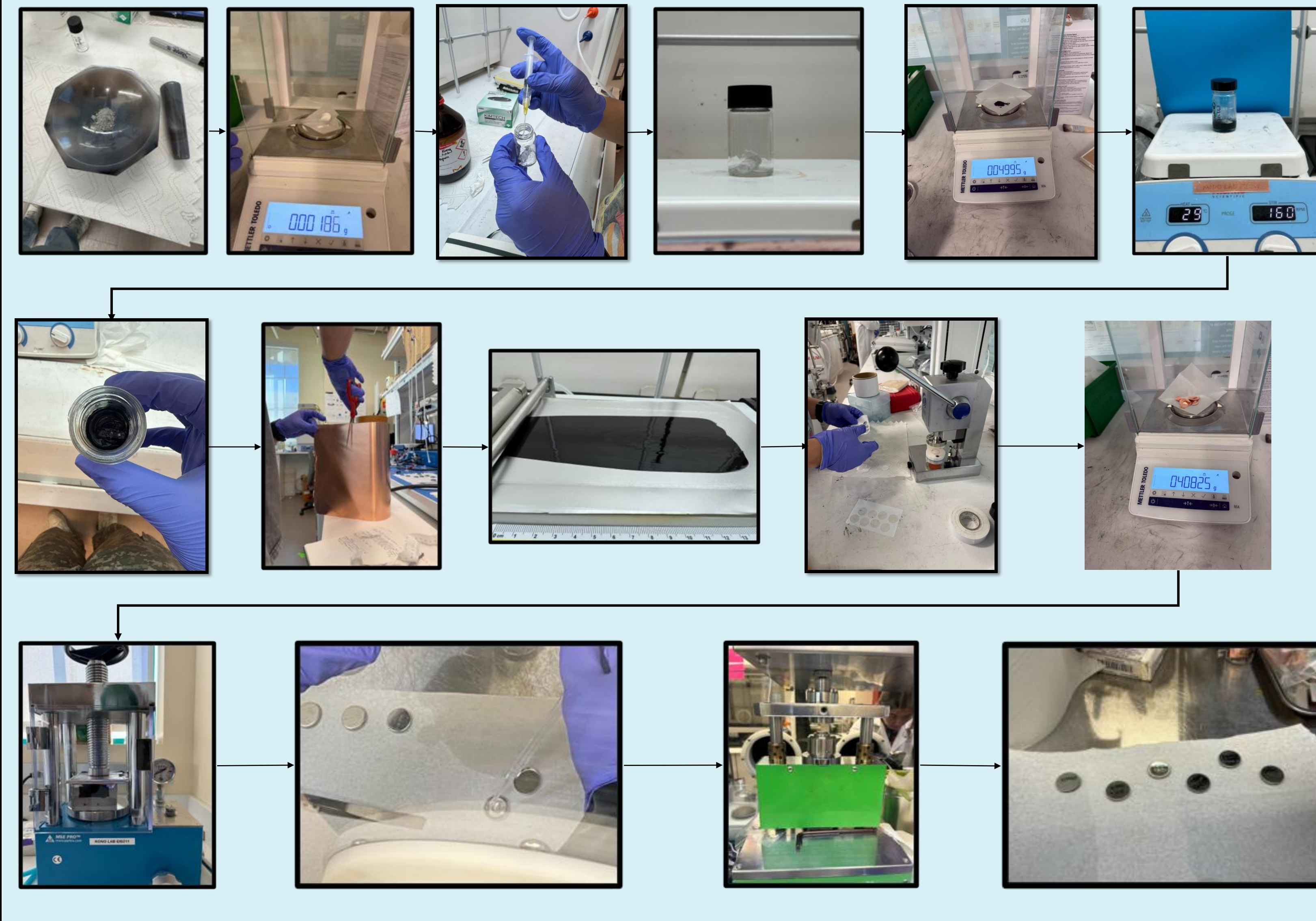
Meet The Team



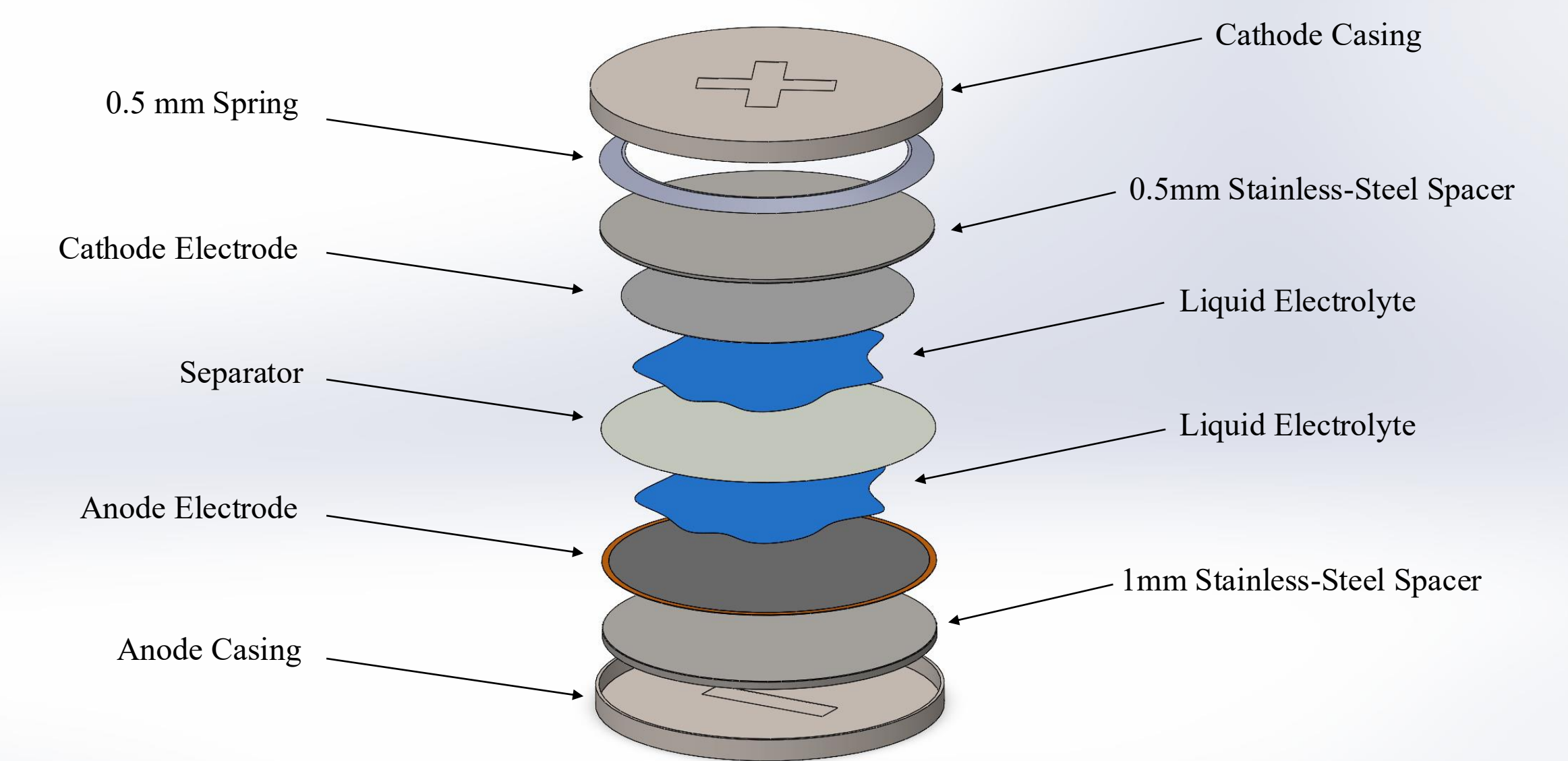
About the Lab

The Electrochemical Energy (e²) Lab at SDSU is run by Dr. Lingping Kong. It focuses on developing next-generation electrochemical energy storage systems, particularly advanced battery technologies. The lab's work centers on improving the performance, safety, and longevity of batteries through the design of new materials and a deeper understanding of how they function at the microscopic level.

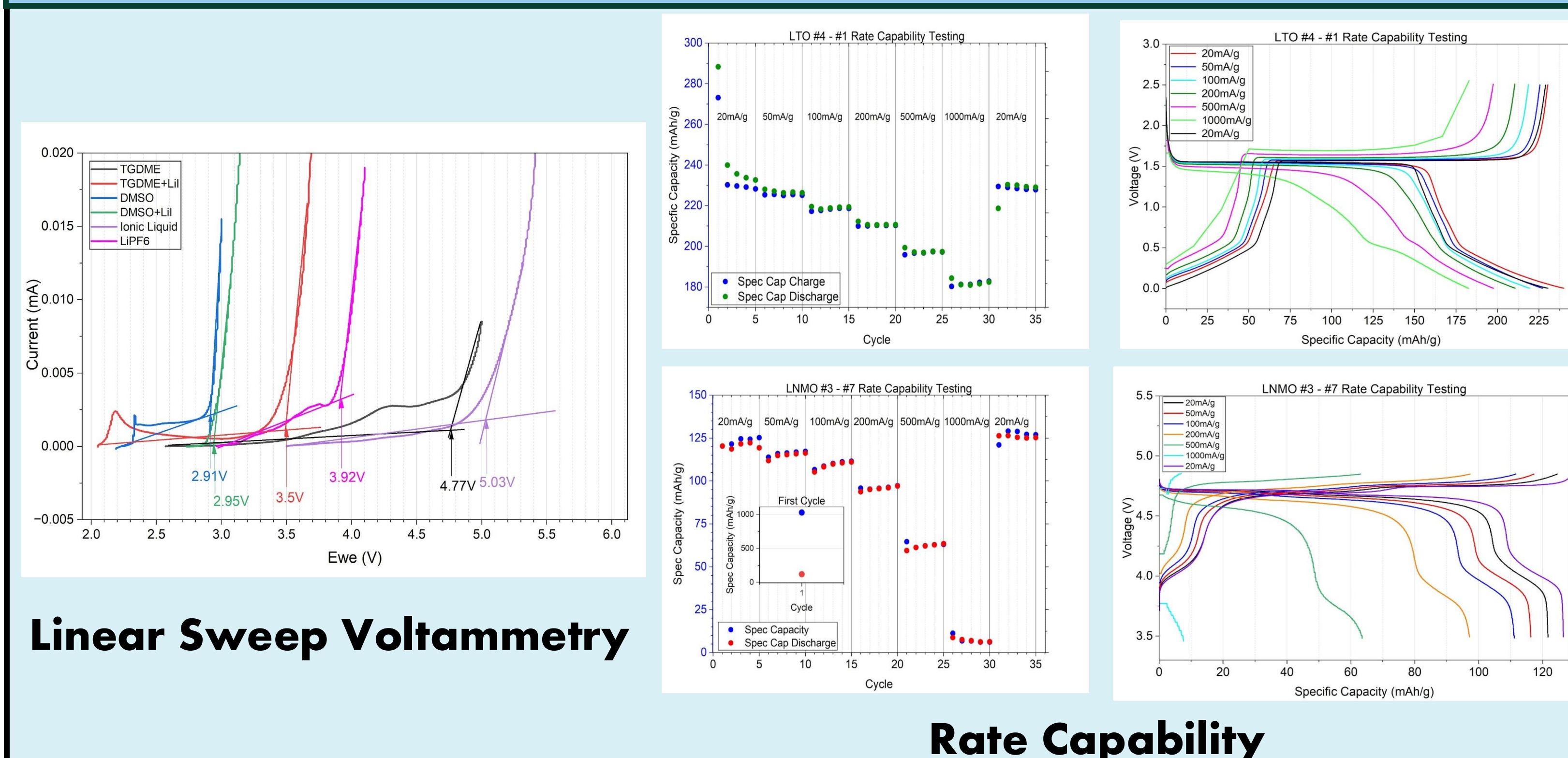
Manufacturing



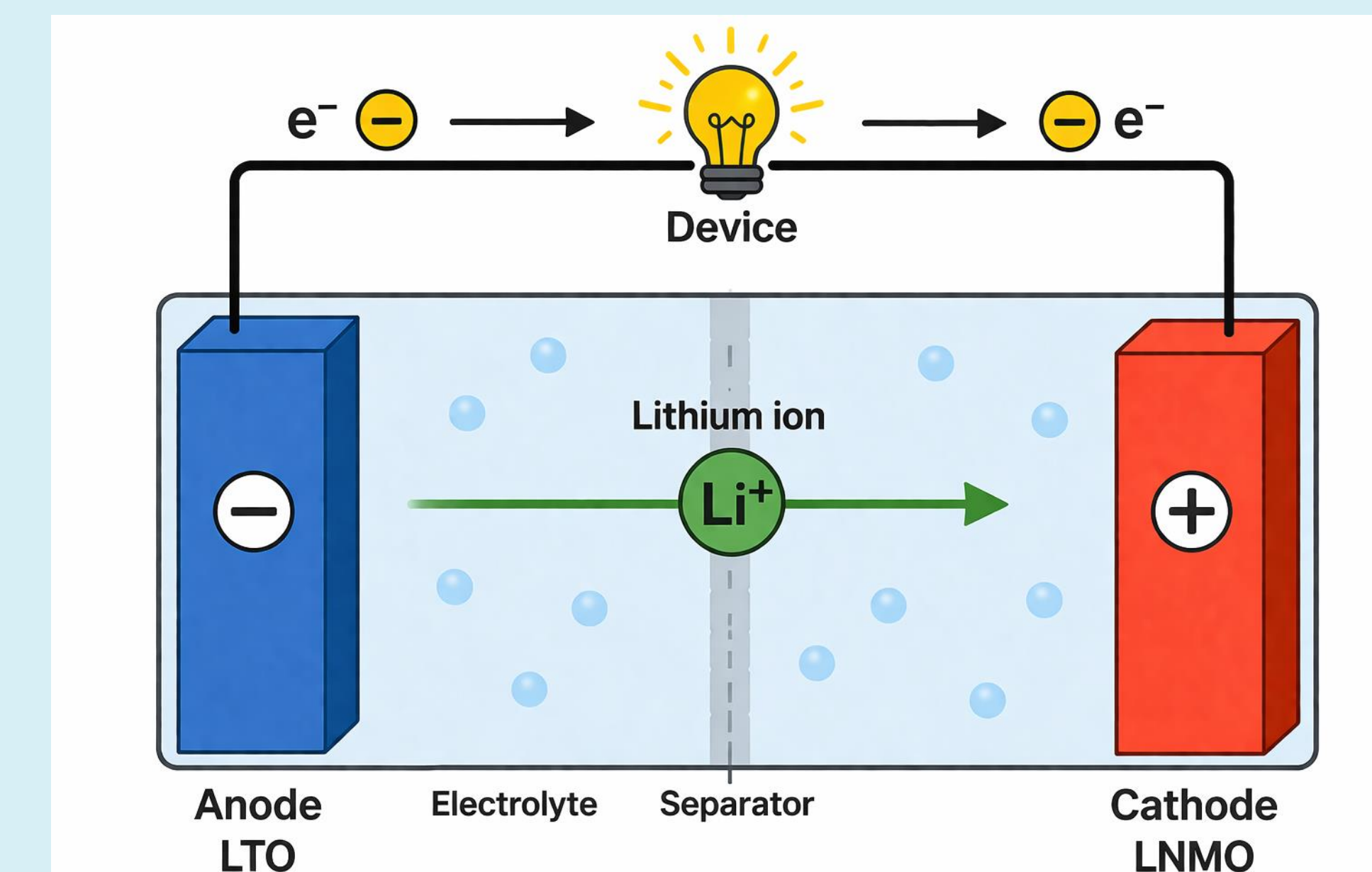
Coin Cell Exploded View



Cell Testing and Results



Lithium-Ion Transport



Acknowledgements

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