Technical Project Series

Research on Positive Electrode Additives for Energy Storage Batteries

Expected Impact

This project addresses a common failure mode in stationary storage batteries: **the loss of positive active material**.

Results will provide **well-cataloged strategies and materials** for increasing the material cohesion and strength of positive electrodes during the rigorous duty cycles associated with **ESS applications**.

Objective

This project focuses on improving the **performance of lead battery electrodes** specifically in battery energy storage applications (ESS) like demand reduction or arbitrage.

A family of additive salts in the positive electrode will be studied to maximize energy throughput.

The study will focus on **reinforcing the positive active material** with salts such as antimony trioxide, graphite and other carbons, stannous sulfate, glass microspheres, and titanium oxides.

Project Info

Duration: 3 years

Partners: Jinkeli Power Technology Co., Ltd.

Focus: Energy Storage Applications

Location: China

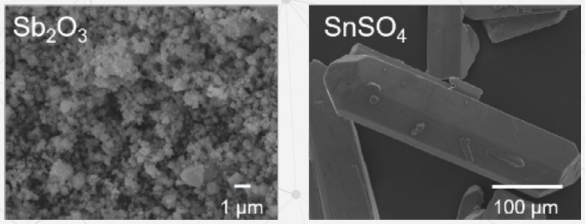
Initial Results

1. Analysis of additive materials and cured battery electrodes to determine chemical and physical properties.

2. Preliminary tests to reveal the impact of additives on structural strength and cohesion.

3. Establishment of the laboratory scale cell production methods.

Research Imagery



BET=7.870m²/g

Figure 1: Microscopic images of the additives (providing different morphological properties) used in positive electrodes.