

## Developing a Multi-physical Test Bench for Battery Cell Analysis

Are you interested in advancing energy storage research and helping develop cutting-edge cell testing equipment? Join our young and international research team!

You will help to design and develop a multi-physical test bench for battery cells. We will integrate ultrasonic measurements, thermal cycling, and electrochemical impedance measurements. With the integration of multiple testing methods and the capability to test a wide range of cells, this project offers a unique opportunity to gain valuable hands-on experience in developing innovative and environmentally friendly energy storage solutions.



Fig.1: Testing Workstation under test

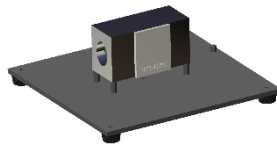


Fig.2: CAD of the Thermal Testing Fixture

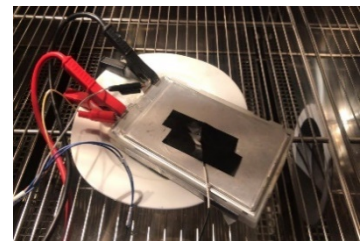


Fig.3: Lithium Ion Test

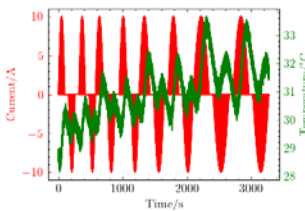


Fig.4: TIS Experimental Results

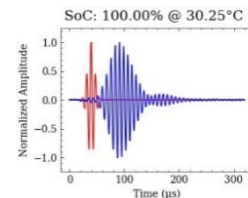


Fig.5: Ultrasound Experimental Results

### Scope of the internship

You will contribute to designing and developing a modular and scalable multi-physical test bench for battery cells that integrates electrochemical, thermal, and mechanical testing methods. The test bench will provide the foundation for testing the cells concerning various conditions, enabling research to understand battery cells better.

## Special requirements

- Experience with the design and development of parts
- Familiarity with programming languages such as Python or Arduino
- Ability and joy to work independently and collaboratively as part of a team
- Interest in new technologies and cutting-edge science
- Willingness to learn and take on new challenges
- Having fun in a laboratory environment
- **Note:** The tasks will be adapted to the qualification level and skills of the interns.

**Qualification level:** Bachelor's Degree, Master's Degree

**Program lines:** SRI, A2S, BT/MT