

Methodological Development for a Li-Ion Cell Experimental and Virtual Characterization



➤ Supporting company: **POWERTECH Engineering (PWT)**

➤ Start date: March-May 2021

➤ Project duration: 6 months

➤ Sites:

- Politecnico di Torino/Energy Center laboratories
- PWT's offices in Turin

➤ Compensations: Meals, travel expenses

➤ Motivations and Project Scope:

- The interest in Li-Ion cells is constantly growing due to the increase of applications that benefit from such technologies, including the automotive industry, industrial machines and energy storage.
- **CAE simulation** is a time- and cost-effective means that can support the development and testing of Li-Ion cells.
- The goal of the thesis project is to develop a methodology for the **experimental** and **virtual** characterization of a Li-Ion cell, using the GT-AutoLion tool included in the worldwide spread CAE simulation software GT-SUITE. The activity will be structured in two main parts:
 1. Experimental characterization of a Li-Ion cell @ PoliTo test facilities
 2. Construction, calibration and validation against experiments of a physical electro-chemical model of the same Li-Ion cell built in GT-AutoLion (@ PWT's offices)

