



# ELMO-LION

## PhD course (6 ECTS)

## Educational

# Learning Modules on Li-ion batteries

For 2024 course consists of 3 modules: Online Lectures, Project Work and Summer School. Each module can be taken separately or together with other modules.



Co-funded by the  
European Union

# Course trail

Total price: ~~400 €~~ 350 €

## Registration

October 2023



## Online lectures

March 2024

Price: 50 €  
2 ECTS



## Project work

April 2024

Price: 50 €  
2 ECTS



## Summer school

August 2024

Price: 300 €  
2 ECTS



# Partners



[ELMO-LION.COM](http://ELMO-LION.COM)

[LUT.ELMO-LION@LUT.FI](mailto:LUT.ELMO-LION@LUT.FI)



# Module 1

## Online lectures

March - June 2024

2 ETCS, 50 €

This Module includes number of broad topics in the field of batteries.

First principles of the Li-ion batteries

Spectroscopic methods

Synthesis of the battery materials

Battery market

Recycling strategies for Li-ion batteries

Diagnostic and operation

All lectures are conducted online through the CEPHEI education platform and are presented by the real experts in the battery area.

Quizzes follow each lecture; you need a minimum score of 80% on all quizzes to get credits.

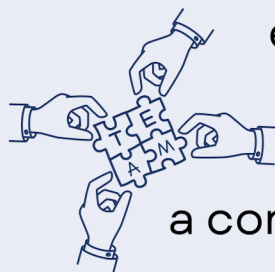
# Module 2

## Project work

April - July 2024

2 ETCS, 50 €

The project work module entails collaborative group projects culminating in a comprehensive report.



Students will receive a curated set of topics reflecting the current challenges and requirements of industrial partners.



Each student is expected to develop individual solutions for the assigned case.



# Module 3

## ELMO-LION

## Summer

## school

Italy

August 2024

2 ETCS, 300 €

The duration of Summer school is 5 days.

The lectures and seminars from industrial and academy partners

Working on the developing ideas for solving industrial challenges under the mentor's supervision

Start-up application