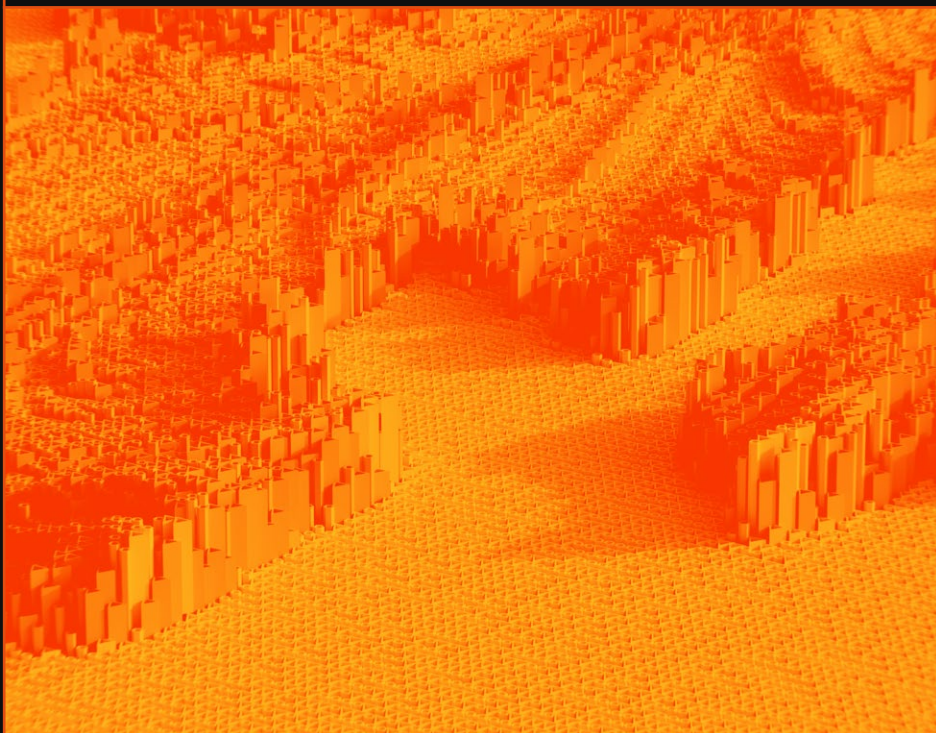
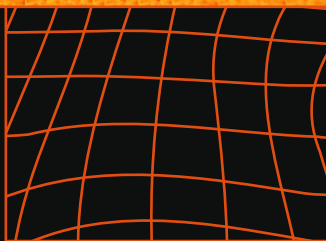




THOR



**Innovative
methodology
for battery
testing**



Funded by the
European Union

The Solution

THOR will improve battery lifetime and safety by developing a virtual tool: the Digital Twin. The tool will optimise design and/or usage conditions for a better understanding of battery behaviour.

Impacts



Industrial:

the Digital Twin allows cost reduction related to equipment and infrastructure.

Scientific:

the battery system mechanism will be clearer and new materials will be discovered.

Economic:

business opportunities in the battery industry will increase due to cost competitiveness.

Societal:

the younger generation will be motivated to study electrochemistry and electric vehicles.

Regulatory:

virtual tests will be accepted as part of the certification process.

Expected results

Closing of the loop.

Thanks to the research and development efforts of the scientific community, it will be possible to predict the best set of parameters for a given battery's behaviour

Virtual testing.

The method will become more common in the next 10 years. It is expected that 80% of industries will use Digital Twins during the battery development phase

New standards for battery data.

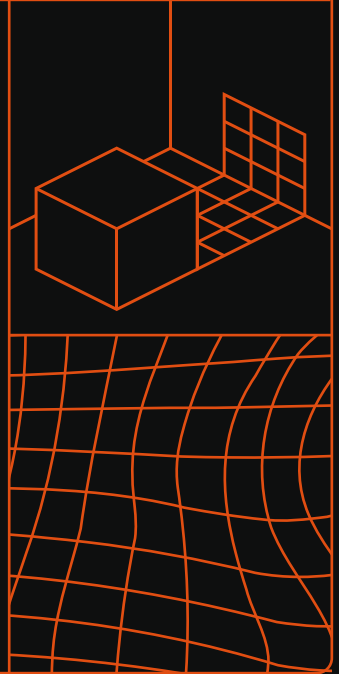
Data related to battery testing will be harmonised. This will allow projects to share data and open-source databases to be developed

Digital Twin

The Digital Twin is a virtual representation of a physical battery system.

It will be used to:

- 1.** Experiment with surrogate models powered by artificial intelligence that can be licensed to early adopters.
- 2.** Generate ideal battery designs to reduce the need for physical prototypes and minimise material waste.
- 3.** Enable maintenance programs useful for reducing costs and scheduling battery replacement.



Key figures

- 4** Industrial partners including cell and battery manufacturers and end users.
- 3** Research and technical organisations.
- 2** Requirements from the battery community: data harmonisation and standardisation of methodologies.
- 1** Digital Twin

The consortium members



Visit our website

www.thorbatteries.eu


Contact us at:

info@thorbatteries.eu

Or via the project coordinator's mail:

lise.daniel@cea.fr

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