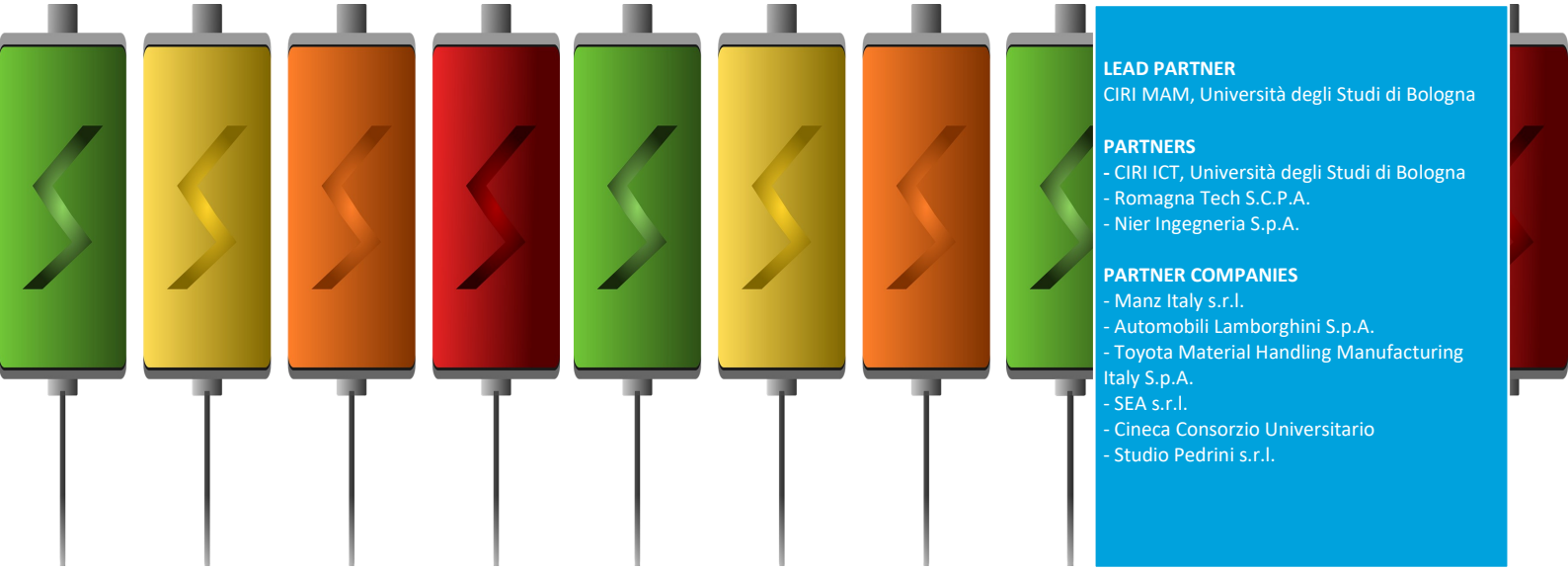
Lithium Battery per l'Emilia–Romagna



LEAD PARTNER
CIRI MAM, Università degli Studi di Bologna

PARTNERS
- CIRI ICT, Università degli Studi di Bologna
- Romagna Tech S.C.P.A.
- Nier Ingegneria S.p.A.

PARTNER COMPANIES
- Manz Italy s.r.l.
- Automobili Lamborghini S.p.A.
- Toyota Material Handling Manufacturing Italy S.p.A.
- SEA s.r.l.
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Technological systems with battery pack (BP) for the automotive industry and the industrial handling in Emilia-Romagna.

The LiBER project, based on a pre-existing base technology developed at the network's laboratories, aims at providing a methodology for the development of a **Battery Pack** which may power multiple application areas.
The objective of the project is the realization of BP constituted by a relevant number of cylindrical cells (between 1,000 and 10,000) and to start with base modules (brick) realized with an automated, qualified process.

LiBER offers a process and product solution for the Battery Pack, to address the open challenges such as:

- **Reliability and costs**: a new concept of the modular structure, with no need for wired electrical connections;

- **Safety**: measurement of the temperatures on the two ends of 100% of the cell, for improved safety levels;

- **Flexibility**: combination of parametric dimensioning for the base module and modularity for the realization of the pack, in order to implement different forms, configurations and dimensioning within the same project.

Objectives and Results:

Constitution of a scientific and technology hub for the development and implementation of **BP for automotive applications**. To satisfy of the needs for advanced cylindrical cells **accumulation systems** of the regional manufacturing industries, which are currently being supplied by other foreign countries.

Technical objectives:

-Integration to BP with on-board HVAC system;
-BP remote monitoring with a view to developing 'predictive maintenance' and 'car as a service';
-Beneficial solution for battery swap applications;
-Re-use of BP and second life of cells;
-Methodology of automatic assembling of base units, compatible with high-volume production lines;
-BP fast prototyping methodology in order to set up experimental vehicles with low investments;
-Realization of an integrated design methodology and of a 'live demo BP' prototype.
The results will be delivered through specific communication activities (web, conferences, workshops, demo lab, etc).

Electrification of propulsion systems

Efficiency and environmental sustainability of vehicles

Strategic Industrial Research Project

AXIS 1 – Research and Innovation
S3 SPECIALISATION AREA- Mechatronics and Motoristics

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