Consortium

i-HeCoBatt is carried out by a highly focused consortium covering the whole relevant value chain of the EV batteries industry: A top automobile manufacturer (AUDI), a leading automotive components manufacturer (MIBA), an automotive data management software developer (DATIK), a printed electronics developer (EPI) and an eco-design expert (VERTECH), supported by first order two European research centres (CEA, CIDETEC).

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i-HeCoBatt

Horizon 2020
European Union Funding
for Research & Innovation

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Abstract

i-HeCoBatt stands for Intelligent Heating and Cooling solution for enhanced range EV Battery packs.

i-HeCoBatt's industrialization will enhance the efficiency of the heating and cooling system, through the cost reduction of its design and development.

To achieve so, i-HeCoBatt will integrate an innovative heat exchanger, which will allow to remove the currently used gap filler between the heat exchanger and the battery.

This design not only reduces weight but enhances the efficiency of the heating and cooling system. The generated temperature data feed in the battery management control unit, as well as an external early diagnostic and safety system connected to the cloud. Different interfaces will be created to access these data according to user profiles: designers, testers, maintenance teams or driver. The i-HeCoBatt technology targets EVs with a time to market of about five years.

Objectives

i-HeCoBatt answers to the "Integrated, brand-independent architectures, components and systems for next generation electrified vehicles optimised for the infrastructure request» of the LC-GV-01-2018 topic.

The aim of i-HeCoBatt is to achieve a smart, cost bursting industrial battery heat exchanger to minimize the impact on full electric vehicle range in extreme conditions.

Smart, because new sensing functionalities will be implemented in the thermal system in order to monitor the behavior of the whole battery pack thermal system.

Cost bursting, because expensive components of current SoA products will be replaced by cost efficient components as well as the number of parts minimized.

Industrial, because mass production means will be used to manufacture the heat exchanger.

Specific objectives

Efficiency

To increase the e-powertrain overall efficiency up to 5%.

Cost reduction

To prove of a minimum of 20% cost reduction in mass production of the thermal system by the introduction of an innovative heat exchanger.

User friendliness

To integrate new components and functionalities leading to higher user friendliness, reduction of range anxiety and temperature impact on degradation of the BP.

Automotive quality

To achieve automotive class quality.

On-board validation

To demonstrate the developed solutions in several AUDI BEV prototypes electric vehicles.