

PROJECT

GHOST

InteGrated and PHysically Optimised Battery System for Plug-in Vehicles Technologies

Funding: European (Horizon 2020)

Duration: Oct 2017 - Mar 2021

Status: Complete

Total project cost: €8,593,104

EU contribution: €7,151,165



[CORDIS RCN : 211942](#)

Objectives:

The GHOST project addresses all the H2020 topic GV-06-2017 aspects including also important contributions on the innovative Dual Battery System (DBS) architecture based on next generation of battery technologies (i.e. Li-S) and its impact on the reduction of complexity of the E/E architecture, improvement of energy density, efficiency, safety, scalability, modularity, and cost reduction.

The activity proposed will be conducted by a thirteen member consortium belonging to 7 EU MS representing all requested competencies in the field of Battery Systems (BS), their thermal management, integration and safety for automotive applications (OEMs (EUCAR), suppliers (CLEPA), Engineering and Technology Organisations and universities (EARPA) including members of ERTRAC and EGVIA).

The main objectives of the GHOST project are:

- Design of novel modular BS with higher energy density up to 20% based on the SoA of Li-ion battery cells through:
- Implementation of advanced light and functionalized housing material
- Innovative, modular, energy/cost efficient thermal management architectures and strategies
- Increase of the BS energy density up to 30% based on novel DSB Concept compared to SoA BS based on Li-ion technology
- Development of mass producible innovative and integrated design solutions to reduce the battery integration cost at least by 30% through smart design
- Definition of new test methodologies and procedures to evaluate reliability, safety and lifetime of different BS
- Design of novel prototyping, manufacturing and dismantling techniques for the BS
- Evaluation of 2nd life battery potential, applications and markets
- Demonstration of GHOST solutions in two demonstrators (BEV bus with superfast charge capability and PHEV) and one lab demonstrator (module level) for the post Lithium-Ion technology

Technologies developed in the Project will be ready for first market introduction from 2023 and have a strong impact on the e-chargeable vehicles performance increase.

Parent Programmes:

[H2020-EU.3.4. - Horizon 2020: Smart, Green and Integrated Transport](#)

Institute type: Public institution

Institute name: European Commission

Funding type: Public (EU)

Lead Organisation:

Centro Ricerche Fiat - Societa Consortile Per Azioni

Address:

Strada Torino, 50
10043 ORBASSANO (TO)
Italy

Organisation Website:
<http://www.crf.it>

EU Contribution: €723,125

Partner Organisations:

Infineon Technologies Austria Ag

Address:
SIEMENSSTRASSE 2
9500 VILLACH
Austria

Organisation Website:
<http://www.infineon.com/austria>

EU Contribution: €554,050

Toyota Motor Engineering & Manufacturing Europe

Address:
Bourgetlaan 60
1140 EVERE (BRUXELLES)
Belgium

Organisation Website:
<http://www.toyota.eu>

EU Contribution: €152,587

Johnson Matthey Battery Systems Engineering Limited

Address:
Nobel Road Units 1 Nobel Court
Dundee
DD2 4UH
United Kingdom

Organisation Website:
<http://www.axeon.com>

EU Contribution: €1,112,312

Iveco S.p.a.

Address:
Via Puglia 35
10156 Torino
Italy

Organisation Website:
<http://www.iveco.com>

EU Contribution: €398,563

Fraunhofer Gesellschaft Zur Foerderung Der Angewandten Forschung E.v.

Address:
HANSASTRASSE 27C

80686 MUNCHEN
Germany

Organisation Website:

<http://www.fraunhofer.de>

EU Contribution: €909,138

Vrije Universiteit Brussel

Address:

Pleinlaan
1050 Brussel
Belgium

Organisation Website:

<http://www.vub.ac.be>

EU Contribution: €845,438

Eve System Sas

Address:

Chemin Des Erables Za De La Ronze 56
69440 Taluyers
France

EU Contribution: €357,088

Valeo Klimasysteme Gmbh

Address:

WERNER-VON-SIEMENS-STRASSE 6
96476 BAD RODACH
Germany

EU Contribution: €640,500

Avl List Gmbh

Address:

Hans-List-Platz
8020 Graz
Austria

Organisation Website:

<http://www.avl.com>

EU Contribution: €423,675

Belgisch Laboratorium Van De Elektriciteitsindustrie

Address:

RODESTRAAT 125
1630 LINKEBEEK
Belgium

Organisation Website:

<http://www.laborelec.com>

EU Contribution: €236,250

Umicore Ag & Co Kg

Address:

Rodenbacher Chausee 4
63457 Hanau Wolfgang
Germany

EU Contribution: €372,316

Ikerlan - Technological Research Centre**Address:**

Paseo J.M. Arizmendiarieta 2
20500 MONDRAGON
Spain

Organisation Website:

<http://www.ikerlan.es>

EU Contribution: €426,125

Technologies:

Electric vehicle batteries (and energy management)
Modular battery design

Development phase: Demonstration/prototyping/Pilot Production

Transport

STRIA Roadmaps: electrification

Transport mode: Road transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Environmental/Emissions aspects, Decarbonisation

Geo-spatial type: Other