

PROJECT

SELFIE

SELF-sustained and Smart Battery Thermal Management Solution for Battery Electric Vehicles

Funding: European (Horizon 2020)

Duration: Dec 2018 - May 2022

Status: Ongoing

Total project cost: €5,842,546

EU contribution: €4,999,455



[CORDIS RCN : 218324](#)

Background & policy context:

Strong efforts would be required to drastically reduce the fossil dependency and the CO2 emissions reductions in the transport sector, in line with the 2011 White paper on Transport – i.e. a 20% reduction in the CO2 emissions by 2030 (relative to 2008 levels) and a 60% reduction by 2050 (relative to 1990 levels). Electrification of the transport sector offers EU the opportunity to achieve these long-term targets. The larger automotive industry have recognized the potential of electric vehicles (EVs) and there are large strides planned in building electric charging infrastructure – as announced by E.ON and Ionity about their investment plans for ultra-fast charging infrastructure. Right now, there's no EV that can accept this charge rate, but several automakers are working on electric cars able to accept that kind of power. SELFIE makes its biggest impact here, ensuring that the EVs, in the not so distant future, are able to accept this high charge rate without reduction on battery lifetime, and to store the energy efficiently in their batteries with minimal losses.

Objectives:

The overall objective is to develop and demonstrate a novel self-sustained compact battery system, consisting of:

- A smart modular battery pack, which has excellent internal thermal conductivity properties, a refrigerant cooling system and thermal storage system (heat buffer) capable to absorb excess heat due to fast charging, and which is thoroughly insulated from the outside;
- An advanced battery thermal management system capable to keep the battery temperature effectively within the optimal window and to prevent overheating (and battery degradation) due to fast charging.

SELFIE will significantly increase user acceptance of EVs by enabling fast-charging; offering significant cost reductions and elimination of range anxiety compared to other propulsion technologies.

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)

Other programmes: LC-GV-01-2018 Integrated, brand-independent architectures, components and systems for next generation electrified vehicles optimised for the infrastructure

Lead Organisation:

Vrije Universiteit Brussel

Address:
Pleinlaan

1050 Brussel
Belgium

Organisation Website:

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

EU Contribution: €721,106

Partner Organisations:

Ait- Austrian Institute Of Technology Gmbh

Address:

Donau-City-Strasse 1
1210 WIEN
Austria

Organisation Website:

<http://www.arcs.ac.at>

EU Contribution: €180,035

Imecar Elektronik Sanayi Ve Ticaret Limited Sirketi

Address:

ISMAIL CEM CAD 47C
07200 ANTALYA
Turkey

EU Contribution: €322,773

Centro Ricerche Fiat - Societa Consortile Per Azioni

Address:

Strada Torino, 50
10043 ORBASSANO (TO)
Italy

Organisation Website:

<http://www.crf.it>

EU Contribution: €721,375

Fraunhofer Gesellschaft Zur Foerderung Der Angewandten Forschung E.v.

Address:

HANSASTRASSE 27C
80686 MUNCHEN
Germany

Organisation Website:

<http://www.fraunhofer.de>

EU Contribution: €629,476

Valeo Systemes Thermiques

Address:

8 rue Louis Lormand
BP 513 LA VERRIERE - LE MESNIL SAINT D
France

Organisation Website:

<http://www.valeo.com>

EU Contribution: €680,138

Kompetenzzentrum - Das Virtuelle Fahrzeug Forschungsgesellschaft M.b.h.

Address:

Inffeldgasse 21a / 1. Stock
8010 GRAZ
Austria

Organisation Website:

<http://www.v2c2.at>

EU Contribution: €480,875

Valeo Klimasysteme GmbH

Address:

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

EU Contribution: €550,813

Fev Polska Spolka Z Ograniczona Odpowiedzialnoscia

Address:

NR 467, CHOLERZYN
32 060 LISZKI
Poland

EU Contribution: €210,140

I2M Unternehmensentwicklung GmbH

Address:

HANGWEG 27
8052 GRAZ
Austria

EU Contribution: €203,350

Ikerlan - Technological Research Centre

Address:

Paseo J.M. Arizmendiarrieta 2
20500 MONDRAGON
Spain

Organisation Website:

<http://www.ikerlan.es>

EU Contribution: €299,375

Technologies:

Electric vehicle batteries (and energy management)
Battery Storage System and supercapacitors

Development phase: Research/Invention

Transport

STRIA Roadmaps: electrification

Transport mode: Road transport

Transport sectors: Passenger transport

Transport policies: Environmental/Emissions aspects, Decarbonisation

Geo-spatial type: Other