

SMART SENSORS AND SELF-HEALING FUNCTIONALITIES EMBEDDED FOR BATTERY LONGEVITY WITH MANUFACTURABILITY AND ECONOMICAL RECYCLABILITY

Fact Sheet

Project Information

SALAMANDER

Grant agreement ID: 101104028

DOI

[10.3030/101104028](https://doi.org/10.3030/101104028)

EC signature date

30 March 2023

Start date

1 May 2023

End date

31 October 2026

Funded under

Climate, Energy and Mobility

Total cost

€ 4 304 716,25

EU contribution

€ 4 304 714,00

Coordinated by

INSTITUTT FOR
ENERGITEKNIKK



Norway

Project description

A future of longer-lasting, eco-friendly batteries

With the increasing reliance on Li-ion batteries (LIBs) to power our devices and facilitate the transition to renewable energy sources, the pressing problem of their limited lifespan and environmental impact looms large. LIBs degrade over time, and their production generates significant carbon emissions. In this context, the EU-funded SALAMANDER project offers a groundbreaking solution to these challenges.

Specifically, it aims to embed advanced sensors and self-healing capabilities within LIBs, creating smart batteries that can autonomously detect and repair damage. This innovative approach not only promises longer-lasting, more reliable batteries but also aligns with the goal of a sustainable European battery value chain and a greener future.

Fields of science (EuroSciVoc)

[natural sciences](#) > [chemical sciences](#) > [electrochemistry](#) > **[electric batteries](#)**

[natural sciences](#) > [chemical sciences](#) > **[polymer sciences](#)**

[engineering and technology](#) > [electrical engineering, electronic engineering, information engineering](#) > [electronic engineering](#) > [sensors](#) > **[smart sensors](#)**

[engineering and technology](#) > [nanotechnology](#) > **[nano-materials](#)**

[social sciences](#) > [economics and business](#) > [economics](#) > **[sustainable economy](#)**



Keywords

[Self-healing polymers](#)

[integrated battery sensing](#)

[battery management system](#)

[life cycle assessment](#)

[operando characterisation](#)

[electrochemical sensor](#)

[sacrificial salt](#)

[scavenging vesicle](#)

Programme(s)

[HORIZON.2.5 - Climate, Energy and Mobility](#)

MAIN PROGRAMME

[HORIZON.2.5.9 - Energy Storage](#)

Topic(s)

[HORIZON-CL5-2022-D2-01-06 - Embedding smart functionalities into battery cells \(embedding sensing and self-healing functionalities to monitor and self-repair battery cells\) \(Batteries Partnership\)](#)

Call for proposal

[See other projects for this call](#)

Funding Scheme

[HORIZON-RIA - HORIZON Research and Innovation Actions](#)

Coordinator



INSTITUTT FOR ENERGITEKNIKK

Net EU contribution

€ 1 391 875,00

Total cost

€ 1 391 875,00

Address

INSTITUTTV 18

2007 Lillestrm

 Norway 

Activity type

Research Organisations

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Participants (10)



UNIVERSITETET I OSLO

 Norway

Net EU contribution

€ 493 901,00

Address

PROBLEMVEIEN 5-7

0313 Oslo 

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 493 901,25



UNIVERSIDAD DEL PAIS VASCO/ EUSKAL HERRIKO UNIBERTSITATEA

 Spain

Net EU contribution

€ 145 000,00

Address

BARRIO SARRIENA S N

48940 Leioa 

Region

Noreste > País Vasco > Gipuzkoa

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 382 500,00

 **THIRD-PARTY** 

**BASQUE CENTER FOR MACROMOLECULAR DESIGN AND ENGINEERING
POLYMAT FUNDAZIOA**

 Spain

Net EU contribution

€ 237 500,00

Address

CALLE IBAETA CAMPUS UPV EHU 72
20018 Donostia San Sebastian 

Region

Noreste > País Vasco > Gipuzkoa

Activity type

Research Organisations

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



POLYKEY POLYMERS SL

 Spain

Net EU contribution

€ 192 312,00

Address

AVENIDA TOLOSA 72
20018 San Sebastian 

SME 

Yes

Region

Noreste > País Vasco > Gipuzkoa

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

[Contact the organisation](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 192 312,50



UPPSALA UNIVERSITET

 Sweden

Net EU contribution

€ 522 433,00

Address

VON KRAEMERS ALLE 4

751 05 Uppsala 

Region

Östra Sverige > Östra Mellansverige > Uppsala län

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#)  

Total cost

€ 522 433,75



KEMIJSKI INSTITUT

 Slovenia

Net EU contribution

€ 387 815,00

Address

HAJDRIHOVA 19

1000 Ljubljana 

Region

Slovenija > Zahodna Slovenija > Osrednjeslovenska

Activity type

Research Organisations

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#)  

Total cost

€ 387 815,00



UNIVERZITA PARDUBICE

Czechia

Net EU contribution

€ 217 926,00

Address

Studentska 95

532 10 Pardubice

Region

Česko > Severovýchod > Pardubický kraj

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#) [Website](#)

[Participation in EU R&I programmes](#)

[HORIZON collaboration network](#)

Total cost

€ 217 926,25



ASOCIACION INSTITUTO TECNOLOGICO DE LA ENERGIA

Spain

Net EU contribution

€ 260 250,00

Address

Avda Juan de la Cierva 24

46022 Paterna

Region

Este > Comunitat Valenciana > Valencia/València

Activity type

Research Organisations

Links

[Contact the organisation](#) [Website](#)

[Participation in EU R&I programmes](#)

[HORIZON collaboration network](#)

Total cost

€ 260 250,00



FRAUNHOFER GESELLSCHAFT ZUR FORDERUNG DER ANGEWANDTEN FORSCHUNG EV

 Germany

Net EU contribution

€ 365 702,00

Address

HANSASTRASSE 27C

80686 Munchen 

Region

Bayern > Oberbayern > München, Kreisfreie Stadt

Activity type

Research Organisations

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 365 702,50



IFE INVEST AS

 Norway

Net EU contribution

€ 90 000,00

Address

INSTITUTTVEIEN 18

2007 Kjeller 

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

[Contact the organisation](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 90 000,00

Partners (1)



PARTNER 

UNIVERSITY OF WARWICK

 United Kingdom

Net EU contribution

€ 0,00

Address

**KIRBY CORNER ROAD UNIVERSITY HOUSE
CV4 8UW COVENTRY** 

Region

West Midlands (England) > West Midlands > Coventry

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data

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European Union, 2025