

HORIZON
2020

Modelling for the search for new active materials for redox flow batteries

Fact Sheet

Project Information

SONAR

Grant agreement ID: 875489

[Project website](#)

DOI

[10.3030/875489](https://doi.org/10.3030/875489)

Project closed

EC signature date

10 October 2019

Start date

1 January 2020

End date

31 December 2023

Funded under

SOCIETAL CHALLENGES - Secure, clean and efficient energy

Total cost

€ 2 820 535,00

EU contribution

€ 2 385 985,00

Coordinated by

FRAUNHOFER GESELLSCHAFT
ZUR FORDERUNG DER
ANGEWANDTEN FORSCHUNG
EV



Germany

Project description

Energising redox flow batteries

SONAR will develop a framework for the simulation-based screening of electroactive materials for aqueous and nonaqueous organic redox flow batteries (RFBs). It will adopt a multiscale modelling paradigm, in which simulation methods at different physical scales will be further advanced and linked by combining physics- and data-based modelling. SONAR will develop a screening framework to determine levelized cost of storage, starting from the automatic generation of candidate structures for the

electroactive material, then iterating through molecular-, electrochemical interface-, porous electrodes-, cell-, stack-, system- and techno-economic-level models. To increase the throughput of the screening, SONAR will exploit advanced data integration, analysis and machine-learning techniques, drawing on the growing amount of data produced during the project. Project results are expected to reduce the cost and time-to-market of redox flow batteries, thus strengthening the competitiveness of the EU battery industry.

Fields of science (EuroSciVoc)

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



Keywords

[organic](#)

[redox flow battery](#)

[linked models](#)

[high-throughput screening](#)

[modelling](#)

[simulation](#)

[density functional theory](#)

[kinetic monte carlo](#)

[techno-economics](#)

[cell](#)

[system](#)

[stack](#)

[battery system](#)

Programme(s)

[H2020-EU.3.3. - SOCIETAL CHALLENGES - Secure, clean and efficient energy](#)

MAIN PROGRAMME

[H2020-EU.3.3.4. - A single, smart European electricity grid](#)

Topic(s)

[LC-BAT-3-2019 - Modelling and simulation for Redox Flow Battery development](#)

Call for proposal

[H2020-LC-BAT-2019-2020](#) 

[See other projects for this call](#)

Sub call

Funding Scheme

[RIA - Research and Innovation action](#)

Coordinator



FRAUNHOFER GESELLSCHAFT ZUR FORDERUNG DER ANGEWANDTEN FORSCHUNG EV

Net EU contribution

€ 918 900,00

Total cost

€ 918 900,00

Address

HANSASTRASSE 27C

80686 Munchen

 **Germany** 

Region

Bayern > Oberbayern > München, Kreisfreie Stadt

Activity type

Research Organisations

Links

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

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

[HORIZON collaboration network](#) 

Participants (6)



DANMARKS TEKNISKE UNIVERSITET

 **Denmark**

Net EU contribution

€ 392 335,00

Address

ANKER ENGELUNDS VEJ 101
2800 Kongens Lyngby 

Region
Danmark > Hovedstaden > Københavns omegn

Activity type
Higher or Secondary Education Establishments

Links
[Contact the organisation](#)  [Website](#) 
[Participation in EU R&I programmes](#) 
[HORIZON collaboration network](#) 

Total cost
€ 392 335,00



CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS

 France
Net EU contribution
€ 220 200,00

Address
RUE MICHEL ANGE 3
75794 Paris 

Region
Ile-de-France > Ile-de-France > Hauts-de-Seine

Activity type
Research Organisations

Links
[Contact the organisation](#)  [Website](#) 
[Participation in EU R&I programmes](#) 
[HORIZON collaboration network](#) 

Total cost
€ 356 550,00

 **THIRD-PARTY** 

UNIVERSITE DE PICARDIE JULES VERNE

 France
Net EU contribution

€ 136 350,00

Address

CHEMIN DU THIL

80025 Amiens 

Region

Hauts-de-France > Picardie > Somme

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



ZURCHER HOCHSCHULE FUR ANGEWANDTE WISSENSCHAFTEN

 Switzerland

Net EU contribution

€ 390 700,00

Address

GERTRUDSTRASSE 15

8401 Winterthur 

Region

Schweiz/Suisse/Svizzera > Zürich > Zürich

Activity type

Higher or Secondary Education Establishments

Links

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

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

[HORIZON collaboration network](#) 

Total cost

€ 390 700,00



KARLSRUHER INSTITUT FUER TECHNOLOGIE

 Germany

Net EU contribution

€ 327 500,00

Address

KAISERSTRASSE 12

76131 Karlsruhe 

Region

Baden-Württemberg > Karlsruhe > Karlsruhe, Stadtkreis

Activity type

Higher or Secondary Education Establishments

Links

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

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

[HORIZON collaboration network](#) 

Total cost

€ 327 500,00



UNIVERSITY OF NEW SOUTH WALES

 Australia

Net EU contribution

€ 0,00

Address

ANZAC PARADE

2052 Sydney 

Activity type

Higher or Secondary Education Establishments

Links

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

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

[HORIZON collaboration network](#) 

Total cost

€ 434 550,00

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Permalink: <https://cordis.europa.eu/project/id/875489>

European Union, 2025

