GHz nanoscale electrical and dielectric measurements of the solid-electrolyte interface and applications in the battery manufacturing line

Fact Sheet

Project Information

NanoBat
Grant agreement ID: 861962

DOI
10.3030/861962

Funded under
INDUSTRIAL LEADERSHIP - Leadership in enabling and industrial technologies - Advanced materials

Total cost
€ 4,966,912.50

EU contribution
€ 4,966,912.50

Closed project

Start date
1 April 2020

End date
31 March 2023

Coordinated by
KEYSIGHT TECHNOLOGIES GMBH
Austria

This project is featured in...
Project description

Improving the performance and safety of lithium–ion battery cells

The growing global energy demands have been driving innovation in energy storage methods, a promising one being lithium–ion batteries. In battery production, the electrolyte decomposes on the electrode to form the solid electrolyte interphase (SEI). This layer, which is about 50 nanometres thick, is fragile and determines to a large extent the state of health and the life cycle of the cell. The EU-funded NanoBat project is developing a toolbox that contains ultrafast high-frequency methods that can test and quantify electrical processes at the SEI, several orders of magnitude better than currently available techniques. The new techniques will improve cell production and testing, creating multiple benefits for manufacturers and customers. These include reduced waste and energy consumption as well as longer-lasting batteries that demonstrate improved thermal runaway.

Fields of science

natural sciences > chemical sciences > electrochemistry > electric batteries
natural sciences > physical sciences > electromagnetism and electronics
natural sciences > chemical sciences > inorganic chemistry > alkali metals
natural sciences > physical sciences > optics > spectroscopy

Keywords

microscopy, microwaves, battery, GHz technology, nanotechnology

Programme(s)
Topic(s)

DT-NMBP-08-2019 - Real-time nano-characterisation technologies (RIA)

Call for proposal

H2020-NMBP-TO-IND-2018-2020

See other projects for this call

Sub call

H2020-NMBP-TO-IND-2019

Funding Scheme

RIA - Research and Innovation action

Coordinator

KEYSIGHT TECHNOLOGIES GMBH

Net EU contribution
€ 762 500,00

Address
Europaplatz 2/1/2
1150 Wien
Austria

Region
Ostösterreich > Wien > Wien

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

Links
Participants (12)

RUHR-UNIVERSITAET BOCHUM

Germany

Net EU contribution
€ 237 490,00

Address
Universitaetsstrasse 150
44801 Bochum

Region
Nordrhein-Westfalen > Arnsberg > Bochum, Kreisfreie Stadt

Activity type
Higher or Secondary Education Establishments

Links

Contact the organisation  
Website  
Participation in EU R&I programmes  
HORIZON collaboration network  

Other funding
€ 0,00

QWED SPOLKA Z OGRANICZONA ODPOWIEDZIALNOSCIA

Poland

Net EU contribution
€ 368 750,00

Address
Ulica krzywickiego 12 lok 1
02 078 Warszawa
Yes

Region
Makroregion województwo mazowieckie > Warszawski stołeczny > Miasto Warszawa

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

Links
Contact the organisation  Website  Participation in EU R&I programmes  HORIZON collaboration network

Other funding
€ 0,00

UNIVERSITAT LINZ
Austria
Net EU contribution
€ 427 505,00

Address
Altenberger strasse 69
4040 Linz

Region
Westösterreich > Oberösterreich > Linz-Wels

Links
Contact the organisation  Website  Participation in EU R&I programmes  HORIZON collaboration network

Other funding
€ 0,00

PLEIONE ANONYMI ETAIRIA KAINOTOMONENERGEIAKON EFARMOGON
Greece
Net EU contribution
€ 349 375,00

Address
Terma patriarchou grigorioy kai neapoleos o
153 10 Agia paraskevi
SME  Yes
Region
Αττική > Αττική > Βόρειος Τομέας Αθηνών
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
Other funding
€ 0,00

EIDGENOSSISCHES INSTITUT FUR METROLOGIE METAS
Switzerland
Net EU contribution
€ 774 827,50
Address
Lindenweg 50
3084 Wabern
Region
Schweiz/Suisse/Svizzera > Espace Mittelland > Bern / Berne
Activity type
Public bodies (excluding Research Organisations and Secondary or Higher Education Establishments)
Links
Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network
Other funding
€ 0,00
AIT AUSTRIAN INSTITUTE OF TECHNOLOGY GMBH

Austria

Net EU contribution

€ 290 412,50

Address

Gießgasse 4
1210 Wien

Region

Ostösterreich > Wien > Wien

Activity type

Research Organisations

Links

Contact the organisation  Website  Participation in EU R&I programmes  HORIZON collaboration network

Other funding

€ 0,00

---

Fundacion IMDEA Energia

Spain

Net EU contribution

€ 190 937,50

Address

Avenida ramon de la sagra 3
28935 Mostoles madrid

Region

Comunidad de Madrid > Comunidad de Madrid > Madrid

Activity type

Research Organisations

Links

Contact the organisation  Website  Participation in EU R&I programmes  HORIZON collaboration network

Other funding

€ 0,00
TECHNISCHE UNIVERSITAET BRAUNSCHWEIG
Germany
Net EU contribution
€ 401 442,50
Address
Universitaetsplatz 2
38106 Braunschweig
Region
Niedersachsen > Braunschweig > Braunschweig, Kreisfreie Stadt
Links
Contact the organisation  Website  Participation in EU R&I programmes  HORIZON collaboration network
Other funding
€ 0,00

KREISEL ELECTRIC GMBH & CO KG
Austria
Net EU contribution
€ 429 360,00
Address
Kreiselstrasse 1
4261 Rainbach im muhlkreis
SME  Yes
Region
Westösterreich > Oberösterreich > Mühlviertel
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
CENTRO RICERCHE FIAT SCPA
Italy
Net EU contribution
€ 163 500,00
Address
Strada torino 50
10043 Orbassano
Region
Nord-Ovest > Piemonte > Torino
Links
Contact the organisation  Website  Participation in EU R&I programmes  HORIZON collaboration network

EURICE EUROPEAN RESEARCH AND PROJECT OFFICE GMBH
Germany
Net EU contribution
€ 379 875,00
Address
Heinrich-hertz-allee 1
66386 St ingbert
SME  Yes
Region
Saarland > Saarland > Saarpfalz-Kreis
Links
Contact the organisation  Website  Participation in EU R&I programmes  HORIZON collaboration network
UNIVERSIDAD DE BURGOS

Spain

Net EU contribution

€ 190 937,50

Address

Hospital del rey
09001 Burgos

Region

Centro (ES) > Castilla y León > Burgos

Activity type

Higher or Secondary Education Establishments

Links

Contact the organisation Website Participation in EU R&I programmes HORIZON collaboration network

Other funding

€ 0,00

EC signature date 12 March 2020
Last update: 20 July 2023

Permalink: https://cordis.europa.eu/project/id/861962

European Union, 2023