



PROJECT OBJECTIVE

BatWoMan develops **innovative sustainable and cost-efficient Li-ion battery cell production concepts**, paving the way towards carbon neutral cell production within the European Union.

This is pursued via the following objectives:

1. **Sustainable cell manufacturing** with no Volatile Organic Solvents and low carbon footprint by reducing production's main energy consumers
2. **Cost effective production** with more efficient throughput, whilst enabling cells with **longer cycle life**, through digitally-driven 3D electrode patterning
3. **Verification of environmental improvements** through digital tracing throughout the whole manufacturing process chain via a battery passport



BATWOMAN

Carbon Neutral European
Battery Cell Production with Sustainable, Innovative Processes and 3D Electrode Design to Manufacture (BatWoMan)



<https://batwoman.eu/>

HORIZON EUROPE RESEARCH PROJECT

PARTNERS



MEMBER OF BASQUE RESEARCH & TECHNOLOGY ALLIANCE



UNIVERSITÄT
DUISBURG
ESSEN

Offen im Denken



CERTH
CENTRE FOR
RESEARCH & TECHNOLOGY
HELLAS



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COORDINATORS



PROJECT LEAD
Katja Fröhlich
Austrian Institute of Technology

WORK PACKAGE 3 PROCESS OPTIMISATION & MODELLING

Coordinator
Harry Hoster
University of
Duisburg-Essen



Optimization of manufacturing processes and 3-D patterning of electrodes using AI and ML, considering trade-offs between efficiency, performance, and impact.

WORK PACKAGE 1 PROJECT COORDINATION

Managing resources, performing quality control, risk management and communication.



Coordinator
Natalie Bruckmueller
Austrian Institute of
Technology

WORK PACKAGE 4 SOLVENT-REDUCED ELECTRODE PROCESSING

Electrode production with low energy consumption, low carbon footprint, and no VOCs; environmentally friendly water-based slurry preparation and coating process optimization for reduced solvent usage.



Coordinator
Iratxe de Meatz
CIDETEC

WORK PACKAGE 2 SUSTAINABILITY & DIGITALISATION

Coordinator
Mats Zackrisson
Research Institutes of
Sweden



Integration of sustainability and digitalization by providing inputs for production design that meet ambitious environmental, social and economic targets.

WORK PACKAGE 5 ECO-FRIENDLY CELL ASSEMBLY

Coordinator
Bernd Eschelmüller
Austrian Institute of
Technology



Developing sustainable and cost-efficient cell assembly processes through 3D patterning, new drying and filling methods, and optimization of the formation and aging protocols.

WORK PACKAGE 6 INDUSTRIALISATION

Evaluating benefits and industrial scalability of new eco-friendly cell manufacturing technologies, analyzing dry room reduction, cost savings, and industrialization potential.



Coordinator
Susanna Beltrame
SOVEMA

WORK PACKAGE 7 DISSEMINATION

Coordinator
Wilhelm Pflöging
Karlsruhe Institute of
Technology



Dissemination of project results to the scientific community as well as to a wider public audience, and establishment of a framework for exploiting project results, including IPR management.

WORK PACKAGE 8 ELECTRODE MICROSTRUCTURE ANALYSIS

Insights into the surface and intrinsic properties of the electrode microstructure, by analytic techniques, refining the optimization of the innovative dry-based mechanisms



Coordinator
Georgia Kastinaki
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