

Korea-EU Horizon Europe Researchers Networking Forum on Energy & Advanced Mobility

• **Hwamyung Jang**

• **Researcher**

• **Uppsala University**

• **Li ion battery optimization
technology development**

1. Short Introduction of your Organization



New Battery strat-up under preparation



Hwamyung Jang
/ CTO

Researcher – Uppsala University
Director – Northvolt
Researcher – Bosch
PhD – University of Tokyo



Walter Johnsen
/ Interim COO

Senior Associate
Venture Science Associate
PhD – Univ. of Pennsylvania



Kedi Hu
/ Material Engineer

Dry coating expert
PhD – Columbia University
Bachelor – MIT



University of Uppsala

- Since 1477 (The first in Sweden)
- Over 45000 students
- Times Higher Education: 130 (2025) /
QR Chemistry department : 67 (2025)



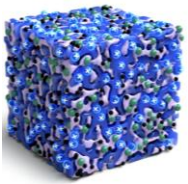
Leiting Zhang

Assistant Professor, Department of
Chemistry - Ångström Laboratory

All solid-state battery and Anode free battery development
Acoustic emission methods for Battery applications
Fully automated robot for pouch cell assembly line



2. Expertise



Next Generation material development and optimization

Strong experiences for developing active materials from conventional liquid Li ion battery to next generation Solid state battery and Lithium metal battery development



Manufacturing process development

Extensive process development such as wet based coating & dry coating process, pre-lithiation technology development, and also next generation process optimization and simplification



Cell design Optimization

Focusing on not only performance enhanced cell design optimization, but also cost reduction-oriented cell design optimization. And next generation battery design such as all solid state battery and Lithium metal, anode free battery design optimization and its prototyping experiences



3. Your Project Idea

Cluster 5 Call 03-2026 (WP2026-2027)

HORIZON-CL5-2026-03-D2-02:

Development of direct recycling processes (BATT4EU Partnership)

Idea:

Advanced battery platform development

- a. Cell chemistry agnostic
- b. Direct recycling from Giga factory manufacturing scrap
- c. Reduce over 70% Greenhouse gas emission
- d. Low CAPEX & OPEX for recycling facility with 50% less Footprint

HORIZON-CL5-2026-10-D2-03:

Integrated Production and Product Development for Next-Generation Lithium-based Batteries for Mobility (BATT4EU and Made in Europe Partnerships)

Idea:

Advanced battery platform development

- a. Lithium metal anode technology
- b. Anode Free concept
- c. Adding minimum amount of Lithium source into Anode by using Pre-lithiation technologies
- d. Better performance & cheaper cell cost structure

Cluster 5 Call 02-2027 (WP2026-2027)

HORIZON-CL5-2027-02-D2-06:

Sustainable and Competitive Cell Production Techniques for Lithium-ion And Sodium-ion Batteries (BATT4EU Partnership)

Idea:

Advanced battery platform development

- a. Cell chemistry agnostic
- b. Optimized battery cell design for current applications
- c. Simplify battery manufacturing process steps over 50%
- d. Over 60% production lead time reduction

HORIZON-CL5-2027-04-Two-Stage-D2-07:

HORIZON-CL5-2027-04-Two-Stage-D2-07: Novel approaches towards next-generation battery concepts, leveraging the enabling role of innovative advanced materials (BATT4EU and IAM4EU Partnerships)

Idea:

Advanced battery platform development

- a. Cell chemistry agnostic
- b. Increase 30% energy density
- c. Reduce 50% manufacturing process step
- d. Reduce over 30% cell cost



4. Profile You are Seeking and Why

Fundamental research partners

- a. Simulation capability for microstructural control of cell design and manufacturing process optimization
- b. Electrolyte optimization for advanced formation & aging process optimization
- c. Advanced analysis capabilities such as SEI analysis

Manufacturing equipment development partners

- d. Dry coating process equipment
- e. Simplified cell assembly equipment
- f. Advanced formation & aging process equipment
- g. Direct recycling process equipment

Test & Validation partners

- h. Over 30 Ah cell validation capability
- i. Large cell Safety test capability



5. Contact Details



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