



Fraunhofer Institute for Silicate  
Research ISC

# PROGRAMM

## Conference on Battery Direct Recycling 2024

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CCW Wuerzburg | 29 – 30 October, 2024

[www.direct-recycling-conference.de](http://www.direct-recycling-conference.de)

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# Organized by

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## Conference Board

Prof. Kristina Edström | Battery 2030+ European research initiative

Dr. Marcel Meeus | Director at Sustesco, Sustainable Energy Services

Dr. Guinevere Giffin | Scientific Head at the Fraunhofer R&D Center Electromobility

# Schedule | Day 1

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- 08:00 Registration  
09:00 Welcome and Conference Opening  
Conference Board & Organizing Committee

## 09:05 SESSION 1 - Policy & Regulations

- 09:10 »Battery 2030+ Roadmap Direct Recycling«  
Marcel Meeus (Susteco), Keynote
- 09:40 »Is the Battery Regulation promoting Direct Recycling?«  
Claude Chanson (Recharge Association)
- 10:00 »Battery Recycling in Europe: status, challenges and the innovative solution«  
Bozorg Khanbaei (BEPA)
- 10:20 »FME BATTERY - a research centre for a sustainable and circular battery  
technology value chain«  
Hanne Andersen (IFE / FME Battery)
- 10:35 »Responsible Battery Production in Europe«  
Esther Laabs (WWF)

## 10:50 SESSION 2 - Recycling Processes 1

- 10:55 »Sustainable routes to recovery and reuse of battery materials«  
Emma Kendrick (University of Birmingham), Keynote
- 11:25 »Where is the Lithium? – An Assessment of Lithium content in the Output  
Fractions from a Water Bath Direct Recycling Process«  
Nora Bartolome (EMPA)

11:45 »Electrochemical methods for selective recovery of critical raw materials from battery recycling wastewater«  
Cleis Santos (Fraunhofer IFAM)

**12:05 Closing session**

**12:10 LUNCH**

### **13:15 SESSION 3 - LCA & Digitalization**

13:20 »From digital twins of battery manufacturing to digital twins of battery recycling«  
Alejandro Franco (Université de Picardie Jules Verne), Keynote

13:50 »Direct recycling of black mass: Challenges in the selection of mechanical separation processes«  
Marco Gleiß (KIT)

14:10 »A techno-economic model for integrating direct scrap recycling in battery gigafactories«  
Robert Schroeder (RWTH Aachen)

14:30 »Exchange and Integration of Carbon Footprint Data in a Digital Battery Passport: A Step Towards Sustainable Battery Recycling«  
Frauke Hänel (Ipoint)

**14:50 COFFEE BREAK**

### **15:15 SESSION 4 - Design for Recycling**

15:20 »Design for sustainability as a powerful tool to enhance direct recycling of End-of-Life batteries«  
Nestor Antuñano (CIC Energigune), Keynote

15:50 »Supraparticles as information-providing additives and Reversible interfaces and dispersible particles in direct recycling«  
Karl Mandel (FAU Erlangen-Nürnberg) & Tobias Kraus (INM)

- 16:20 »Insights for EV Pack Design«  
Jacqueline Edge (Imperial College London)
- 16:40 »Recycling of solid-state batteries—challenge and opportunity  
for a circular economy?«  
Oliver Clemens (University Stuttgart)

**17:00 CLOSING SESSION DAY 1**

**17:10 POSTER SESSION AND NETWORKING**

**19:30 CONFERENCE DINNER**



# Schedule | Day 2

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08:00 Registration  
09:00 Welcome (Start Day 2)

## **09:05 SESSION 5 - EU INITIATIVES**

09:10 »Battery 2030+ Initiative«  
Kristina Edström, Battery 2030+ Initiative

09:30 »A circular and chemistry-neutral approach for recycling and recovery of battery waste feeds: the RENOVATE project«  
Eliaana Quartarone (Università di Pavia)

09:50 »Revolutionizing low-value LFP Battery Waste Recycling - Project ReUSE (Horizon Europe)«  
Marco Schott (Fraunhofer ISC)

10:10 »Towards (direct) recycling of LFP batteries: overview of the ACROBAT project results«  
Jeroen Spooren (VITO)

10:30 »The project RecyLIB – Closing the Loop for LFP/Graphite and NCM/Graphite Cells via a Direct Recycling Route«  
Felix Nagler (Fraunhofer ISC)

**10:50 COFFEE BREAK**

## **11:05      SESSION 6 - RECYCLING PROCESSES 2**

- 11:10      »Advances in Direct Recycling Methodology: Lithium Battery Neutralization, Cathode-Healing, and Battery Deactivation«  
Steve Sloop (Onto Technology), Keynote
- 11:40      »Direct recycling of electrode production scraps from Li-ion cell manufacturing at BMW«  
Michael Wagner (BMW Group)
- 12:00      »Direct Battery Recycling via Electrohydraulic Fragmentation«  
Andreas Bittner (CellCircle)
- 12:20      »Direct recycle technology is Extraction Cathode & Anode from production scrap«  
Yu Tack Kim (ABR co. Ltd)

## **12:40      CLOSING SESSION**

## **12:45      LUNCH**

## **13:50      SESSION 7 - RECYCLING PROCESSES 3**

- 13:55      »KYBURZ Direct Battery Recycling Processes and Recyclability Score«  
Dawit Ayana (Kyburz)
- 14:15      »Direct recycling of spent NCA cathode active material for Li-ion batteries«  
Abdelfattah Mahmoud (Université Liege)
- 14:35      »Sustainable Direct Recycling of NMC Cathode Active Materials from Lithium-ion Battery Electrode Scraps: Using Green Reagents and Ultrasound Technology«  
Krystal Davis (National Research Council Canada)



- 14:55 »Tailored Direct Recycling Processes:  
Paving the Way for a Sustainable Future«  
Andreas Fleger (Fraunhofer ISC)
- 15:15 »Direct recycling of Lithium batteries at the end of life to recover active  
materials to be reused in new batteries«  
Claude Guery (Université de Picardie Jules Verne)

**15:35 COFFEE BREAK**

**15:50 SESSION 8 - PROCESSES 4**

- 15:55 »Direct Recycling of Graphite from Spent Batteries and Production Scraps for  
the Development of a Circular and Sustainable Economy«  
Ane Muguruza (CIDETEC Energy Storage)
- 16:15 »Conceptual design and experimental evaluation of dismantling methods for  
cylindrical battery cells«  
Philipp Rittlewski (Fraunhofer IPA)
- 16:35 »Sustainable direct recycling of graphite active material: process,  
characterization and impact of thermal treatment«  
Jan Martin (ZSW)
- 16:55 »Selective flocculation of cathode particles to improve direct recycling of  
Li-ion battery materials«  
Natalia Araya-Gómez (Aalto University)
- 17:15 Closing Remarks & Poster Prize
- 17:45 Meet-up Tour

**18:00 Lab Tour FZEB Battery Labs @Fraunhofer ISC**