



INTERNATIONAL BATTERY PRODUCTION CONFERENCE

7 to 9 November 2023

Preliminary Conference Programme

Event location: Steigenberger Parkhotel Braunschweig, Germany

Day 1 of the conference

07.11.2023

Time									Duration
08:00	Arrival of attendees								01:00
09:00	Welcome		Welcome Talk			Prof. Arno Kwade / Prof. Christoph Herrmann			00:15
09:15	Keynote "Towards a Technologically Sovereign European Battery Value Chain - The R&D Approach of Germany's BMBF"								00:35
09:50	Break								00:10
	Room Maschinenhalle				Room Nimès 1+2				
	Topic	Speaker	Institution	Duration	Topic	Speaker	Institution	Duration	
10:00	Continuous Slurry Mixing	Chair: Kwade		00:45	Material Development and Production	Chair: Melzig		00:45	00:45
	Continuous Processing of Negative LIB Electrodes using an Innovative Compounding System	Kristina Borutzki + Krischan Jeltsch	Fraunhofer FFB + Buss AG	00:15	Graphite Production Technologies for Batteries – State of the Art Review	Bahman Yari	Hatch	00:15	
	Investigations of a continuous dispersion process for paste formulation in the production of lithium-ion batteries and analysis of a cleaning procedure	Kevin Raczka	KIT	00:15	Mechanofusion for lithium-ion battery cathode manufacturing	Guo Jung Lian	University of Sheffield	00:15	
	Continuous slurry mixing process in large-scale electrode production.	Adrian Spillmann	Bühler AG	00:15	Synthesis of layered oxide cathode active materials from secondary resources	Martin Menzler	Fraunhofer IST	00:15	
10:45	Discussion								00:15
11:00	Break								00:15
11:15	3D-printing and structuring of electrodes	Chair: Kandula	Institution	00:45	Machine Learning in Battery Cell Production	Chair: Dröder	Institution	00:45	00:45
	Targeted Structuring of High-Energy Lithium-Ion Electrodes – An Innovative Method Without Loss of Material	Michael Bredekamp	TU Braunschweig	00:15	Framework and demonstrator for AI-based quality assessment in battery cell production: an implementation in KlproBatt	Xukuan Xu + Michael Möckel	Technische Hochschule Aschaffenburg	00:15	
	3D-printed hydroborate based all-solid-state sodium-ion batteries	Jan Thomas	Fraunhofer IFAM	00:15	Improving Yield Through AI/ML Driven Automated Rootcause Analysis in EV manufacturing	Kalle Ylä-Jarkko	Elisa IndustriQ	00:15	
	Dry Coating - Is it Really a Benefit for More Cost Efficient and Sustainable Battery Production?	Noah Rieple	P3 automotive GmbH	00:15	Large area evaluation of jelly roll alignment using machine learning methods	Andreas Kopp	Hochschule Aalen	00:15	
12:00	Discussion								00:15
12:15	Lunch break								01:00
13:15	Postersession								01:30
14:45	Keynote „CIDETEC towards a digitalization of the battery manufacturing plant“				Dr. Elixabete Ayerbe (CIDETEC)			00:35	
15:20	Keynote "Ultra fast charge and discharge in seconds with Supercapacitors and Superbatteries"				Dr. Linus Froböse (Skeleton Technologies)			00:35	
15:55	Break								00:15
16:10	Traceability and Ontologies in Battery Cell Production	Chair: Garnweltner	Institution	00:45	Material Production and Characterization	Chair: Zellmer	Institution	00:45	00:45
	Traceability in battery production: Enabling deep insights into the correlation between process and product parameters	Hai Yen Tran	ZSW	00:15	Effect of the PEO molecular weight on the composite cathode performances	Maica Morant	CIC energi gune	00:15	
	Battery Value Chain Ontology (BVCO) – Towards an Ontology for Lithium-Ion-Batteries in a Circular Economy	Lukas Gold	Fraunhofer ISC	00:15	Advantages of Particle Size and Shape Analysis for Battery Manufacturing Performance through the use of Dynamic Imaging Technology	Colin Dalton	JM Canty	00:15	
	Image-based Traceability in Electrode Production	Johannes Lindenblatt	TU München	00:15	Design to cost Ni, Mn and Co-based battery materials for EVs mass adoption in Europe	Guillaume Lefèvre	Umicore	00:15	
16:55	Discussion								00:15
17:10	Break								00:15
17:25	Innovations in dry and wet electrode production	Chair: Kwade	Institution	01:00	Recycling I (Disassembly and environmental impact)	Chair: Yagmurcu	Institution	01:00	01:00
	Exploring the IR Drying Process in Li-Ion Battery Electrodes; an experimental and computational chemistry approach	Larisa von Riewel	Hereaus	00:15	Process Development and Characterization for Automated Disassembly of End-of-Life Lithiumion Batteries Achieving Efficient Recycling	Shubiao Wu	TU Braunschweig	00:15	
	Multilayer slot coating – Opportunities for Battery Electrodes	Harald Doell	TSE Troller AG	00:15	Closing The Loop For Lithium-Ion Batteries In Europe? Opportunities And Challenges	Nils Steinbrecher	TES-AMM	00:15	
	Improvement of dry electrode manufacturing with powder characterization	Salvatore Pillitteri	Granutools	00:15	A modular demo disassembly of retired electric vehicle battery	Kai Liang Tan	ARTC	00:15	
	Investigation of Electrochemical Performance and Morphology of Multilayer Electrodes with Graded Porosity	Fatjon Maxharraj	Fraunhofer IKTS	00:15	Challenges and Strategies for Sustainable Recycling of Lithium-Iron-Phosphate-Batteries (LFP)	Nils Wiczorek	Stiftung GRS Batterien	00:15	
18:25	Discussion								00:15
18:40	"Optimizing Battery Production Costs: Introducing Kostentool Ekozell"				Kashfia Mahin, Prof. Arno Kwade			00:20	
19:00	Apero								

Day 2 of the conference

08.11.2023

Time									Duration
08:30	Keynote "Raw Materials for Battery Production – Opportunities and Challenges" Prof. Aubrey Mainza (University of Cape Town)								00:35
09:05	Keynote "Productivity vs. Flexibility: Resolving the Conflict of Objectives Through Agile Battery Cell Production" Prof. Jürgen Fleischer (KIT, wbk)								00:35
09:40	Break								00:10
	Room Maschinenhalle				Room Nimès 1+2				
	Topic	Speaker	Institution	Duration	Topic	Speaker	Institution	Duration	
09:50	Solvent-free and Solvent-reduced Electrode Production	Chair: Kwade		00:45	Sustainability in Battery Cell Production	Chair: Spengler		00:45	00:45
	Printing technology as green alternative for Li Ion Battery electrode production	Daniela Fenske	Fraunhofer IFAM	00:15	A blockchain platform demonstrator to increase transparency and to enhance more sustainable battery material value chains	Maximilian Rolinck	TU Braunschweig	00:15	
	Assessment of high-mass-loading NMC and graphite electrodes produced via dry electrode manufacturing	Edouard Quérel + Valentin Dolder	Empa, Bühler AG	00:15	Advancements in Cost-Efficient and Sustainable Li-Ion Battery Manufacturing: Insights from the BatWoMan Project	Bernd Eschelmüller	Austrian Institute of Technology GmbH	00:15	
	Solvent-free process for the roll-to-roll production of nickel-rich cathodes for LIB	Alice Hoffmann	ZSW	00:15	A critical evaluation of system implications on the environmental targets of the new EU Battery Regulation	Steffen Blömeke	TU Braunschweig	00:15	
10:35	Discussion								00:15
10:50	Postersession								01:30
12:20	Lunch break								01:00
13:20	Keynote "Resilience and sustainability of the European battery ecosystem" Dr. Torsten Brandenburg (BMW)								00:35
13:55	Keynote "CEA battery activities : What is the right R&D scale to serve a growing industry?" Dr. Yvan Reynier (CEA)								00:35
14:30	Break								00:10
14:40	Electrode, Cell and Module Diagnostics	Chair: Schilde	Institution	00:45	Characterization, Formation and Aging	Chair: Kurrat	Institution	00:45	00:45
	Inline X-ray Metrology for Battery Cell Production – Possibilities, Limits and Contribution to Process Improvements	Hagen Berger	Exacom GmbH	00:15	Combined Machine Learning and Electrochemical Impedance Spectroscopy for Battery Degradation Analysis	Binbin Zhu	TU Braunschweig	00:15	
	Detecting and modeling defect structures in battery cells	Alexej Telegin	Keysight Technologies	00:15	Investigation of Li Plating and Fast Charging for Li-Ion Batteries with a Physico-chemical Modeling Approach Complemented by Electrochemical and Optical Operando Experiments	Niklas Bless	TU Braunschweig	00:15	
	Why the Xray source matters for high-resolution CT	Mats Sjöstedt	Excillum AB	00:15	What conditions have to be met for EIS-Measurements to be valid? General remarks from the field	Julia Berlin	BioLogic	00:15	
15:25	Discussion								00:15
15:40	Inline-analysis and Water Effects in Electrode Production	Chair: Banov	Institution	00:45	Production of SSB Cells	Chair: Michalowski	Institution	00:45	00:45
	Rheological Design of Battery Electrode Slurries	Carl Reynolds	University of Birmingham	00:15	Influence of Pressure in ASSB Assembly: Scalable Concepts to Improve Cell Performance	Louis Wach	TU München	00:15	
	Inline Quality Measurement in the Continuous Mixing Process as a Key for a Steady and High Product Quality	Thorsten Stirner	Coperion GmbH	00:15	Development of a scalable production process of sulfide-based solid electrolytes and characterization of product properties	Michael Grube	Fraunhofer IST	00:15	
	Post-drying: simulation and experiments of micro- and macro-scale mass transport	Thilo Heckmann	KIT	00:15	Challenges of Compressing Sulfide-Based Separators for Solid-State Batteries	Carina Amata Heck	TU Braunschweig	00:15	
16:25	Discussion								00:15
16:40	Break								00:10
16:50	Industrial Session	Chair: Herrmann	Institution	00:40	Components for Next-Generation Batteries	Chair: Michalowski	Institution	00:45	00:45
	Production of dosable structured dry battery electrode (DBE) mixes in a one-pot process with Eirich intensive mixers	Stefan Gerl	Eirich	00:10	Transport Properties of Hard Carbons	Giar Alsofi	University of Birmingham	00:15	
	Boosting Efficiency and Sustainability: Netzsch's Pioneering Techniques in LFP and LMFP Battery Production	Maximilian Münzner	Netzsch	00:10	Industry-near processability of sulfurized polyacrylonitrile based electrodes	Robin Moschner	TU Braunschweig	00:15	
	Introducing the Center of Excellence Battery: Cell- and Battery Development for the Volkswagen-Group	Dominik Koll	VW	00:10	Thin film lithium metal anodes for solid-state batteries manufactured via sputter deposition	Julian Brokmann	Fraunhofer IST	00:15	
	Staying at the Edge of Time: From Analytical Instruments Manufacturer to Integrated Solutions Provider	Julia Berlin	Biologic	00:10					
17:35	Discussion								00:15
17:50	Conversion for dinner				Innovation culture in battery technology	Jan Diekmann	Custom Cells	00:20	00:20
18:10					Plenary Discussion	Prof. Arno Kwade / Prof. Christoph Herrmann	Various speakers	00:45	00:45
18:55	Break								00:35
19:30	Gala Dinner								

Day 3 of the conference

09.11.2023

Time							Duration		
08:30	Keynote „Challenges for battery recycling in Europe“ Dr. Pieter Verhees (Umicore)						00:35		
09:05	Break						00:10		
	Room Maschinenhalle			Room Nimès 1+2					
	Topic	Speaker	Institution	Duration	Topic	Speaker			
09:15	Safety in Production and Use	Chair: Lienesch		00:30	SEMINAR 09:15-11:00 Introduction, material overview & electrode production	Arno Kwade	01:45		
	Health and Safety in Battery Cell Production	Martin Föhse	Pilz GmbH und Co. KG	00:15					
	Comparison of Thermal Runaway Early Detection Using Different Electrical Measurement Methods	Torben Jennert	TU Braunschweig	00:15					
09:45	Discussion						00:15		
10:00	Break						00:15		
10:15	(Urban) Factories, Upscaling and Supply Chain	Chair: Herrmann		01:00					
	Comparison of battery supply chains regarding their environmental and socio-economic impacts	Jan-Linus Popien	TU Braunschweig	00:15					
	Closing the Gap between Lab Scale Development and Industrial Technology: Cathode Materials Pilot-Plant "Powder-Up!"	Peter Axmann	ZSW	00:15					
	Procedure for considering the required flexibility in production operations during factory planning using the example of the Fraunhofer Research Institution for Battery Cell Production FFB	Natalja Rube + Jakob Palm	Fraunhofer FFB	00:15					
	A scalable assessment framework for estimating battery resource potentials in urban environments	Katja Knecht	TU Braunschweig	00:15			Break		00:15:00
11:15	Discussion						00:15		
11:30	Recycling II (Materials)	Chair: Zetzener		01:00	SEMINAR 11:15-12:00 Introduction, material overview & electrode production	Arno Kwade	01:00		
	From end-of-life batteries to high quality graphite - developing a recycling process focused on anodic materials	Fernanda Padilha Noronha + Anna Rollin	TU Braunschweig	00:15					
	Transforming Waste into Opportunity: Sustainable Black Mass Recycling and Beyond	Alexander Zeugner	HC Starck	00:15					
	Comprehensive model-based environmental impact evaluation of recycling process chains	Abdur-Rahman Ali	TU Braunschweig	00:15					
	Electrochemical performance of active materials from spent LIBs regenerated with a direct recycling approach	Mariena Mancini	ZSW	00:15					
12:30	Discussion						00:15		
12:45	Poster Prizes Prof. Arno Kwade / Prof. Christoph Herrmann						00:15		
13:00	Digital tour Battery LabFactory Braunschweig						00:30		
13:30	Lunch								
Assigned slots	Tours to the Battery LabFactory Braunschweig								