

# **Battery Engineering 2017**

Held at AABC Europe 2017

Mainz, Germany  
31 January 2017

ISBN: 978-1-5108-4004-1

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571



**Some format issues inherent in the e-media version may also appear in this print version.**

Copyright© (2017) by Cambridge EnerTech  
All rights reserved.

Printed by Curran Associates, Inc. (2017)

For permission requests, please contact Cambridge EnerTech  
at the address below.

Cambridge EnerTech  
Cambridge Innovation institute  
250 First Avenue  
Suite 300  
Needham, MA 02494  
USA

Phone: 781-972-5400  
Fax: 781-972-5425

[ce@cambridgeenertech.com](mailto:ce@cambridgeenertech.com)

**Additional copies of this publication are available from:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: 845-758-0400  
Fax: 845-758-2633  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)



R&D SYMPOSIUM 4

## Battery Engineering

31 January 2017 | Congress Centrum Mainz | Mainz, Germany

ENGINEERING

Part of the 7th Advanced Automotive Battery Conference Europe

TUESDAY, 31 JANUARY

### LITHIUM-ION CELL PRODUCTION

- 7:30**      **Symposium Registration and Morning Coffee**
- 8:30**      **Chairperson's Opening Remarks**  
*Arno Kwade, Ph.D., Professor, Chemical Engineering, Materials Engineering, Mechanical Engineering, Technische Universität Braunschweig*
- 8:35**      **Determination of Process-Structure-Performance Correlations and Development of Alternative Production Processes by the German Cell-Production Research Cluster "ProZell" 1**  
*Arno Kwade, Ph.D., and Henrike Bockholt, Ph.D., Materials Engineering, Chemical Engineering, Automotive Systems Engineering, Technische Universität Braunschweig*
- 8:55**      **Challenges of High-Quality and High-Performance Cell Stacking 12**  
*Jürgen Fleischer, Ph.D., Manager of Machines, Equipment and Process Automation, Karlsruhe Institute of Technology*
- 9:15**      **Environmentally-Friendly Manufacturing of Li-Ion High-Capacity/High-Voltage Electrodes via Aqueous Processing 21**  
*Idoia Urdampilleta, Head of Materials for Energy Unit, IK4-CIDETEC Research Center*
- 9:35**      **Experiences in Prototyping Li-Ion Cells for Automotive Applications 31**  
*Andreas Huth, Ph.D., Manager Prototyping, Volkswagen Varta Microbatteries Forschungsgesellschaft mbH & Co KG*
- 9:55**      **Q&A**
- 10:10**     **Grand Opening Coffee Break with Exhibit & Poster Viewing**

Sponsored by  
**nature  
energy**

### BATTERY LIFE, DESIGN, SIMULATION, AND TESTING

- 11:00**     **Chairperson's Remarks**  
*Masato Origuchi, Chief Battery Engineer for EV/HEV, Renault*
- 11:05**     **ZOE Battery Durability, Field Experience and Future Vision 40**  
*Bruno Delobel, Ph.D., Electrochemistry Junior Expert, Renault*
- 11:25**     **Methods for Aging Simulation and Reliability Prediction in Automotive Cells and xEV Battery Systems 54**  
*Joerg Keller, Ph.D., Manager, RD/EKI, Daimler AG*
- 11:45**     **Volume Change from Materials to Cell Level and Its Influence on Battery Lifetime 63**  
*Andreas Jossen, Ph.D., Professor, Electrical Engineering and Information Technology, Technical University Munich*
- 12:05**     **Detecting, Diagnosing, and Controlling Degradation in Lithium-Ion Battery Packs 75**  
*Gregory Offer, Ph.D. Senior Lecturer, Mechanical Engineering, Imperial College London*



R&D SYMPOSIUM 4

## Battery Engineering

31 January 2017 | Congress Centrum Mainz | Mainz, Germany

ENGINEERING

Part of the 7th Advanced Automotive Battery Conference Europe

**12:25**      **The Influence of Aging of LIB on Cell Safety: A Comprehensive Approach Combining Electrochemical Characterization, Accelerating Rate Calorimetry and Post-Mortem Analysis**      **89**  
*Falko Schappacher, Ph.D., Head of Safety and Life Division, MEET, Muenster University*

**12:45**      **Q&A**

**13:00**      **Networking Lunch**

**14:15**      **Dessert Refreshment Break with Exhibit & Poster Viewing**

### LITHIUM-ION BATTERY SAFETY AND ABUSE TOLERANCE

**15:00**      **Chairperson's Remarks**  
*Arnold Lamm, Ph.D., EU-Projects and Energy Systems Analyses, Daimler AG*

**15:05**      **Requirements and Approaches for LIB regarding Vehicle Safety**      **102**  
*Rainer Justen, Manager Vehicle Safety S-Class, MSA, AMG, E-Mobility, Mercedes-Benz Cars Development, Daimler AG*

**15:25**      **Assessment of Battery Testing Methods from a Policy-Making Perspective**      **111**  
*Andreas Pfrang, Ph.D., Scientific Officer, Joint Research Centre, Directorate for Energy, Transport & Climate, European Commission*

**15:45**      **Safety Testing for xEV Batteries – Comparison of Test Standards and Validation Procedures**      **136**  
*Michael Geppert, Head of Laboratory, TÜV SÜD Battery Testing GmbH*

**16:05**      **Battery Safety Testing - The Status of Testing for Propagation of Single Thermal Runaway Cell Failures**      **148**  
*Daniel Doughty, Ph.D., President, Battery Safety Consulting, Inc.*

**16:25**      **Beyond Teardown - AVL Series Battery Benchmarking**      **162**  
*Wenzel Prochazka, Ph.D., Product Manager, Global Battery Management Team, AVL List GmbH*

**16:45**      **Q&A**

**17:05**      **Networking Reception with Exhibit & Poster Viewing**

**18:05**      **Close of Day**

Sponsored by

