

VDI

International VDI Conference

Battery Recycling

June 14–15, 2018, Munich, Germany

- Frameworks: European Legislation and worldwide Implications
- Strategic Perspectives and Considerations
- Areas of Battery Application
- The Interplay between Technology and Economy
- Battery Life Cycle: Second Use, Markets and Quality of Materials
- Plant Engineering: Optimization, Business Cases
- Product Lifecycle Management

+ Parallel running Conference: Efficient WEEE Recycling

Meet international experts from:

Bloomberg
NEW ENERGY FINANCE

Creation Inn
SOLUTION PROVIDER

DERA Deutsche Rohstoffagentur
Bundesanstalt für Geowissenschaften und Rohstoffe

Deutsche Post DHL
Group

EBRA
EUROPEAN BATTERY RECYCLING ASSOCIATION

ecobat
EUROPEAN CHARGING AND BATTERY ASSOCIATION

envirobat
EcoBatt

Neometals

NREL
NATIONAL RENOVABLE ENERGY LABORATORY

febelauto

RECHARGE
The Advanced Rechargeable & Lithium Batteries Association

REDUX
Smart battery recycling

REFIND
Technologies

REMONDIS
WORKING FOR THE FUTURE

TERRAE

Wood Mackenzie
A VEEKI Business

NOT FINANCED HERE
FINANCING OF BATTERY RECYCLING

An event organized by VDI Wissensforum GmbH
www.vdi-international.com/batteryrecycling

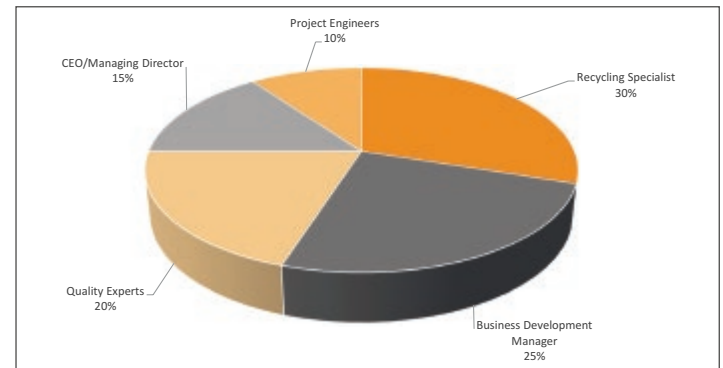


About us

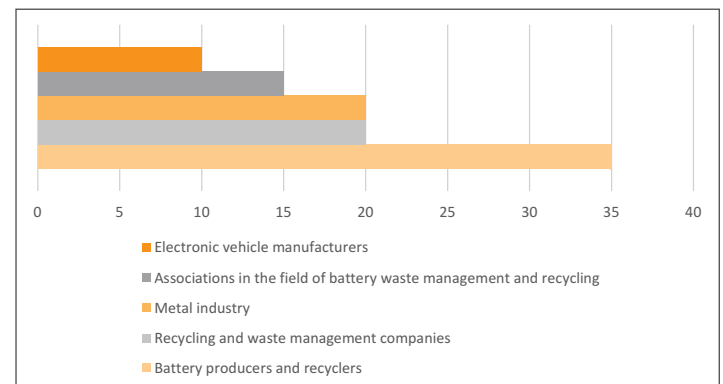


The Association of German Engineers (VDI) is one of the largest technical-scientific associations in Europe. Throughout the years, the VDI has successfully expanded its activities nationally and internationally to foster and impart knowledge about technology-related issues. As a financially independent, politically unaffiliated and non-profit organization the VDI is recognized as the key representative of engineers both within the profession and in public.

Expected Participants according to Functions



Expected Participants according to Industries



09:30 Registration & welcome coffee

10:30 Consolidated chairs' welcome and opening address of parallel running conferences

Conference chair Battery Recycling: Dr. Falko Schappacher, Managing Director, MEET – Münster Electrochemical Energy Technology, Münster University, Germany,
Conference chair Efficient WEEE Recycling: Prof. Dr. Ing. Dr. h.c. Bernd Friedrich, Head of the Institute, IME RWTH Aachen University, Germany

I. EU Policy, Legislation and Overview

11:00 The Role of the EU

- EU legislation on waste batteries and WEEE
 - How to strike a balance between harmonization and national flexibility?
 - Learning from each other in Europe
 - Other tools in the EU circular economy toolbox
- European Commission (DG Growth or DG Environment), speaker tba

11:30 The Batteries Directive Revision: Recycling in a Circular Economy Perspective

- The battery directive as an opportunity to introduce a circular economy perspective
- Influence of changes in the batteries market and technologies on environmental requirements
- Possible options for a new approach of the batteries recycling targets

Dr. Claude Chanson, General Manager, RECHARGE, Belgium

12:00 Rising Commodity Prices and the Role of Recycling

- Commodity prices and raw material supply
- Recycling methods
- Cost of recycling

Dr. James Frith, Energy Storage Analyst, Bloomberg New Energy Finance, United Kingdom

12:30 The Fallacy of Legal Targets

- Collection and treatment of WEEE
- Non harmonized implementation
- Well-meant intentions - poor results
- Is there a way out of here?

Norbert Zonneveld, M.Sc., Executive Secretary, EERA – European Electronics Recyclers Association, The Netherlands

13:00  Lunch

II. Country Reports

14:00 Battery Recycling in Spain: Results, Alkaline Spent Batteries Case

- Battery recycling results in Spain
- Spanish collective schemes
- Current treatments for spent alkaline batteries and their impact on RE
- New treatment for spent alkaline batteries
- Recycling batteries for Circular Economy

Juan M. Pérez, Ph.D., Head of R&D Business Development, co-author: Christophe Kleindienst, Marketing Director, both: Envirobat España SL, Spain

14:30 EV Lithium-Ion Battery Recycling – Current Research Status and Future Activities in USA

- The need for recycling
- Current Li-ion recycling R&D projects in USA
- Technology gaps and future activities

Dr. Ahmad Pesaran Ph.D., Chief Energy Storage Engineer, National Renewable Energy Laboratory; co-author: Samuel Gillard, B.S. Mechanical Engineering, Battery Technology Development Manager, U.S. Department of Energy, USA

15:00 A Systemic View of the Evolution of Electric Vehicle Markets and EV Battery Recycling – Case Finland

- Drivers and hinders of electric vehicle market growth
- Challenges of building a national EV battery recycling solution
- Role of critical raw materials (CRM) in the EV evolution or revolution

D.Sc. (Econ.) Jarkko Vesa, CEO, Not Innovated Here – Laboratory of Creative Destruction, Finland

15:30  Networking & coffee break

16:00 Opportunities and Challenges in the Global Lithium-Ion Recycling Industry – Volumes, Technologies and Industry Players Today and in the Future

- Overview of the lithium-ion battery recycling market
- Technologies and processes
- Players and trends
- Data on batteries available for recycling, raw material and batteries for reuse

Hans Eric Melin, Managing Director, Creation Inn, United Kingdom

II. Battery Production and Raw Materials

16:30 Electric Vehicle Exuberance and Cobalt Demand

- Outlook for electric vehicles and energy storage applications
- Developments in battery technologies
- Impact on cobalt demand
- Cobalt's key supply-side issues
- Price outlook

Gavin Montgomery, Director, Wood Mackenzie, United Kingdom

17:00 The Lithium Market into 2025 and future Demand Drivers

- Price development of lithium
- Current supply and demand
- Global trade of lithium and lithium compounds
- Demand and supply (Scenarios 2015 – 2025)

Dipl. Geol. Michael Schmidt, Research Assistant, Federal Institute for Geosciences and Natural Resources (BGR), Germany

17:30 Extended Producer Responsibility for Batteries of Hybrid & Electrical Vehicles in an Emerging Market

- Legal context and market conditions
- Operational strategies
- Circular Economy targets
- Challenges today and tomorrow

Fredericq Peigneux, Consultant, Febelauto vzw, Belgium

18:00 End of conference day one

19:00 Get-together

At the end of the first conference day we kindly invite you to use the relaxed and informal atmosphere for in-depth conversations with other participants and speakers.

08:30 Registration & welcome coffee

III. Safety, Collection & Sorting**09:00 How a QM-System may help to increase Safety during Storage, Sorting or Processing**

- Quality management and safety management
- Storage, sorting and processing
- Importance of quality management system for safety

Eda Coskun, B.Eng., Quality Manager, Redux Recycling GmbH, Germany

09:30 The Key Factors of successful Collection of Portable Batteries

- How to reach challenging collection targets
- Organization of compliance schemes
- Effective tools for increasing collection
- Safety aspects of battery collection
- Increasing public awareness

Petr Kratochvíl, RNDr., General Manager, ECOBAT s.r.o., Czech Republic

10:00 How REMONDIS is coping with the Waste Stream – Li-Ion Batteries

- Specification of the RETRON system
- State of the art transport container
- Gas management system in detail according to ADR 2019 regulations (M307)
- Safe storing of li-ion batteries for different customers

Robert Sonnenschein, General Manager, co-authors: Christian Kuerpick and Lukas Fast, all: REMONDIS Industrie Service GmbH & Co. KG, Germany

10:30  Networking & coffee break

IV. Battery Recycling Technologies**11:00 Battery Recycling in Europe – Present and Future**

- Actual state of play of the European battery recycling industry
- Existing battery recycling processes
- New challenges with e-Mobility
- The revision process of the EU Battery Directive
- Future developments

Dr. Ir. Alain Vassart, Secretary General, European Battery Recycling Association ivzw/aisbl, Belgium

11:30 Lithium-Ion Battery Recycling

- Circular approach for battery materials
- Recreation of value in lithium-ion battery recycling
- Very safe processing of spent lithium-ion batteries
- Outstanding environmental record

Christian Hanisch, CEO, Duesenfeld GmbH, Germany

12:00 Industrial Scale EOL (X)EV Battery Recycling – A Sustainable Closed Loop

- Global approach towards a sustainable xEV industry
- Industrial scale developments vs research
- Closed loop approach for key metals in batteries

Umicore Battery Recycling, Germany

12:30  Lunch

13:30 Battery Recycling@TerraE

- Growth plan of TerraE
- Industry Consortium Fab4Lib
- Importance of recycling

Holger Gritzka, CEO, TerraE Holding GmbH, Germany

V. Innovative Technologies

14:00 New Take on Battery Sorting and Collection – Artificial Intelligence and Refund Machines

- Artificial intelligence in battery sorting – strengths and weaknesses
- Lessons learned in battery sorting
- Refund machines to raise public awareness and create collection incentives
- Lessons learned from the Battery Refund Machine pilot project
- Future challenges and opportunities

Johanna Reimers, M.Sc., CEO, Refind Technologies AB, Denmark

14:30 Sustainable End of Life Stewardship for Li-Ion Batteries

- Li-Ion battery recycling
 - Value-adding strategy
 - Modular, compact plant with low capex and high ROI
 - Operating benefits and secure supply chain
 - Sustainable process with small environmental footprint
- Michael Tamlin, B. Sc., Chief Operating Officer, Neometals Ltd, Australia

15:00 E-Mobility, Batteries and Logistics Solutions for the Automotive Industry

- Resulting changes and challenges for logistics
- E-mobility and battery logistics at Deutsche Post DHL Group
- Use cases and success factors

Maurin Broil, M.A., Senior Expert Business Development, Deutsche Post DHL Group, Germany

15:30 Conference chair's closing remarks

15:45 End of conference



International VDI Workshop

Digital Transformation and the Recycling Industry

Workshop Chair:

Jan Pannenbäcker, CEO, schrott24 GmbH, Austria

Date and venue:

June 13, 2018
Munich, Germany

Time:

10:00 – 16:00

CONTENT

"Uber, the world's largest taxi company, owns no vehicles. Facebook, the world's most popular media owner, creates no content. Alibaba, the most valuable retailer, has no inventory." Ford sells 20 times more cars than Tesla, but is considered a less valuable company. Something is happening.

We see most of these developments coming from B2C markets and slowly fading into B2B. While the recycling industry hasn't seen a lot of digitalization activities yet, there are signs that this is about to change.

An increasing distribution of powerful technology combined with increasingly tighter and faster connections and networks between humans, organizations and things makes space for innovation to happen. At an accelerated pace business models, value chains and eventually whole industries are transformed. Industry leaders cannot rely on their dominance anymore and even young innovators with little resources have the opportunity to build something with profound impact.

This workshop is a hands-on course on how to structurally turn ideas into business models and validate these in order to turn them into viable business opportunities. It's an introduction to startup and innovation methodologies that allow to get ideas on the road, test within hours or days and show how to iterate in order to get to product-market fit.

Kick-off

- Overview of some general trends
- Case studies of industry transforming business models
- Developments in the recycling industry

Interactive workshop:

Highly interactive hands-on session with Business Model Canvas and other innovation methodologies

International VDI Conference 2018

Efficient WEEE Recycling

Conference chair:

Prof. Dr. Ing. Dr. h.c. Bernd Friedrich, Head of the Institute, IME RWTH Aachen University, Germany

Date and venue:

June 14 – 15, 2018
Munich, Germany

The following topics will be discussed:

- European Legislation and strategic Perspectives
- Innovative Recycling Technologies
- Country Reports and Best Practice
- Supply Chain Management
- Re-Use and Refurbishment of WEEE
- Safety Considerations and Sorting Technologies
- Product Lifecycle Management

Don't miss out
our parallel
running
conference

Meet experts from the following companies:



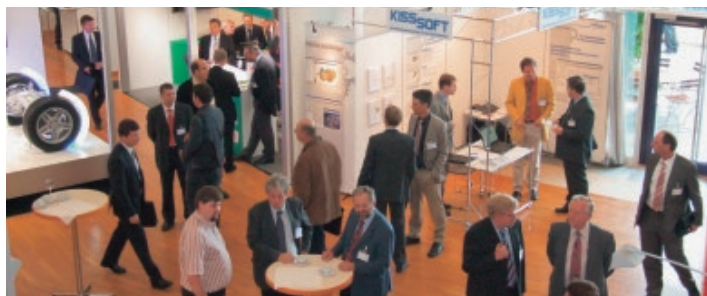
www.vdi-international.com/efficientweee

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If you want to meet with and reach out to the first-rate experts attending this VDI conference and to powerfully present your products and services to the well-informed community of conference participants, please contact:

Isabella Busch

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Phone: +49 211 6214-592
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Become a speaker

Become a speaker at our international VDI Environment and Energy Conferences. Make yourself known in the industry and discuss best practice examples with other international experts. We are looking for speakers on: LNG, Biomass, Waste-to-Energy, Sewage Sludge Treatment.

Please submit your topic to:

Katrin Hinrichsen

Product Manager International Business
Phone: +49 211 6214-125
Email: hinrichsen@vdi.de

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Conference venue

Novotel München Messe
Willy-Brandt-Platz 1
81829 Munich, Germany
Phone: +49 89 99400-0
Email: h5563@accor.com
Website: www.novotel.com/de/hotel-5563-novotel-muenchen-messe/



You will find more hotels
close to the venue at
www.vdi-wissensforum.de/hrs

Hotel room reservation: A limited number of rooms has been reserved for the benefit of the conference participants at the Novotel München Messe, +49 89 99400-0, h5563@accor.com. Please refer to "VDI Conference". For more hotels: www.vdi-wissensforum.de/hrs

VDI Wissensforum service package: The conference package includes the conference documents (online), beverages during breaks, lunch and the get together on June 14, 2018.

Conference attendance conditions and terms: By way of your registration you accept the conference attendance conditions and terms of VDI Wissensforum GmbH as binding. Any cancellation of your registration must be made in writing. We will charge you only an administrative fee of € 50.00 plus German VAT if you cancel your registration earlier than 14 days ahead of the conference date. Any cancellation that reaches us after this deadline will entail the conference attendance fee as stated in our invoice to be charged in full. The date of the post office stamp of your written cancellation will be the decisive criterion. In that case, we will gladly mail you the conference documents on request. Subject to agreement, you may name a substitute participant. Individual parts and sections of conferences and seminars cannot be booked. You will be informed without delay if an event has to be cancelled for unforeseeable reasons. In that instance, you will be entitled only to a refund of your conference attendance fee if already paid. We reserve the right to exchange speakers and/or change the program sequence in exceptional cases. In any case, the liability of VDI Wissensforum GmbH is restricted exclusively to the conference attendance fee.

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Registration

Battery Recycling



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Yes, I will participate as follows:

Participation Fee + VAT

- VDI Conference June 14-15, 2018**
(06K0902018) € 1,490
- Workshop June 13, 2018**
(06ST902001) € 850
- Package Price**
(conference and workshop) € 2,100

I am interested in sponsoring and/or exhibition

VDI membership no. Title

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