EDINBURGH
9-12 SEPTEMBER 2014

14th European Lead Battery Conference and Exhibition

Conference Programme
Welcome and Registration

Tuesday 9 September

11.00 - 18.00  Pre-Registration
Location: Foyer on Level 0

18.00 - 19.30  Welcome Reception
Location: Exhibition area on Level -2

Registration and Exhibition

Wednesday 10 September

07.30 - 18.00  Registration
Location: Foyer on Level 0

09.00 - 17.00  Exhibition open
Location: Level -2

Exhibitor Lounge open
Location: Menteith Room on Level -1

Session 1

The Global Outlook
Location: Lennox 1 on Level -2

Chair: Andy Bush,
International Lead Association, United Kingdom

09.00  Keynote Presentation
Lead and Global Climate Change Mitigation
Julian Allwood, Reader in Engineering at the University of Cambridge, United Kingdom

09.30  Global Warming and Lead–Carbon Batteries
Patrick Moseley, Advanced Lead–Acid Battery Consortium, USA and David Rand, CSIRO Energy Flagship, Australia

10.00  HEV, P–HEV and EV Market — Impact on the Battery Business
Christophe Pillot, Avicenne Energy, France

10.30 - 11.00  Coffee break
Location: Exhibition area on Level -2

Session 1 (continued)

11.00  Enabling Future Recycling of Li-Ion Batteries
Linda Gaines, Center for Transportation Research, Argonne National Laboratory, USA

11.30  Lead Supply Squeeze Fears — Fact or Fiction?
Neil Hawkes, CRU, United Kingdom

12.00  Update on Market and Regulatory Trends Impacting the European Battery Industry
Johannes Dempwolff, EUROBAT, Belgium

12.30  Global Market Trends for Industrial Lead–Acid Batteries
Mitch Bregman, Hollingsworth and Vose, USA

13.00  End of Session 1

13.00 - 14.00  Buffet lunch
Locations:
- Exhibition area on Level -2
- Foyer of the Atrium on the Ground Floor — Level 0
- Platform 5 Café in the Atrium on Level +1

Session 2

The Influence of Carbon on Battery Design
Location: Lennox 1 on Level -2

Attention: Session 2 runs in parallel with Session 3

Chair: Pat Moseley,
Advanced Lead Acid Battery Consortium

14.00  Carbon Additives for Advanced Lead–Acid Battery Applications
Paolina Atanassova, A DuPasquier and M Oljaca, Cabot Corporation, USA

14.25  Influence of Interactions between Carbon and Organic Expanders on Crystallization Behaviour of Lead in Lead–Acid Battery Electrodes
Jochen Settelein and G. Sextl, University of Würzburg, S. Hartmann and V. Trapp, Fraunhofer Institute for Silicate Chemistry ISC and F. Güthlein, Manfred Gelbke and Rainer Wagner, Moll GmbH & Co. KG, Germany

14.50  Carbon Coated Electrodes for Advanced Lead–Acid Batteries
Jusef Hassoun, Sapienza University of Rome, Italy

15.15 - 15.45  Coffee break
Location: Exhibition area on Level -2
15.45  Enhanced Lead–Acid Battery Cycle-Life through Addition of Graphene as a Sulfation-Suppressant
Kan Kan Yeung, Xinfeng Zhang, Francesco Ciucci and Matthew M. F. Yuen, Hong Kong University of Science and Technology, Hong Kong

16.10  Effect of Carbon and Carbon Nanotube Additives on Negative Active-Mass Morphology of Lead–Acid Batteries under High-Rate Partial State-of-Charge Cycling
Bolo Lukanyo Lucious and Ernst Ferg, Nelson Mandela Metropolitan University, South Africa

16.35  Molecular Rebar®: Discrete Carbon Nanotubes as a Game-Changing Advancement in Lead-Acid Battery Performance
Paul Everill, Steven Swogger and Nanjan Sugumaran, Molecular Rebar Design LLC, USA and D.P. Dubey, Pacific Batteries Ltd., Fiji Islands

17.00  End of Session 2

Wednesday 10 September

Session 3

Suppliers Forum
Location: Lowther Suite on Level -1

Attention: Session 3 runs in parallel with Session 2

Chairs: Kevin Campbell, Digatron
  Alistair Davidson, International Lead Association

14.00  Improvements for Industrial Batteries and Enhanced Flooded Batteries by use of Battery Additives
Ian Klein, Penox GmbH, Germany and Andrea Saletti, MIDAC SpA, Italy

14.10  Wirtz Grid and Plate Production Technology
John Wirtz, Doug Lambert and Rob Wirtz, Wirtz Manufacturing Company Inc, USA

14.20  Hybrid Carbon Materials for Advanced Lead-Acid Batteries
Dario Cericola, Thomas Hucke and Michael Spahr, Imerys Graphite & Carbon, Switzerland

14.30  Micro Glass Pasting Paper: A Study of Behavior between Battery Plates
Sylvie Bayle and Nicolas Benattar, Bernard Dumas, France

14.40  Advanced Battery Grid Punching Technology
Kent Lancaster, Oak Press, USA

14.50  Improved Measurement Techniques to Define Absorbed Glass Mat Properties in Valve Regulated Lead-Acid Batteries
John O Wertz, Hollingsworth & Vose, USA

15.00  Standard Curing vs Continuous Curing: Advantages and Results of an Innovative Approach to the Curing Process
Cesare Catelli, P C di Pompeo Catelli srl, Italy

15.10 - 15.30  Coffee break
Location: Exhibition area on Level -2

15.30  BM-Rosendahl: New Generation of Machinery for Battery Assembly
Richard Jonach, Rosendahl Maschinen GmbH, Austria

15.40  Laser-Based Thickness Measurement in Battery Manufacturing
Max Mandt-Merck, LAP GmbH Laser Applikationen, Germany

15.50  Dynagrid® NG: Advanced Pasting Paper for Trouble Free Manufacturing and Improved Battery Performance
Brendan Naughton, Glatfelter Gernsbach GmbH & Co KG, Germany

16.00  Innovations in Vanisperse Manufacture Dramatically Improve Cold Crank Performance
Tim McNally, Borregaard Lignotech, USA

16.10  Updating AGM Battery Manufacturing
Francesco Capuzzo, Sovema SpA, Italy

16.20  RTS: Rollover-Safe Starter Battery Lids
Massimo Verzegnassi, La Ital Plastica – SERI Group, Italy

16.30  CAM, The Added Value of Experience
Maria Pia de Simone, CAM Srl, Italy

16.40  Online Battery Monitoring for Industrial Battery Applications — Field Test Experience with the ABERTAX e²BMS online
Björn Mentzer, Abertax Technologies, Malta

16.50  Exploring New Technologies to Meet Tighter Environmental Regulations, Including Particular Matter (PM) and SOx
Tim Fisher, W L Gore and Associates, USA

17.00  Enhancing the Value of Lead Drosses and Wastes by In-House Processing for Usable Lead Recovery
Dennis Been and Peter Jetten, Pyrotek Netherlands BV, Netherlands

17.10  End of Session 3
Thursday 11 September

08.30 - 18.00
Registration Open
Location: Foyer on Level 0

09.00 - 17.00
Exhibition open
Location: Level -2
Exhibitor Lounge open
Location: Menteith Room on Level -1

Session 4

Lead Batteries for Low Emission Vehicles (Part 1)
Location: Lennox 1 on Level -2
Chair: Norbert Maleschitz
Exide Technologies

09.00 Lead-Acid Batteries for Automotive Applications — New Requirements and Ongoing Innovation
Eckhard Karden, Armin Warm, Yukiyasu Nagata, Rich Rymond and Paul Shinn, Ford R&A Europe, Germany

Manfred Gelbke and Rainer Wagner, Akkumulatorenfabrik Moll, Germany

09.50 Impact of Battery Type and Design on Availability of Engine Start-Stop Systems and on Fuel Efficiency on the Road
Eberhard Meissner, Sepehr Shirazi and Jörn Albers, Johnson Controls Power Solutions EMEA, Germany

10.15 International Lead Award
The international lead industry will make a presentation to an individual who has made a major contribution to the lead and battery industries over many years. The award will be presented by David R Prengaman, RSR Technologies

10.30 - 11.00
Coffee break
Location: Exhibition area on Level -2

11.00 Lead Carbon, Low CO₂, Low Cost — the ALABC LC Super Hybrid Projects
Allan Cooper, European Advanced Lead-Acid Battery Consortium, United Kingdom

11.25 Functional Safety of Lead-Acid Batteries in New Vehicle Applications
Jörn Albers and Ingo Koch, Johnson Controls Power Solutions EMEA, Germany

11.50 A 48V Diesel Hybrid with Lead-Acid Batteries is not a Contradiction: It is Reality
Carsten Kaup, AVL, Germany

12.15 Modelling Dynamic Charge Acceptance of SLI Batteries for Micro-Hybrid Vehicles
Jan Kabzinski, Heide Budde-Meiwes, Ilka Jahn, Julia Kowal and Dirk Uwe Sauer, ISEA — RWTH Aachen University and Eckhard Karden, Ford R&A Europe, Germany

12.40 The ALABC Moving Forward: Building on a Dynamic Past
Tim Ellis, RSR Technologies and Boris Monahov, Advanced Lead Acid Battery Consortium, USA

13.00 - 14.00
Buffet lunch
Locations:
• Exhibition area on Level -2
• Foyer of the Atrium on the Ground Floor — Level 0
• Platform 5 Café in the Atrium on Level +1

Energy Storage for Future Electricity Networks
Location: Lennox 1 on Level -2
Chair: Geoffrey May
Focus Consulting

14.00 Implementation of Multiple Capabilities for Profitable Grid Energy Storage Systems
John Wood, Ecoult, Australia

14.25 Practical Solutions for Real-World Energy Storage Challenges
Steve Vechy, Larry Burkert and Ed Stein, EnerSys, USA

14.50 Functions and Operation of Grid-integrated Battery Energy Storage Systems (BESS) in Germany and Europe: Designs, Applications, Costs and Perspective
Rainer Bussar, Martin Sinz and Sebastian Zeh, Exide Technologies GmbH, Germany

15.15 - 15.45
Coffee break
Location: Exhibition area on Level -2

15.45 Opportunities and Limitations for the Grid Integration of UPS Lead-Acid Batteries
Heiko Lehmann, Deutsche Telekom Innovation Laboratories, Germany
**Session 5 (continued)**

**16.10 Shetland Battery Energy Storage System**
Peter Stevenson, Yuasa Battery Europe Ltd, United Kingdom, Dennis Doerffel, REAPSystems Ltd, Mick Barlow, S&C Electric Europe Ltd, Nathan Cootie, Scottish and Southern Energy plc, United Kingdom and Takashi Yasaki, GS-Yuasa Corporation, Japan

**16.35 Axion PowerCube Technology – An Advanced Battery Energy Storage System for Tomorrow’s Clean Energy Demands**
Michael Romeo and Jack Shindle, Axion Power, USA

**17.00 A Smart Battery Assisted by Combined Heat and Power to Meet the Power and Energy Demand in a PV Powered House**
Joseph Cilia, Abertax Technologies, Malta

**17.30 End of Session 5**
Close of Exhibition

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**Gala Dinner**

**18.30** Coaches will depart from the following hotels to the **National Museum of Scotland**, the venue for our Conference Dinner:
Caledonian Waldorf Astoria, Sheraton Grand, Hilton Edinburgh Grosvenor, Crowne Plaza Edinburgh – The Roxburgh and the Apex European
It is essential that you bring your invitation to the Dinner

**19.00** Pre-dinner Drinks

**19.45** Dinner

**22.30** Return journey to hotels

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**Registration**

**Friday 12 September**

**08.30 - 14.00**
Registration Open
Location: Foyer on Level 0

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**Session 6**

**Lead Batteries for Low Emission Vehicles (Part 2)**
Location: Lennox 1 on Level -2

**Attention: Session 6 runs in parallel with Session 7**

**Chair:** **Tim Ellis**
RSR Technologies

**09.00** The LC Super Hybrid Programme: Addressing Market Demands for an Affordable Hybrid System Solution
Nick Pascoe and Paul Bloore, Controlled Power Technologies, United Kingdom

**09.25** ePower Series Hybrid Drive-Train Transport Vehicles - A Novel Architecture for Reduced Fuel Consumption Utilizing Axion Power PbC® Hybrid Battery Technology
Jack Shindle and Michael Romeo, Axion Power, USA

**09.50** Comparative Testing of Standard AGM and Carbon-Containing AGM Batteries for both Life and DCA
Katharine Fewings, James Green, David Stone and Martin Foster, Sheffield University and Mike Kellaway, Provector Ltd, United Kingdom

**10.15** The UltraBattery for xHEV - Performance and Mechanism
Jun Furukawa, The Furukawa Battery Co, Japan

**10.40** Advanced Diesel Electric Powertrain (ADEPT) Project
Philip Williams, Ricardo, United Kingdom

**11.05 - 11.35**
Coffee break
Location: Exhibition area on Level -2

**11.35** Improvements in Flooded Lead-Acid Batteries for a Better Cycling Life Performance under Different Surrounding and PSOC Conditions. Closing the Gap with AGM Batteries for Microhybrid Applications
Jesus Valenciano, Exide Technologies, Spain

**12.00** Flooded Lead-Acid Battery with Improved High Dynamic Charge Acceptance for Service in Idling-Stop-Start Systems
Masanori Sakai, Satoshi Minoura and Tetsuro Okoshi, Tsukuba Research Laboratory, Hitachi Chemical Co., Ltd, Japan
**Friday 12 September**

**Session 7**

**Advances in Battery Technology**

Location: Lowther Suite on Level -1

**Attention:** Session 7 runs in parallel with Session 6

**Chair:** David Rand, CSIRO Energy Flagship

<table>
<thead>
<tr>
<th>Time</th>
<th>Presentation</th>
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<tbody>
<tr>
<td>09.00</td>
<td><strong>Expander for Automotive Micro-Hybrid Applications: Interaction Mechanisms of Lignosulfonates and Advanced Carbons and Impact of Synthetic Lignosulfonates on Dynamic Charge Acceptance</strong>&lt;br&gt;Achim Lulsdorf and Maureen Murphy, Hammond Group Inc., USA</td>
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<tr>
<td>09.25</td>
<td><strong>Influence on Lifetime of Valve-Regulated Lead-Acid Batteries when Ripple is Superimposed on the Float Charge Voltage of Uninterruptable Power Supplies.</strong>&lt;br&gt;Takashi Matsushita and Tomonobu Tsujikawa, NTT Facilities Inc., Japan</td>
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<td>10.15</td>
<td><strong>Performance of Lead-Acid + Supercapacitors Under High Rate Capacity Cycling Conditions</strong>&lt;br&gt;Ernst Ferg and Siseko Mgangato, Nelson Mandela Metropolitan University, South Africa</td>
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<td>10.40</td>
<td><strong>Determination of the Lead-Acid Battery’s Dynamic Response Using the Butler-Volmer Equation for Advanced Battery Management Systems in Automotive Applications</strong>&lt;br&gt;Grzegorz Pilatowicz, Heide Budde-Meiwes, Julia Kowal and Dirk Uwe Sauer, Electrochemical Energy Conversion and Storage Systems Group and Institute for Power Electronics and Electrical Drives (ISEA), and Christel Sarfert, Eberhard Schoch and Martin Königsmann, Robert Bosch GmbH, Germany</td>
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<tr>
<td>10.55</td>
<td><strong>A Layered Carbon-Lead Sulfate Composite as a New Additive for Negative Electrodes of Lead-Acid Batteries</strong>&lt;br&gt;Shukai Zhang, Weihua Xue, Luying Wang and Hailei Zhao, University of Science and Technology and Hao Zhang, Gaoping Cao and Yusheng Yang, Research Institute of Defence, Beijing, China</td>
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<tr>
<td>11.00</td>
<td><strong>GreenSeal® Bipolar Technology for Large-Format, Lead-Acid Batteries</strong>&lt;br&gt;Edward Shaffer II, Don Hobday and Jerry Mullis, Advanced Battery Concepts, USA</td>
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<td>12.00</td>
<td><strong>Properties of Full-Scale Lead-Acid Negative Plates Built Around Carbon Felt Micro-Scale Current Collectors</strong>&lt;br&gt;John Abrahamson, Stuart McKenzie, Shane Christie, Euan Heffer, Hannu Out, Grigory Titelman and Hassan Wong, ArcActive Ltd, New Zealand</td>
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<tr>
<td>12.50</td>
<td><strong>Novel Lead-Graphene and Lead-Graphite Grid Materials for Possible Application in Lead-Acid Batteries</strong>&lt;br&gt;Liudmila Yolshina and V. B. Malkov, Institute of High-Temperature Electrochemistry, and A. N. Yolshin and V. A. Yolshina, Leader LAB Ltd, Russia</td>
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<tr>
<td>13.15</td>
<td>Conference Close</td>
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**11.05 - 11.35**

Coffee break
Location: Exhibition area on Level -2

**11.35**

**Conference Close**

**13.15 - 14.30**

Lunch
Location: Lennox 3 on level -2