



CONSORTIUM FOR  
**BATTERY  
INNOVATION**

**CENELEC**  
EUROPEAN COMMITTEE  
FOR ELECTROTECHNICAL STANDARDIZATION

**Bringing together**  
the automotive-battery value chain

## Workshop on **Automotive Lead Battery Advancements (ALBA)**

**12-13 June 2024**  
**Colombes (Paris), France**

The *Consortium for Battery Innovation* (CBI) in collaboration with *European Committee for Electrotechnical Standardization* (CENELEC TC21X WG3) are holding a workshop bringing together global technical experts from the advanced lead battery and automotive industries.

The “DCA & Heat” **workshop series** (Kloster Eberbach 2017, Alcalá de Henares 2018, Bruges 2019) has enabled technical in-depth discussions about hot research topics among the automotive battery industry, their suppliers and customers, and research institutes. During the travel-restricted pandemic years, two online editions and several content-related experts working groups have kept this spirit. With **ALBA** 2022 in Bergamo and 2023 in Wolfsburg, face-to-face workshops were resumed under a new name that reflects the wider scope of topics as it evolved over the past 7 years.

Compact plenary talks will expose overviews and summaries to all participants, this year focusing on **auxiliary and backup (a&b) applications**, particularly for battery-electric vehicles (BEV) and in support of Functional Safety.

- A special session will discuss **market trends** and challenges for automotive 12V systems and their batteries, and **opportunities** for the lead battery supply base

In parallel break-out sessions, each participant will have the opportunity to discuss in depth three of the following topics and plan collaborative work streams associated with them:

- New test methods and new experimental data for **charge recovery**, which covers both power capability (state of function, SOF) and energy (state of charge, SOC)
- New **test methods for 12V auxiliary & backup** batteries, e.g., characterization of pulse power, and **engineering tools** for battery sizing and selection
- Best practices for **test cells** and **cell testing** dedicated to a&b battery applications
- **AGM saturation**: definition, measurement and evolution of side reactions
- New approaches to optimize **positive active mass (PAM)** and **positive plate** durability for a&b batteries
- Recommendations for **12V battery charging strategy & operation** in BEV to minimize battery warranty and maximize function availability

CBI will also hold the European Technical Workshop on 11-12 June at the same location. We are looking forward to meeting you in person this summer in France!

## CR

## Ways to measure &amp; improve charge recovery

- How did the battery get to 50% SOC – effects of pre-discharge rate and temperature
- Why does SOF recover so much faster than SOC? Demonstrating the new IEC test.
- Screening CR with NAM variations in cells: 4 experimental studies
- Experimental studies and physico-chemical model of the mechanisms limiting CR

Markus Föhlich, *Moll Batterien*  
 Pascual Garcia, *Imerys*  
 Gao Guoxing, *Camel*  
 Eckhard Karden, *CBI*  
 Eberhard Meissner  
 Christian Mondoloni, *Stellantis*  
 Grace Rocha, *Moura*  
 Jochen Settelein, *Fraunhofer ISC*  
 Jonathan Wirth, *Batterieingenieure*  
 Zhao Ke\* / Mike Miao, *Leoch*  
 and other presenters

## AUX

## Test and sizing methods for auxiliary &amp; backup batteries

- Field experience and failure mechanisms of 12V batteries in BEV
- Market trends for 12V non-starter batteries in various regions
- Update on prIEC 60095-8 – a template for OEM specifications?
- How to use pulse-power characterization (IEC PPC) in battery selection and sizing

Aaron Bollinger, *EastPenn Manufacturing*  
 Luca Brisotto, *Exide*  
 Bernd Engwicht, *EastPenn Manufacturing*  
 Torsten Hildebrandt, *Clarios*  
 Markus Hollas\*, *Volkswagen*  
 Mike Miao, *Leoch*  
 José Otávio Peroba, *Moura*  
 Srihari V, *Amara Raja*  
 and other presenters

## CEL

## Cell design and cell testing for auxiliary &amp; backup batteries

- Design, build and test techniques for computer tomography of a mini test cell
- Investigating charging strategies with test cells of variable composition
- AGM test cell for sub L-size auxiliary battery
- 2P1N AGM test cell with full size plates
- Updates to the CBI cell-test manual

Begüm Bozkaya, *CBI*  
 Abderrezak Hammouche, *Clarios*  
 Jesus Perez, *C&D Trojan*  
 Jack Scott, *EastPenn Manufacturing*  
 Grant Spencer / Marcus Young, *Univ. North Texas*  
 and other presenters

## SAT

## AGM cell saturation: definition, measurement, effects on side reactions

- How is recombination current affected by cell saturation, and are there other key factors?
- Saturation of what, and when is it zero?
- Weight-based non-destructive saturation measurement
- Experimental overcharging and Tafel studies

Abderrezak Hammouche, *Clarios*  
 Campbell Matthews, *ArcActive*  
 Scott McCaskey, *EastPenn Manufacturing*  
 John Wertz, *Hollingsworth & Vose*  
 Ian Wolfe\*, *EastPenn Manufacturing*  
 and other presenters

**PAM****Improvements of positive plate and PAM recipes**

- New additives for PAM in a&b batteries: 4 experimental studies
- Combined PE-minirib / AGM separator evaluated in a 12V battery trial
- New Argonne lab results with relevance for a&b batteries

Susmitha Appikatla / Eric Miller, *Daramic*  
 Paul Everill, *Black Diamond*  
 Tim Fister\*, *Argonne National Labs*  
 Miguel Garcia / Jesús Valenciano, *Exide*  
 Micha Kirchgessner, *Penox*  
 Shawn Peng, *C&D Trojan*  
 Marco Robotti / Francisco Trinidad, *Hammond*  
 Jack Scott, *EastPenn Manufacturing*  
 John Wertz, *Hollingsworth & Vose*  
 and other presenters

**CSO****12V charging strategy and operation for BEV**

- Golden rules for OEMs? Toward a CBI 12V Charging Guide
- Charging recommendations for AGM versus flooded *industrial* batteries
- Optimization of opportunity charging for traction batteries
- Slow setpoint ramps in BEV driving cycles: electrical and gas-flow investigations

Sylvain Angoujard, Jörg Tiburcy, *Clarios*  
 Eckhard Karden, *CBI*  
 Egbert Lodowicks, *Audi*  
 Sebastian Mauer, *Moll Batterien*  
 Shawn Peng, *C&D Trojan*  
 Sally Sun, *EAI*  
 and other presenters

\* remote contribution

The workshops will take place at the modern Kopster Hotel in Colombes, Île de France. When booking your **travel to and from Paris**, please allow 45 to 90 minutes by public transport, or 30 to 50 minutes by taxi, from CDG international airport or a Paris TGV / Eurostar station. While offering excellent travel connections, Paris experiences peak travel in June every year, and will be even busier this June, only six weeks ahead of the Olympic Games.

Hence, we strongly advise to register and book your accommodation **no later than 3rd May**. Please register under <https://batteryinnovation.org/alba-12-13-june-2024/>. We will provide **agenda updates**, and eventually all presentations, under this address, too. Registration fees, as always, are at actual cost, covering seminar rooms, handout material, lunches, coffee breaks, the cultural tour and Wednesday dinner. Discounts can only be offered for students and retired experts. We have reserved for you a block of comfortable **hotel rooms to be booked with workshop registration**: Rooms inside the conference hotel are offered at an affordable rate, but we can guarantee availability until 3rd May only.