

## Preface for 10ELBC Proceedings

The 10th European Lead Battery Conference, organised by the Lead Development Association International, was held in Athens at the Hilton Hotel on 26–29 September 2006. Over 470 delegates attended from all sectors of the industry and academia, together with 102 accompanying persons. In all more than 50 nations were represented.

Many of the 70 technical papers presented by industrial experts and academic specialists, equipment and material suppliers, covering aspects of the design, manufacture, applications, and marketing of lead–acid batteries, are included in these proceedings. Delegates were able to meet more than 60 exhibitors of manufacturing equipment and supplies and so improve their awareness of new cost reduction and quality improvement techniques in battery making.

With almost 80% of the 8 million tonnes of lead produced each year from both primary and secondary sources used in battery manufacture, the increasing number of applications described at the Conference illustrated the continuing solid growth of the lead–acid battery industry and of the extensive battery recycling industry. Several speakers described improvements in the performance of batteries designed for use in hybrid-electric powered vehicles, demonstrating that the lead–acid battery can meet all the essential requirements with relatively minor design changes. Whilst further development is necessary, results now confirm that there is a future for the improved designs of specialised lead–acid batteries in the new automotive world. As the hybrid market grows it will have a marked effect on lead demand. Meanwhile, development of highly successful lead–acid batteries for increasing SLI use continues worldwide.

Global developments in lead demand and supply were reviewed, together with the crucial influence of China on the future direction of lead prices. Both are key issues for manufacturers. With battery manufacturing capacity growing faster than domestic market demand, Chinese producers have been targeting export markets offering competitive prices by taking full advantage of low cost capital, land and labour and high quality manufacturing facilities. In Europe, the trend in lead–acid battery manufacturing from the high cost West to the lower cost East is an important factor in the dynamics of lead supply, battery making and distribution.

The emphasis on renewable energy strategy and the importance of efficient electricity storage was demonstrated by many speakers. Not only is the stand-alone market continuing to grow but the effective use of lead–acid battery storage is seen as a major option both to reduce costs and to increase the efficient use of electricity distribution assets at the national and especially the local level. Battery systems can play a vital part in integrating renewable sources of energy such as wind and solar power. Several papers explored the management strategies based on the development of optimised charge and discharge algorithms as well as the accurate determination of state-of-charge and state-of-health needed in such applications.

Since their first introduction 25 years ago in 1981, the use of valve regulated lead–acid batteries as an integral part of dc power supplies for telephone exchanges and transmission has grown strongly and enabled many telecommunications innovations to become a commercial reality. Technological advances and past problems experienced over this period were reviewed. In looking to the future, possible improvements include increased hydrogen recombination and the use of bipolar lead–acid designs in standby systems.

The Conference demonstrated the continuing growth of lead–acid batteries, especially in automotive and standby applications, as well as opportunities in a wide range of evolving areas. New and existing applications are strengthened by the many, diverse, innovative new designs described by several speakers. Lightweight lead–acid batteries as well as designs with low internal resistance and high power density or with graphite electrodes were described, together with the increasing use of incorporated electronics to help optimise their performance.

The Lead Development Association International wishes to thank all speakers and their related organizations for their contributions in helping 10ELBC win its Olympic ‘Gold’.

11ELBC will be held in Warsaw, Poland on 23–26 September 2008.

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