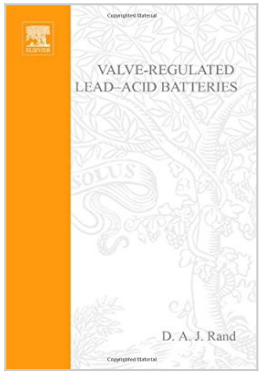

Valve-Regulated Lead-Acid Batteries

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For many decades, the lead-acid battery has been the most widely used energy-storage device for medium- and large-scale applications (approximately 100Wh and above). In recent years, the traditional, flooded design of the battery has begun to be replaced by an alternative design. This version - the valve-regulated lead-acid (VRLA) battery - requires no replenishment of the water content of the electrolyte solution, does not spill liquids, and can be used in any desired orientation. Since the VRLA battery operates in a somewhat different manner from its flooded counterpart, considerable technological development has been necessary to meet the exacting performance requirements of the full range of applications in which rechargeable batteries are used.

The valve-regulated design is now well established in the industrial battery sector, and also appears set to be adopted widely for automotive duty.

This book provides a comprehensive account of VRLA technology and its uses. In the future, all industrial processes - including the manufacture of batteries - will be required to conform to the conventions of sustainability. Accordingly, the crucial areas of the environmental impact associated with the production and use of VRLA batteries and the recycling of spent units are also treated thoroughly.

Valve-Regulated Lead-Acid Batteries gives an essential insight into the science that underlies the development and operation of VRLA batteries and is a comprehensive reference source for those involved in the practical use of the technology in key energy-storage applications.

- Covers all major advances in the field
- Provides a comprehensive account of VRLA technology and its uses
- First book dedicated to this technology

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Editorial Review

Review
"an excellent overview of batteries in all their applications. A wide variety of topics are covered in the 17 chapters...we can definitely recommend this book, even though the price of $160 appears to be very high. No developer can afford to miss out on this book as a reference." **--ZVEI (Central Association of the Electrical Engineering and Electronics Industry)**

About the Author
Pat was awarded a Ph. D. for crystal structure analysis in 1968 by the University of Durham, U.K., and a D. Sc. for research publications in materials science, by the same university, in 1994. He worked for 23 years at the Harwell Laboratory of the U.K. Atomic Energy Authority where he brought a background of crystal structure and materials chemistry to the study of lead-acid and other varieties of battery, thus supplementing the traditional electrochemical emphasis of the subject.

From1995 he was Manager of Electrochemistry at the International Lead Zinc Research Organization in North Carolina and Program Manager of the Advanced Lead-Acid Battery Consortium. In 2005 he also became President of the Consortium.

Dr. Moseley was one of the editors of the Journal of Power Sources for 25 years from 1989 to 2014. In 2008 he was awarded the Gaston Planté medal by the Bulgarian Academy of Sciences.

Prof. Dr. Jürgen Garche has more than 40 years of experience in battery and fuel cell research & development. In his academic career the focus was on material research. Thereafter, he worked on and directed cell and system development of conventional (LAB, NiCd, NiMH) and advanced (Li-Ion, NaNiCl2, Redox-Flow) batteries. His experience includes also fuel cells (mainly low temperature FCs) and supercaps. He established the battery & FC division of the ZSW in Ulm (Germany), an industry related R&D institute with about 100 scientists and technicians. His interest in battery safety goes back to the work with the very large battery safety testing center of the ZSW. In 2004 he founded the FC&Battery consulting office FCBAT; furthermore he is a senior professor at Ulm University.

An essential and insightful reference source into valve-regulated lead-acid technology.

Users Review

From reader reviews:

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