

Book Review

Batteries for Implantable Biomedical Devices

Edited by Boone B. Owens, published by Plenum Publishing Company, Ltd., London, 1986, 358 pp., £55.00.

The book combines, within 11 chapters, contributions from 19 scientists, each active in the research and development of power sources and medical devices.

Chapter 1 provides a fascinating insight for the layman into the reality of today's "bionic man" and the prospects for his future. Existing devices and their power source requirements are reviewed and the next generation systems discussed. It is unfortunate that a typographical omission has spoilt the overall message of the chapter which surely is that "one would not be hardpressed to believe that duplication and creation of artificial limbs having normal capabilities can occur sometime in the near future."

Chapter 2 is an unusual and interesting departure from the textbook format, comprising transcripts of interviews with Dr Samuel Ruben and Dr Wilson Greatbach. These inventors were in the vanguard of biomedical power source technology and their thoughts and philosophies make stimulating reading.

The remainder of the book will be of interest to a much wider audience than the medical field and deals in broad terms with the science and technology of sealed batteries. In line with current trends and the general requirement for smaller, lighter, and longer life systems, four chapters are concerned with lithium batteries. They consider, in particular, halogen, solid cathode, and liquid oxidant systems. Also briefly reviewed are mercury primary batteries and rechargeable systems. Considerable practical information about existing batteries and their performance is given together with details of their chemistry and electrochemistry.

Two chapters given over to evaluation methods and battery performance modelling will be useful to all involved in battery studies.

The final chapter is a lengthy review of nuclear batteries for implantable applications. This covers all aspects of the technology and provides an interesting comparison with electrochemical systems.

To quote the Foreword to the book by Professor A. J. Salkind, "It will be helpful for power source researchers, medical students and physicians, and evaluators of present and future generations of implantable power sources and devices."

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