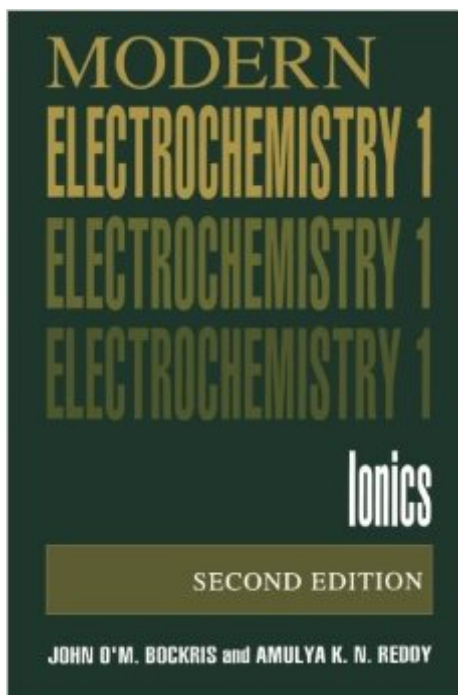


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Modern Electrochemistry 1: Ionics, 2nd Edition



Synopsis

This book had its nucleus in some lectures given by one of us (J. Oâ™M. B.) in a course on electrochemistry to students of energy conversion at the University of Pennsyl- nia. It was there that he met a number of people trained in chemistry, physics, biology, metallurgy, and materials science, all of whom wanted to know something about electrochemistry. The concept of writing a book about electrochemistry which could be understood by people with very varied backgrounds was thereby engendered. The lectures were recorded and written up by Dr. Klaus Muller as a 293-page manuscript. At a later stage, A. K. N. R. joined the effort; it was decided to make a fresh start and to write a much more comprehensive text. Of methods for direct energy conversion, the electrochemical one is the most advanced and seems the most likely to become of considerable practical importance. Thus, conversion to electrochemically powered transportation systems appears to be an important step by means of which the difficulties of air pollution and the effects of an increasing concentration in the atmosphere of carbon dioxide may be met. Cor- sion is recognized as having an electrochemical basis. The synthesis of nylon now contains an important electrochemical stage. Some central biological mechanisms have been shown to take place by means of electrochemical reactions. A number of American organizations have recently recommended greatly increased activity in training and research in electrochemistry at universities in the United States.

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Customer Reviews

This book By Bockris and Reddy, is the best book you can hope to lay your hands, if you are looking for an good introduction and thorough description of the fundamentals. This is definitely one book, or rather two books which no library should be without, including libraries of graudate students. The style of the authors is extremely simple, and reading this book is like reading a story book. you would find it quite difficult to keep the book down once you have picked it up. An absolutely fantastic book, though slightly on the costlier side.

These authors have a great writing style. This is a subject matter that has a potential to be very, very dry but the authors have somehow made it enjoyable. If they get into hardcore calculations and derivations that you might be a little rusty on, they anticipate that (I assume from lots of students' feedback) and include appendixes at the end of each chapter so that you don't need to run off and find the corresponding chapter in one of your math/physics/chemistry textbooks. They also have a very useful nomenclature guide (in the first book only) in case you keep forgetting what certain symbols mean and what units they are in. The footnotes are great and keep things from getting too dry. Overall, I would definitely recommend these three books. Note: Unless you have a fetish for hard covers, get the paperbacks; they're half the cost. When I bought these books from .com, it was very confusing to figure out which books to get. Here are the ISBN's of each of the three books in the series. This will save you some headache:

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The Modern Electrochemistry volumes are truly excellent textbooks and references for all aspects of electrochemistry. Whether you're dealing with corrosion, electrolytic processes, batteries, or biochemistry, the electrochemistry is fully explained here. The authors go into a great deal of detail topics while maintaining a very familiar, easy-to-read tone. There are also plenty of interesting historical footnotes which serve to lighten the text. These books are written for electrochemists interested in the chemical mechanisms behind electrochemical processes. Applications of these processes are treated very briefly. If you are more interested in real-world applications of these processes, other texts may serve you better. The text comes in three volumes, which is problematic. It is difficult to find all three at most booksellers. Many online booksellers (including) don't distinguish between the volumes in their catalogs; I had to go by ISBN numbers to ensure I got the complete set. But it was well worth the trouble.

The difference of this second Ed. from the first one is huge; the author actually rewrote ca. 50% of the first volume (Ionics) and ca. 70% of the second volume (Electrodics, still in writing), covering literature up to later 90's. For classroom use, the most important addition of the edition is the problem set, which are extremely helpful for students on introductory level. It was a great honor of me to be invited by the author to write part of the problem sets for all chapters in Vol.1 and a few chapters in Vol.2, and I can tell you that the author and the problem writers put in a lot of effort to elucidate the fundamental electrochemistry while also help original thinkings of the students on more advanced electrochemistry issues.

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