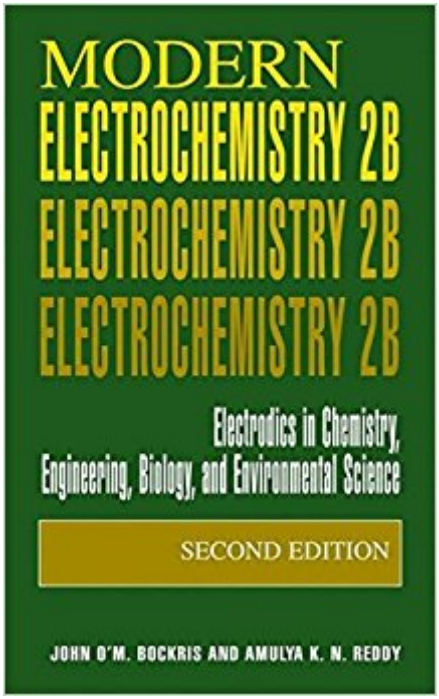
Modern Electrochemistry 2B: Electrodics In Chemistry, Engineering, Biology And Environmental Science



Synopsis

This book had its nucleus in some lectures given by one of us (J. OÃ¢â ¬â„¢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.

Book Information

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Customer Reviews

about the First Edition: `A superbly written teaching book which should become indispensable to every student of electrochemistry.' Journal of the American Chemical Society `A truly extraordinary achievement ... An enormous body of electrochemical knowledge and a wealth of stunningly penetrating detail.' Journal of the Electrochemical Society `A must.' Nature about the second edition: `These original, stimulating and informative volumes offer an unusual approach and inter alia provide an excellent entrÃƒÂ©e to the field for the non-specialist.' Emeritus Professor Douglas Inman, Dept. of Materials, Imperial College, London

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:Electrochemistry 1: IonicsISBN: 0306455552 (paperback)Electrochemistry 2A: Fundamentals of ElectrodicsISBN: 0306461676 (paperback)Electrochemistry 2B: Electrodics in Chemistry, Engineering, Biology, and Environmental ScienceISBN: 0306463253 (paperback)

The authors do a good job introducing the concepts of electrochemistry in a fairly readable and thorough manner. The individual chapters can be read more or less independently with minimal flipping back to earlier material for reference. The subject mater is handled at a level appropriate for an intermediate level student or for one not exceedingly familiar with electrochemistry. Exercises and problems are infrequent so this may not be a good stand alone text for an upper division class although I found the emphasis on conceptual understanding very valuable. In all a very good text.

Modern Electrochemistry 2B: Electrodics in Chemistry, Engineering, Biology and Environmental Science Modern Electrochemistry 2A: Fundamentals of Electrodics Environmental Oriented Electrochemistry. Studies in Environmental Sciences, Volume 59 Environmental Toxicology and

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