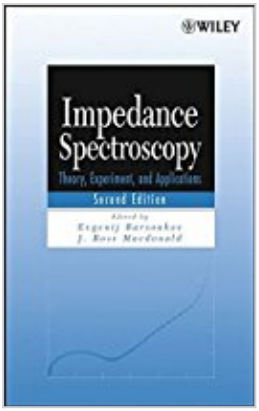

Impedance Spectroscopy: Theory, Experiment, and Applications

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A skillful balance of theoretical considerations and practical know-how
Backed by a team of expert contributors, the Second Edition of this highly acclaimed publication brings a solid understanding of impedance spectroscopy to students, researchers, and engineers in physical chemistry, electrochemistry, and physics. Starting with general principles, the book moves on to explain in detail practical applications for the characterization of materials in electrochemistry, semiconductors, solid electrolytes, corrosion, solid-state devices, and electrochemical power sources. The book covers all of the topics needed to help readers identify whether impedance spectroscopy may be an appropriate method for their particular research problem.
The book helps readers quickly grasp how to apply their new knowledge of impedance spectroscopy methods to their own research problems through the use of unique features such as:
* Step-by-step instructions for setting up experiments and then analyzing the results
* Theoretical considerations for dealing with modeling, equivalent circuits, and equations in the complex domain
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* Figures depicting impedance spectra of typical materials and devices
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This Second Edition incorporates the results of the last two decades of research on the theories and applications of impedance spectroscopy. Most notably, it includes new chapters on batteries, supercapacitors, fuel cells, and photochromic materials. A new chapter on commercially available measurement systems reflects the emergence of impedance spectroscopy as a mainstream research tool. With its balanced focus on both theory and practical problem solving, Impedance Spectroscopy: Theory, Experiment, and Applications, Second Edition serves as an excellent graduate-level textbook as well as a hands-on guide and reference for researchers and engineers.

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Editorial Review

Review
"...the only text currently available...that extensively treats...both the theoretical considerations and the practical applications...an essential addition to the personal library of any scientist wishing an in-depth understanding…" (*CORROSION*, June 2006)

"This book would serve researchers and engineers working in this field. It could also be used effectively as a graduate text." (*Materials and Manufacturing Processes*, May 2006)

".. an excellent introduction to the theory of impedance spectroscopy, followed by detailed applications of the technique as well as experimental methods." (*CHOICE*, September 2005)

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