JOURNAL OF RAMAN SPECTROSCOPY
J. Raman Spectrosc. 2007; **38**: 122
Published online in Wiley InterScience
(www.interscience.wiley.com) DOI: 10.1002/jrs.1558

JRS

Book Review

Impedance Spectroscopy: Theory, Experiment, and Applications Second Edition

Evgenij Barsoukov and J. Ross Macdonald (eds)

John Wiley & Sons, Inc., Hoboken, New Jersey, 2005, pp. 595. £67.95

Impedance Spectroscopy: Theory, Experiment, and Applications provides a comprehensive and interesting introduction into impedance spectroscopy in general and explains the details of applications of this technique in electrochemistry and various areas of materials science. The book includes theoretical considerations and valuable practical recipes required to use impedance spectroscopy in a lab. Starting with general principles, the book then proceeds with the discussion of practical applications of impedance spectroscopy for material characterization in electrochemistry and other areas. It includes four comprehensive chapters that focus on the fundamentals of impedance spectroscopy, the theory of this method, measuring techniques and data analysis, as well as applications of impedance spectroscopy, all of them written by leading experts in the field.

With impedance spectroscopy playing an important role in fundamental and applied electrochemistry and materials science, this book will serve as a useful textbook and a reference book on the topic of impedance spectroscopy, its principles and applications with a special emphasis on electrochemistry and solid materials. Of special value is the discussion of the measurement approaches best suited for particular systems, analysis of error sources, and suggestions on how to minimize experimental uncertainties. The second edition updates the book, presenting recent achievements in methodology and research, and includes new sections on batteries, supercapacitors, fuel cells, photochromic materials, and commercially available systems for impedance spectroscopy.

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[DOI: 10.1002/jrs.1558]