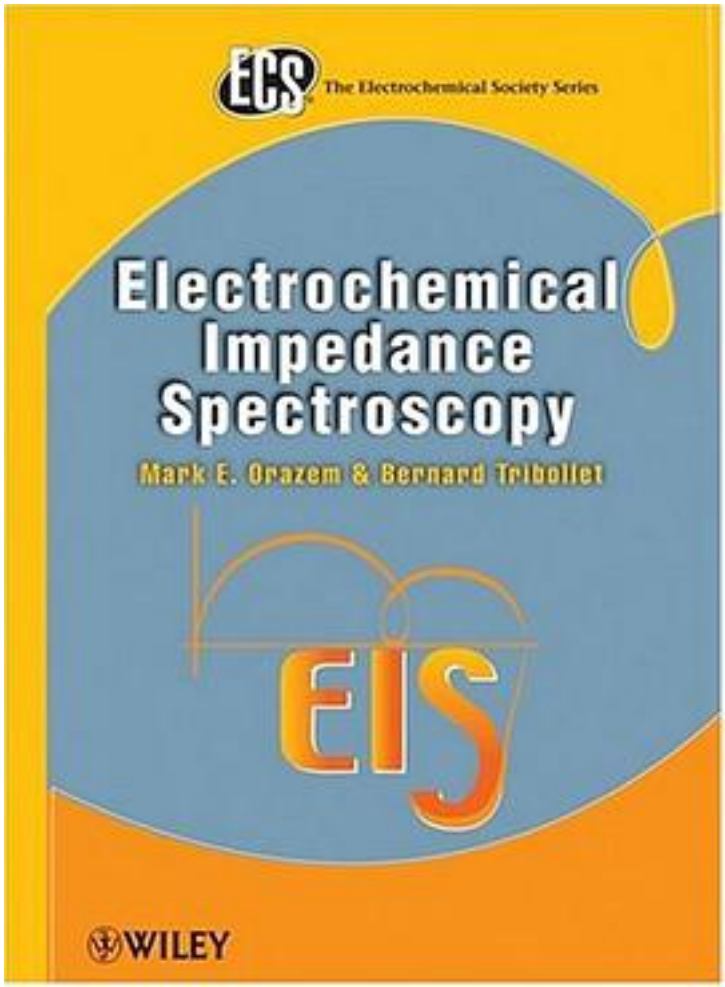
Electrochemical Impedance Spectroscopy



Electrochemical Impedance Spectroscopy_下载链接1_

著者:Orazem, Mark E./ Tribollet, Bernard

出版者:John Wiley & Sons Inc

出版时间:2008-9-9

装帧:HRD

isbn:9780470041406

This book provides the background and training suitable for application of impedance spectroscopy to varied applications, such as corrosion, biomedical devices,

semiconductors and solid-state devices, sensors, batteries, fuel cells, electrochemical capacitors, dielectric measurements, coatings, electrochromic materials, analytical chemistry, and imaging. The emphasis is on generally applicable fundamentals rather than on detailed treatment of applications. With numerous illustrative examples showing how these principles are applied to common impedance problems, Electrochemical Impedance Spectroscopy is ideal either for course study or for independent self-study, covering:

Essential background, including complex variables, differential equations, statistics, electrical circuits, electrochemistry, and instrumentation

Experimental techniques, including methods used to measure impedance and other transfer functions

Process models, demonstrating how deterministic models of impedance response can be developed from physical and kinetic descriptions

Interpretation strategies, describing methods of interpretating of impedance data, ranging from graphical methods to complex nonlinear regression

Error structure, providing a conceptual understanding of stochastic, bias, and fitting errors in frequency-domain measurements

An overview that provides a philosophy for electrochemical impedance spectroscopy that integrates experimental observation, model development, and error analysis

This is an excellent textbook for graduate students in electrochemistry, materials science, and chemical engineering. It's also a great self-study guide and reference for scientists and engineers who work with electrochemistry, corrosion, and electrochemical technology, including those in the biomedical field, and for users and vendors of impedance-measuring instrumentation.

作者介绍:

目录:

标签

评论

Electrochemical Impedance Spectroscopy_下载链接1_

书评

Electrochemical Impedance Spectroscopy_下载链接1_