

Editorial

EIS-2004: The 6th International Symposium on Electrochemical Impedance Spectroscopy

Impedance spectroscopy represents a rich and inter-related area of science that has been applied to a large number of important areas of research. These include: corrosion and corrosion control by coatings; electrochemical kinetics and mechanisms; electronic and ionic conducting polymers; semiconducting electrodes; semiconductors, solid electrolytes, and electronic conductors; energy storage, batteries, fuel cells; biological, biocellular, and biomedical systems. Impedance spectroscopy has been applied in industrial applications to sensors, quality control, and corrosion monitoring.

The breadth of application of impedance spectroscopy motivated creation of a conference dedicated to the use and advancement of the technique itself. The First International Symposium on Electrochemical Impedance Spectroscopy was held in 1989 in Bombannes, France. It brought together scientists and engineers working in areas associated with both electrochemical and electronic systems seeking new breakthroughs for specific applications. Since then, the meeting has been held every three years on alternating continents.

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The many lively discussions held at previous impedance conferences over how data should be interpreted remind me of the old Buddhist tale of The Blind Men and the Elephant. Like all electrochemical measurements, impedance spectroscopy provides only an indirect measure of physical properties or visualization of individual events. The most important issues in the field today revolve around the difficulty of interpreting spectra in terms of physically meaningful information. The papers presented in this volume describe advances in the use of impedance spectroscopy to improve our understanding of physical systems. These advances include improvements in experimental techniques, applications of coupled experimental methods, development and application of new statistical and regression analysis, and development of refined mathematical models.

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