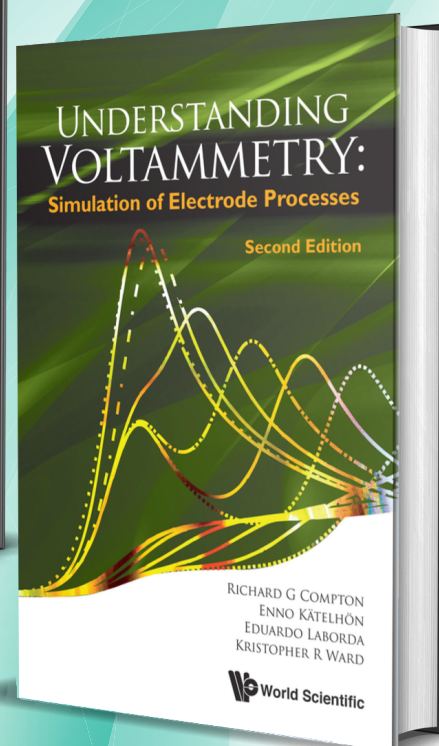
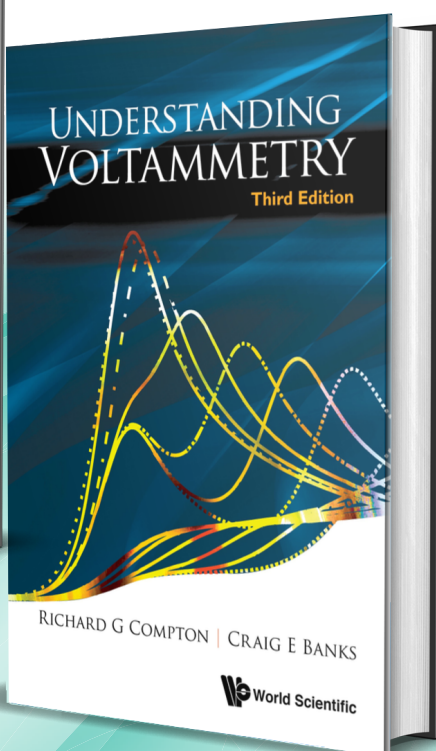
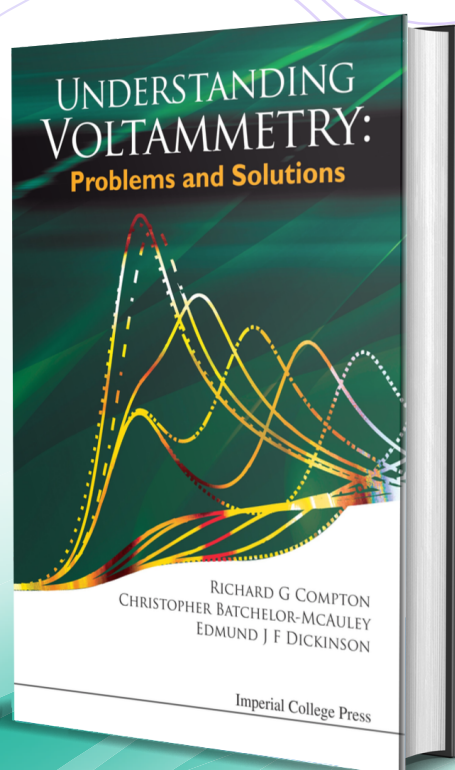


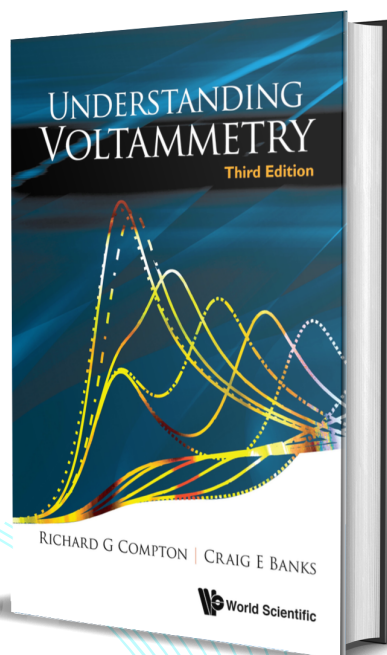
UNDERSTANDING VOLTAMMETRY

SERIES



Scan QR code or visit:

www.worldscientific.com/page/voltammetry



456pp | Jul 2018
978-1-78634-526-4
US\$128 | £113

“

The authors manage to combine simplicity and economy of language with clarity of meaning, which results in a highly readable style with no loss in rigour. There is a wide range of material covered, ranging from 1st year undergraduate to post-graduate level. This span is achieved by the use of illustrative examples from cutting-edge research; showing both how the basics have application in complex situations as well as explaining the directions of some of the leading research in the field. This text continues to evolve and improve. Whilst it does not set out to cover the entire range of electrochemistry, the principles of the subject are well illustrated by the chapters presented. There is something here for most electrochemists and would be a very useful addition to reading lists for undergraduates and postgraduates alike.

Dr Neil V Rees

University of Birmingham, UK

There is excellent detail throughout the book making it a rich source of information or point of reference for anyone wishing to gain a deep understanding of voltammetry. Furthermore, the book is peppered with some enigmatically presented fascinating historical asides and short biographies of eminent scientists who have contributed to the understanding of voltammetry. I strongly recommend this book to any PhD student or PDRA who plan to use voltammetry in their work.

Daren Caruana

University College London, UK

Review of the First Edition:

There is a wealth of voltammetric data from a range of systems, with numerous diagrams showing actual voltammograms, greatly helpful to a reader new to the field, with underpinning mathematical equations and supportive mechanistic explanation. This is a most useful and instructive book.

”

Chemistry & Industry

.....

This textbook considers how to implement designing, explaining and interpreting experiments centered on various forms of voltammetry (cyclic, microelectrode, hydrodynamic, etc.). The reader is assumed to have knowledge of physical chemistry equivalent to Master's level but no exposure to electrochemistry in general, or voltammetry in particular. While the book is designed to stand alone, references to important research papers are given to provide an introductory entry into the literature.

The third edition contains new material relating to electron transfer theory, experimental requirements, scanning electrochemical microscopy, adsorption, electroanalysis and nanoelectrochemistry.

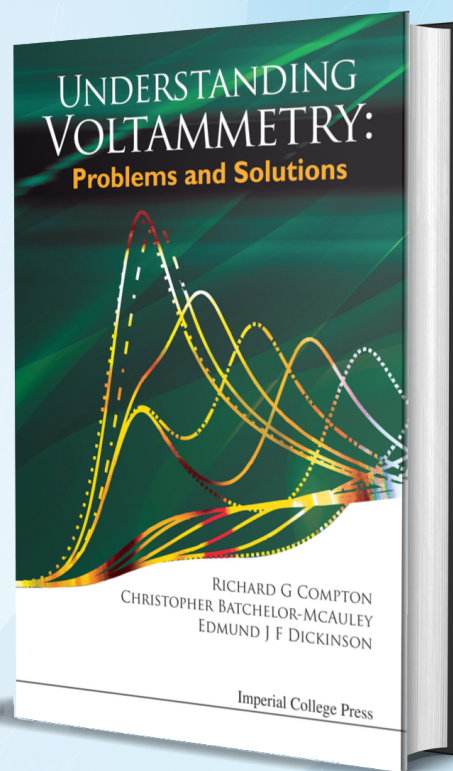
The field of electrochemical measurement, with respect to thermodynamics, kinetics and analysis, is widely recognised but the subject can be unpredictable to the novice, even if they have a strong physical and chemical background, especially if they wish to pursue quantitative measurements. Accordingly, some significant experiments are, perhaps wisely, never attempted, while the literature is sadly replete with flawed attempts at rigorous voltammetry.

This book presents problems and worked solutions for a wide range of theoretical and experimental subjects in the field of voltammetry. The reader is assumed to have knowledge up to a Master's level of physical chemistry, but no exposure to electrochemistry in general, or voltammetry in particular, is required. The problems included range in difficulty from senior undergraduate to research level, and develop important practical approaches in voltammetry.

The problems presented in the earlier chapters focus on the fundamental theories of thermodynamics, electron transfer and diffusion. Voltammetric experiments and their analysis are then considered, including extensive problems on both macroelectrode and microelectrode voltammetry. Convection, hydrodynamic electrodes, homogeneous kinetics, adsorption and electroanalytical applications are discussed in the later chapters, as well as problems on two rapidly developing fields of voltammetry: weakly supported media and nanoscale electrodes.

There is huge interest in the experimental procedure of voltammetry at present, and yet no dedicated question and answer book with exclusive voltammetric focus exists, in spite of the inherent challenges of the subject. This book aims to fill that niche.

272pp | Dec 2011
1978-1-84816-730-8
US\$85 | £71



ABOUT THE AUTHOR

Richard G Compton is Professor of Chemistry and Aldrichian Praelector at Oxford University, United Kingdom where he is also Tutor in Chemistry at St John's College. He received his PhD in 1980 at Imperial College, London.

Compton has broad interests in both fundamental and applied electrochemistry and electroanalysis including nanochemical aspects. He has published in excess of 1500 papers ($h = 102$; with more than 44,000 citations excluding self-cites) and 7 books.

Patents have been filed on 25 different topics including novel pH sensors including calibration free pH measurement, gas sensing, electrochemical bacteria quantification and the detection of garlic strength and chilli heat in foodstuffs.

Compton holds Honorary Doctorates from the Estonian University of Life Sciences and Kharkov National University of Radio-electronics (Ukraine), is a Fellow of the Royal Society of Chemistry, of IUPAC and of the International Society of Electrochemistry and a Member of the Academy of Europe (MEA).

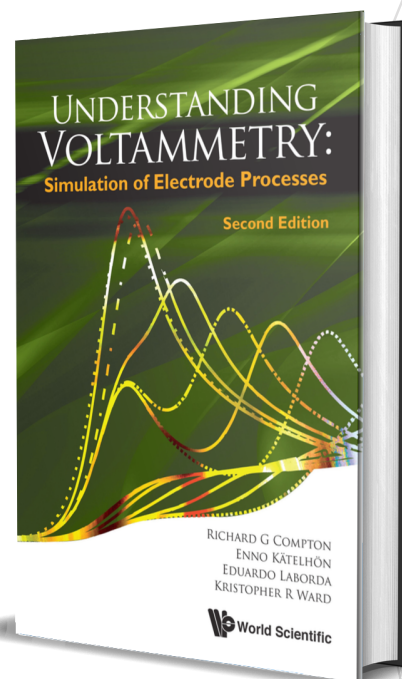
He is the Founding Editor and Editor-in-Chief of the journal *Electrochemistry Communications* published by Elsevier and is the joint Editor-in-Chief of *Current Opinion in Electrochemistry* launched in 2017.

This is the first textbook in the field of electrochemistry that will teach experimental electrochemists how to carry out simulation of electrode processes. Processes at both macro- and micro-electrodes are examined and the simulation of both diffusion-only and diffusion-convection processes are addressed. The simulation of processes with coupled homogeneous kinetics and at microelectrode arrays are further discussed.

Over the course of the book the reader's understanding is developed to the point where they will be able to undertake and solve research-level problems. The book leads the reader through from a basic understanding of the principles underlying electrochemical simulation to the development of computer programs which describe the complex processes found in voltammetry.

This second edition has been revised throughout, and contains new material relating to random walks in electrochemistry, as well as expanded materials on the checking and validation of simulations, pulse techniques, and square wave voltammetry.

324pp | Feb 2020
978-1-78634-830-2
US\$98 | £85

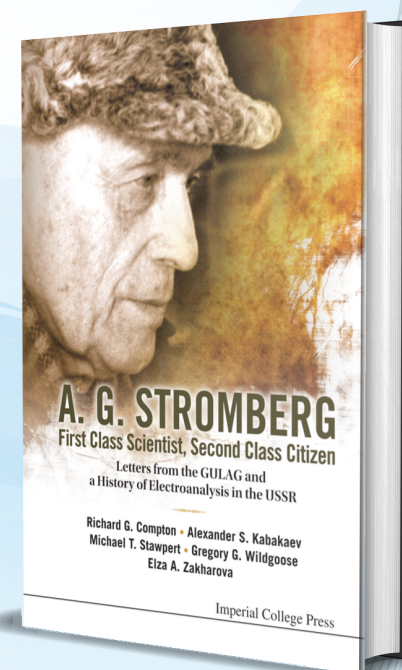


Armin G Stromberg was arguably one of the founding fathers of the technique of stripping voltammetry frequently used in chemical analysis, yet he is virtually unheard of in Western scientific circles. He was a brilliant scientist, but due to his German ancestry he was interred in one of the NKVD GULAG camps at the outbreak of the Second World War.

This semi-biographical history presents the complete set of 74 surviving letters written by Stromberg to his wife during this period. The letters provide both historians and the interested public with a rare and unique glimpse into the everyday living conditions of inmates in one of the GULAG labour camps. The book also traces Stromberg's life following his release. More importantly, it relates how he founded the thriving Tomsk school to the wider historical context of electroanalysis in the USSR, drawing conclusions about the rate of scientific development as compared to the West and showing how 'wet analysis' remained of vital importance to industry long after equivalent measurements were made elsewhere.

Readers will also appreciate how Stromberg's invaluable contributions in the Tomsk School of Electroanalysis laid the foundations for the extensive metallurgical extraction and nuclear industries that dominated the entire Siberian region for many years. This book is a must-read for anyone interested in the life and times of an important, yet often overlooked scientist of the Second World War.

376pp | Apr 2011
978-1-84816-675-2
US\$153 | £127



Scan QR code or visit:
www.worldscientific.com/page/voltammetry
20% off Promo code **WSBOOKSU20**

For orders and enquiries:

USA | Tel: 1-201-487-9655 | E-mail: sales@wspc.com
UK | Tel: 44-20-7836-0888 | E-mail: direct.orders@marston.co.uk
ASIA | Tel: 65-6466-5775 | E-mail: sales@wspc.com