

Comprehensive Chemical  
Kinetics Volume 37

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# CHEMICAL KINETICS

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## APPLICATIONS OF KINETIC MODELLING



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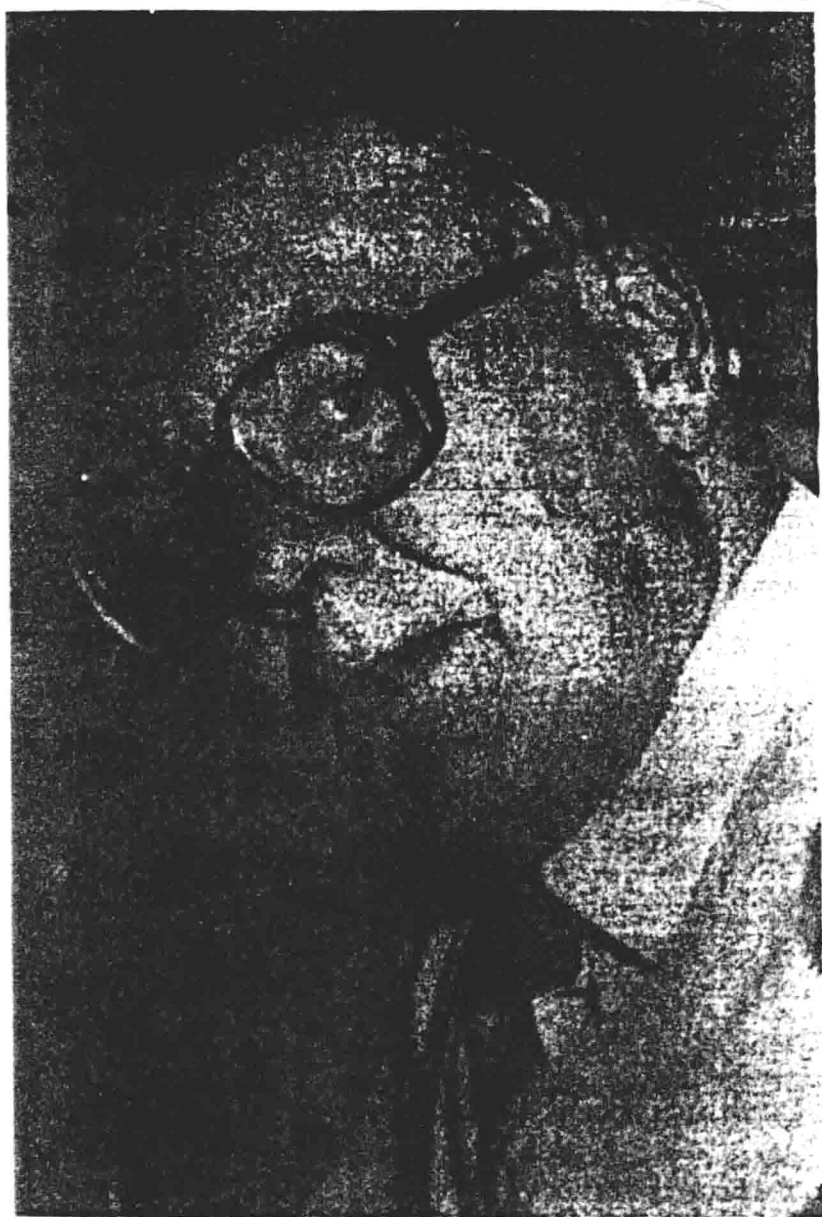
## Preface

Volume 37 is concerned with the use and role of modelling in chemical kinetics and seeks to show the interplay of theory or simulation with experiment in a diversity of physico-chemical areas in which kinetics measurements provide significant physical insight. Areas of application covered within the volume include electro- and interfacial chemistry, physiology, biochemistry, solid state chemistry and chemical engineering.

A leading contributor to this general area has been Professor W. John Albery, FRS to whom the contributors and editors dedicate this book. An appreciation of his work, written by Professor M.L. Hitchman, appears in the preceding page.

*Oxford*  
*July 1998*

R.G. COMPTON  
G. HANCOCK



Professor W. John Albery, F.R.S.

## John Albery

One enduring memory of John Albery acolytes is the unfailing and unerring way he arrived at approximate analytical solutions for complex physical chemical problems, often with the aid of the biblical-like tome of Abramowitz and Stegun. Another enduring memory many will harbour is of working on a delicate piece of instrumentation and having a laboratory visitation from the Master, which also unfailingly led to a definitive result, although not always as accurate as that achieved theoretically. This bi-functional characteristic of John Albery of being able to use theoretical models of elegant simplicity and to drive forward a research programme which also had a strong practical emphasis was celebrated in September of 1996 when a catholic group of scientists gathered at University College to mark the year of his 60 birthday. The meeting within the space of just two days was a remarkable event, for many aspects of John Albery's career were covered. His theatrical talents were marked with a review after the conference dinner involving, among others, his musical collaborator John Gould and a former scientific collaborator, Mary Archer displaying her considerable range of vocal and thespian talents. Those who have worked with John Albery over the years have also experienced his tremendous *joie de vivre* and have come to recognise him not only as an outstanding scientist, but also a *bon viveur*. And these characteristics were celebrated in gourmet and bacchanalian style. However, first and foremost in the two days, there were the scientific contributions from colleagues, students, and postdocs of the last 30 years or so. A good number of these have contributed to this volume.

John Albery's research career started off in R.P. Bell's group in the Physical Chemistry Laboratory in Oxford. This was in the early 60s and at that time major advances were being made in the study of fast reactions in solution. Ronnie Bell's interest in fast proton transfers led to John Albery working on an electrochemical technique for measuring these reactions using a rotating disk electrode. The first chapter in this volume by Rudy Marcus who, through his Honorary Fellowship at University College,

also has had a long standing relationship with John Albery links into John's kinetic interests and particularly highlights the interaction between theory and experiment which, as indicated above, has characterised so much of his career. John's doctoral work with rotating disks developed into his lifetime passion for electrochemistry and many of the other chapters in this volume reflect the impact he has had on electrochemical theory and practice in the second half of the twentieth century. John Albery has more than 150 publications on electrochemical related topics. Many of these papers have been seminal. For example, the early papers on ring-disk electrodes in the 1960s laid the basis for the extensive development of a powerful tool for electrochemical diagnostics. Papers in the 1970s on electrochemistry in ESR opened up new possibilities of monitoring electrochemical processes. And in the 1980s some of the studies of modified electrodes have thrown new light on these important electrode systems. Furthermore, John Albery's contributions have not only been at the fundamental level, but also in the application of principles to practical problems, especially in the area of sensors. All of these topics are dealt with to a greater or lesser extent in this volume.

John Albery has not just restricted the use of his talents to electrochemistry, for his interests extend into other areas of physical chemistry and beyond, for example with his very significant excursions into the chemical and biological spheres, with investigations of diffusion and transport process in two phase systems and of enzyme kinetics.

John Albery's contributions to electrochemistry, in particular, and to broader areas of physical chemistry, in general, have been recognised both nationally and internationally. He has held a number of distinguished visiting positions overseas, has been a Tilden Lecturer of the Royal Society of Chemistry, and was elected to Fellowship of the Royal Society in 1985. This volume is a small additional recognition of his achievements. It is, though, much more personal for it is dedicated to John Albery from the large number of his former students, co-workers and colleagues in the UK and worldwide for the many, many ways he has helped and furthered their professional lives and careers.

M.L. HITCHMAN

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