

BOOK REVIEW

Interfacial electrochemistry – theory, experiment, and applications. A. Wieckowski (ed), 1999, Dekker, New York. Printed pages; 966 price: US\$ 235.00. ISBN 0-8247-6000-X

This is a thick and very heavy book of almost quarto size containing 51 review articles which have in common that they concern interfacial electrochemistry. It has been written by 118 experts. The contributions have been grouped into four sections, which are entitled “Theory and modeling”, “Electrochemical surface science”, “Nonmetallic and semiconductor electrodes”, and “Electrocatalysis”. The span of the subjects is wide and my impression is that the editor attempted to cover all of what is interesting rather than to try a systematic approach with some didactic aim. However, the result is convincing and proof that the editor has made the right choice. It is impossible to give here a full review of all the chapters, but some should be mentioned to give an impression of the level and style of the book. Among others, the first section contains the following reviews: “Theoretical modeling of the solid-liquid interface: chemically specific simulation methods” (J. W. Halley, S. Walbran, D. L. Price), “Structure of water at the water-metal interface: molecular dynamics computer simulations” (M. L. Berkowitz, In-Chul Yeh, E. Spohr), “Interfacial electron transfer in electrochemistry, and in situ scanning tunneling microscopy” (E. P. Friis, M. Hallberg Thuesen, J. Zhang, J. Ulstrup). In the second section one can find the following reviews: “Reconstruction of gold surfaces” (A. S. Dakkouri, D. M. Kolb), “Atomic-scale aspects of

anodic dissolution of metals: studies by in situ scanning tunneling microscopy” (K. Itaya), “Ordered organic adlayers at electrode surfaces” (C. Buess-Herman, S. Baré, M. Poelman, M. Van kriecken), “Surface oxidation of noble metal electrodes” (G. Jerkiewicz). In the third section one can find the following reviews: “Electrochemical properties of carbon surfaces” (R. L. McCreery), “Bulk and surface states of reactive oxide films: an extended semiconductor model with Ti, Ni, and Fe as examples” (U. König, J. W. Schultze), “Solid-state voltammetry” (P. J. Kulesza, M. A. Malik), “Conducting polymer films as electrodes” (J. F. Rubinson, H. B. Mark Jr.), and others. The last section contains: “Interfacial electrochemistry of conductive oxides for electrocatalysis” (S. Trasatti), “Mechanism of methanol electro-oxidation” (A. Hamnett), and others. These examples have been chosen to show that the book contains highly interesting and important contributions, reflecting the major developments of the last decades. I see the value of the book in bringing together in one source what would otherwise be dispersed in a number of journals. Everybody in electrochemistry will find reviews which are of special importance to their work, and it can be hoped that graduate students will use it for broadening their overall understanding of electrochemistry. The book can be recommended for libraries. Private purchases will be restricted because of the high price and the non-textbook character.

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