Electrochemical Dictionary

Allen J. Bard · György Inzelt · Fritz Scholz
(Eds.)

Electrochemical Dictionary

2nd, Revised and Extended Edition

With 583 Figures and 20 Tables

Springer

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Preface to the Second Edition

The 1st edition of the "Electrochemical Dictionary" has received a very positive, even enthusiastic, resonance. It is one of the most successful e-books of Springer.

The second edition of the "Electrochemical Dictionary" provides a considerably extended coverage of terms, especially in the fields of electrochemical energy conversion and bioelectricity. Some new authors joined the project, so that their number is now 100.

All entries of the first edition were carefully revised, and references updated. In case of the journal *Annalen der Physik* which is published since 1799, and which was published and referenced under various names, e.g., *Wiedemanns Annalen*, *Poggendorfs Annalen*, etc., we have now adopted the numbering and referencing (*Ann Phys*) as used by its current publisher, and in online libraries. This will greatly facilitate finding references to that journal, in which people like Einstein, Planck and many others have published groundbreaking papers.

We hope that the 2nd edition of the "Electrochemical Dictionary" will be again recognised as a helpful tool in reading and understanding electrochemistry texts and papers.

Finally, we like to thank Dr. Steffen Pauly (Springer, Heidelberg) for his continuous support and encouragement.

Austin, Budapest, and Greifswald
July 2012

Allen J. Bard, György Inzelt,
and Fritz Scholz

Preface to the First Edition

Science needs language, not only for communication among people, but we all need language for thinking, for constructing models, for forming our ideas. Clear-cut terms that are accepted and understood by the scientific community are the basis of scientific language. The goal of this "Electrochemical Dictionary" is to provide a reference manual where the reader of electrochemical literature can quickly find short explanations of scientific terms. Fundamental definitions are very important, especially the recommendations of IUPAC, which were a primary source, where available. In many cases intensive discussion among the editors and expert authors resulted in the definitions that can be found in this book. It is our hope that the definitions of terms proposed herein will be accepted and used in the future by the scientific community. This dictionary includes not only the most frequently used terms, but also some that may be obsolete and even those whose use is discouraged. We intend the dictionary to be *encyclopedic in coverage of terms*, but relatively brief and clear in the individual entries. The goal to be encyclopedic in covering "all" terms is impossible to fulfill, partly because science is quickly developing with new terms arising almost daily, partly because it is practically impossible not to forget some. We hope that upcoming editions will close these gaps. The editors have decided to also include brief biographic entries of people who have contributed to the development of electrochemistry and have since passed away. Several of them were not electrochemists, and their contributions were mainly in the fields of physics, chemistry, and biology, but are also important in electrochemical research. Similarly, we include some entries about key techniques or materials that might be important in electrochemistry, although not directly in this field.

The authors and editors will be pleased if the "Electrochemical Dictionary" stands on the shelf of all those who read electrochemical papers and books, and if these readers will find it useful as a quick and reliable information source. Almost all entries are carefully referenced to enable the user to quickly locate the best primary sources. Of course, the authors and editors would appreciate any comments and suggestions for improvement.

We would like to thank Dr. Heike Kahlert and Dr. Birgit Meyer for their meticulous checking of literature references and the cross-referencing among the entries of the dictionary. We are equally thankful to Peter W. Enders (Springer, Heidelberg) for his continuous support and patience.

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