

Fundamentals and Applications of Organic Electrochemistry

Electrochemistry is a broad and highly interdisciplinary field, which is usually dominated by physical chemistry. In particular, most books in the area of organic electrochemistry are written for experts, or contain insufficient information to enable a synthesis-orientated chemist to begin work in the field. Since the application of electricity in synthetic organic chemistry is experiencing a renaissance, a well-written introduction for beginners in that discipline is highly desirable. This book fills a gap in the existing range of textbooks, and is devoted to the use of electricity for the electro-organic conversion of small molecules and polymeric materials. In order to present this topic to a synthesis-orientated chemist in an easily digestible form, the physical-chemical fundamentals are limited to a minimum, and in a few cases are treated in an over-simplified way.

The book is organized in eight chapters. Following short introductions to electron transfer, cyclic voltammetry, types of electrodes, and electrolytic cells, the major part of the book discusses electro-organic conversions. The book is completed by several minor chapters dealing with novel concepts in electrosynthesis, related areas, and six experimental procedures that are designed for a practical course. The monograph is carefully planned and well written. The individual sections are arranged in a good tutorial manner, enabling the reader to make a quick start in this field, and also to get an excellent insight into the authors' special

research areas, such as electrochemical fluorination.

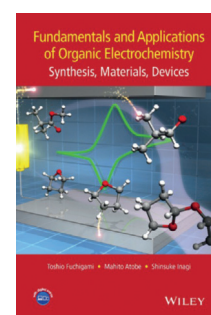
Unfortunately, the book exhibits some weak points that might discourage the synthesis-orientated chemist from using electro-organic synthesis as a routine tool. The electrode geometry and the influence of the degree of homogeneity of the electric field are not discussed. Most electrolyses within this book were carried out with a constant potential. In contrast to a galvanostatic protocol, the method described requires a three-electrode arrangement and a significantly more complex and costly experimental set-up. The list of potentially useful electrosynthetic conversions (page 64) does not include details, and consequently it is difficult for the reader to estimate the applicability of these individual transformations. Also, the book does not provide detailed protocols on how to optimize an electro-organic reaction and on which parameters one should alter systematically. Literature references are provided at the end of each chapter, but not all the subjects treated are covered by appropriate references.

Despite the weak points mentioned above, this book is the best one currently available on the market. Therefore, this book will have a firm place in every good library and is compulsory reading for organic chemists who wish to enter the field of electro-organic synthesis.

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