Girault's book is one of the first modern attempts to unite both fields, so as to provide one excellent reference textbook which should become extremely useful and handy to almost every scientist. The level chosen is that of undergraduate and graduate studies, yet the book covers most of the root concepts and methods of the discipline.

All the aspects are treated comprehensively, which means that all the physico-mathematical derivations of the laws presented are given accurately and in detail. In my view, this makes the book an excellent reference source, not only for students but also for any scientist interested in learning more about electrochemistry. It will also be valuable to those who have to teach electrochemical concepts and methods. In this respect the only defect that may be pointed out is the fact that the book exists presently only in its French version. Although this is clearly an advantage for francophone undergraduate students, it will unfortunately limit the use of this excellent book until an English translation becomes available.

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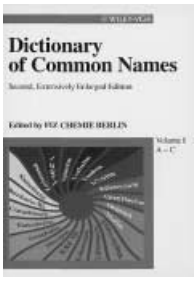
Dictionary of Common Names/Trivialnamen-Handbuch. Second, extensively enlarged, edition. Volumes 1–5. Edited by Fachinformationszentrum Chemie (FIZ Chemie) Berlin. Wiley-VCH, Weinheim 2001. xi + 4630 pp., hardcover € 2.299.00.—ISBN 3-527-30288-3



In every area where chemical compounds are involved, whether in everyday life, in commerce, in legislation, or in science, there is a need to identify them unambiguously. The two most important means of identification are the chemical formula and the name. Many compounds are known by "common" or "trivial" names, partly for historical reasons, but more importantly because, as one progresses to larger molecules, systematic nomenclature quickly leads to names that are very complicated, or at least inconveniently long. However, trivial names have the great disadvantage that, unlike systematic names, they do not allow one to deduce the structure, and everyone has at some time met the problem of identifying a compound described in a publication only by its trivial name. Consequently there has been no lack of attempts to collect together trivial names in various works of reference. The *Dictionary of Common Names*, now appearing in its second edition, is such a work, and impresses one immediately just by the size of the five-volume set. It is no less impressive in its contents, listing 51 962 common names or abbreviations for 40 027 organic compounds or substances (almost twice as many as in the first edition), with well-established constitutions. However, despite that expansion of the contents the user will not find here trivial names such as carboplatin, cisplatin, or Fremy's Salt, which belong to inorganic or organometallic compounds, and that limitation leads one to question the choice of title for the work.

The dictionary begins with an introduction consisting of a short description, in both English and German, of the work's contents and structure, and an explanation of the various data fields used. Each volume also carries on the front endpapers a brief explanation of the data panels. The introduction is followed by 4024 pages containing the data panels (each 8.7 cm × 5 cm) for each of the compounds described, arranged alphabetically according to their English trivial names. There are ten data panels on each page, and each of these contains eight data fields giving the structural formula, the molecular configuration (if known), the molecular formula, an English and a German trivial name, the Chemical Abstracts Registry number, a literature reference for further information about the compound, and the dictionary's internal reference number.

The formulas are clearly presented and easy to understand. A commendable feature is that all the methyl groups, including those attached to heteroatoms, are shown explicitly. Two criticisms are: firstly, that the directions of the shaded wedges convey a wrong perspective, and secondly that in some complicated structures, where bonds are shown crossing (e.g., in xestocyclamine B), there is no break in one of the lines to make the connectivity clear. In a few rare cases (e.g., butex, ciprokiren, sibanomicin) the space in the panel could have been used more effectively to improve readability.

It is reassuring to find that the stereodescriptors *R** and *S** and the term "relative configuration" (*rel*-) are used correctly here to describe a single isomer, whereas *RS* and *SR* are used for a mixture of two isomers, usually a racemate. This is very important in view of the many natural products and pharmaceutical compounds that are included, and especially considering that since 1997 the Chemical Abstracts Registry, and since 1999 also the Index Guide, no longer distinguish between a racemate and a pure enantiomer for which the relative, but not the absolute configuration is known. The pharmaceutical effect of a compound is in many cases very different according to whether a single enantiomer or both is administered. On the other hand it is unfortunate that the stereodescriptors often attached to the formulas are not printed in italic type, and are sometimes so far away from the relevant chiral center that they could belong to a neighboring atom; thalifarapine is an extreme example of the latter.

In contrast to the treatment of chiral centers, the configuration of double bonds is often unclear. The descriptors *E* and *Z* are often not given with the formula, even when the configuration is known, as in the case of cinnarizin (*E*), whereas sometimes for isomer mixtures (e.g., citral) or compounds for which the configuration is not defined (e.g., cinnamic acid (CA definition)) the formula is nevertheless drawn with the *E* configuration.

Fortunately, though, real errors such as these are very rare. Exceptions are the formula of glycyrrhizin (which is also wrongly drawn in other works of reference), the stereodescriptors at the prochiral centers of α-homodypnopinacolone, and the omission of HCl from the formula of adenine hydrochloride.

  1433-7851/02/4104-0659 $ 17.50+.50/0

The main route for access to the wealth of information in the work is through the detailed index in Volume 5. This second edition has the additional advantage over the first that there is only one index, in which the previous two have been consolidated. Despite the alphabetical arrangement of the compounds in Volumes 1–4, the user needs to refer frequently to the index in Volume 5, because sometimes compounds with familiar "trivial" names (e.g., acetylsalicylic acid, fumaric acid, vinblastin, vincristin) are entered in the dictionary under rarely used synonyms or trade names. This applies especially to the International Nonproprietary Names (INNs) for pharmaceuticals such as thalidomide, paracetamol, or levcromakalim, which are often referred to by trade names without making it clear that these are proprietary names. One need only consider the legal problems that can arise through the use of registered trade names. What is more serious, however, is that these are in general not synonyms for the names of the active agents. For example, indometacin is referred to as Amuno, which is actually the registered trade name of a pharmaceutical product that contains not only the active compound itself but also several formulating agents. Another shortcoming of this work is that neither the INNs nor the internationally recognized Common Names for plant protection agents are highlighted as such, even though their use is required when declaring the constituents of formulations. For a few pharmaceutical agents (e.g., cromoglicic acid, crotetamide) the correct form of the INN is not even included, while some others are omitted altogether, such as dizocilpine, efavirenz, fosinopril, and nepaprazole.

The reader seeking clarification of a synonym, trade name, developmental name, or abbreviation can first look for the name in the index, and under that entry the name and formula of the compound will be given. However, where abbreviations are concerned, one's expectations should not be too high, as the work only claims to include "abbreviations and acronyms of important compounds". There is, however, no indication of which compounds are significant enough for inclusion. Examples of some that cannot be found include COD, HEPES, MCPBA, NMDA, and TFA, while PCB, PCP, and TEA are included but are linked to compounds different from those usually meant in the literature. In any case, however, since abbreviations and acronyms often have two or even three meanings, in my view it would be useful to devote a separate work of reference to them.

Despite the shortcomings mentioned above, this vast work of reference is a valuable source of information, and it is to be hoped that it will become widely available.

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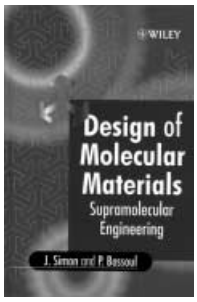
Design of Molecular Materials. Supramolecular Engineering. By *Jacques Simon* and *Pierre Bassoul.* John Wiley & Sons Inc., New York 2000. 494 pp., hardcover £ 150.00.—ISBN 0-471-97371-8

The aim of Simon and Bassoul in this book is to present a summary of molecular construction principles for materials with specific macroscopic functions, an area that has seen numerous fresh stimuli in recent years. The book is announced by Wiley on the back cover as "the book on supramolecular engineering protocols", and is intended to link organic chemistry and molecular structure through symmetry considerations with the macroscopic properties of the resulting functional materials. The chapters cover the following topics: molecular assemblies; molecular symmetry considerations; the Curie principle; interactions in molecular media; molecular semiconductors and molecular dielectrics; industrial application of molecular materials. There are several appendices containing lists of symmetry operations, symmetry symbols, and dyes. Subchapters are devoted to subjects as diverse as soaps, organic pigments and dyes, liquid crystal displays, and photocopying machines. There is a subject index.



As is clear from these very different subjects, the authors attempt to treat an extremely broad range of phenomena and applications. However, in most cases it remains unclear how the materials are related to the design principles discussed in depth in the first part of this book, in particular how symmetry operations can be applied in combination with other electronic structural considerations to deliberately create a certain type of molecular order or packing.

Apart from some chapters that are interesting and useful (such as the well-illustrated Chapter 3 on symmetry aspects), the didactic concept of the book remains unclear, and most chapters appear to be unrelated. Furthermore, the historical details overload the reader with unnecessary information in many places. Some sections do not reflect the present state of the art. For example, although hydrogen bonds have played an important role in recent years in many supramolecular assemblies, and are deliberately employed to create structures ranging from noncovalent polymers to unusual liquid crystalline materials, the subchapter on this very important design principle (Chapter 5.8) is extremely short and the references are not up-to-date, failing to cover the important developments of the last decade. Since the book—despite a lot of information on various aspects of supramolecular organization—unfortunately does not give a protocol for the systematic design of "molecular materials", it can only be recommended to chemists already experienced in the field as a quick brush-up for certain aspects.

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