

## Book review

**Encyclopedia of Separation Science, Ian D. Wilson (Editor-in-Chief), Edward R. Adlard (Managing Technical Editor), Michael Cooke, Colin F. Poole (Eds.), Elsevier, Amsterdam, 2000.**

The encyclopaedia is an extremely broad body of work covering all the possible aspects of separation science and in hard copy runs to multiple volumes and over 4800 pages. Additionally, it is now available electronically as part of the ScienceDirect reference work collection, with access via subscription or institutional membership. As with all encyclopaedias, it tries to cover a wide range of topics but can approach only a few in any depth, instead most entries aim to inform the user of the principal aspects of the subject without covering every source of information. It is much more a guide to the types of separation and the methodologies than a detailed description of particular separations, although there are liberal examples of the role of separation techniques and their application areas. In reviewing the electronic version I have concentrated on the mechanism of this approach rather than on the detailed content of the chapters.

In looking at an on-line system the first question is what advantages and disadvantages does an electronic approach offer in comparison to the printed copy. Clearly the first advantage is that physically it is more easily handled and compared to a copy of the full work on everyone's desk, it is cheaper. As with all electronic databases, the main advantage is that it should be easier to search and access the desired information. A number of search approaches are offered. Initially they are confusing and cover different aspects of the content list and may easily mislead the user. In many cases the search could also cover other publications within ScienceDirect depending on the access that has been granted. This is intended to facilitate wide information retrieval but potentially may produce much information noise and can be confusing as the coverage can alter without the user noticing.

The first starting point is the subject index, the traditional alphabetic listing of terms but in this case with electronic links to the positions within the chapters. This can be approached by scrolling through an alphabetical file, however, it is best to use the Subject search index field. The list of terms is difficult to search manually because the index terms are in

a normal font in black and are surrounded and swamped by the bold and underlined HTML links in bright blue. A situation worsened by a lack of indentation of the terms into a hierarchy of headings and subheadings, coupled with folding entries onto multiple lines. So in going down a page successive lines might be a main heading, a subheading, or part of the linking term. For example they could start in turn with: absorbed, development, extraction, absorbent, inorganic. Basically these are formatting problems probably designed to allow the text to be sized and different display formats to be accommodated but could probably have been overcome at the electronic editing stage.

There is also a Quick Search which just looks at chapter headings. A consequence is that on entering capillary, only chapter entries for capillary electrophoresis are found and no other types of capillary columns can be located. As a search routine this is probably best avoided. There are also Basic and Advanced searches both of which work on the full work but only lead to chapter headings. You then need to open the chapter and search using the "Find in this page" routine in the browser. They include facilities for stem searching but using ! not \*, which is used for single character replacement within a word.

The chapters can be displayed in two versions, a pdf file which is a direct copy of the pages in the printed work and a Full-text + links version. The latter is an attempt to move the whole concept of the work into an electronic version. References at the end of chapters or within the text have links to the full text articles (from both ScienceDirect and other publishers if your system has on-line access to those journals) and links to related chapters or sections within the encyclopaedia. Although the link from the search is to chapters there is no link to the points within the chapter where the search term appears, although in the HTML version the search terms are highlighted in the text. They will also lead to the next usage of that term.

The HTML version of the text although being linked is often disappointing in quality. The production of the pages has been hampered probably because of the very real limitations of HTML but sometimes because of operational constraints. One particular problem area is the figures which can be

displayed as thumbprints or in a full version. Clicking on the former generates the latter in a separate page. However, the quality of the figures of both sizes is often poor and on a number of occasions the full sized image was even smaller than the thumbprint picture and both were unreadable. Clearly an attempt has been made to save on the size of downloaded files but often to the point of a loss of usability. However, not all is lost as the images in the corresponding pdf files are frequently both larger and of much higher quality and can be enlarged in the pdf viewer (unlike the HTML versions).

The second problem is that HTML has problems with Greek letters ( $\alpha$ ,  $\mu$ , etc.) and accents and similar special characters, such as the Scandinavian  $\emptyset$ , which in one case appeared as a superscript  $\emptyset$  over a subscript o character. Frequently the added character appears misplaced in position and is in bold irrespective of the surrounding text. A greater problem is a marked variability in the presentation of italic and non-italics characters for symbols and terms and in equations to the extent that that an appendix covering the IUPAC nomenclature (terminology) of separation methods and chapters on the theory of chromatography are rendered unusable. So many of the entries are incorrect and the same symbol may even appear in different styles and fonts on the same line — a text translation and production problem. In equations, set of words are often run together with all the spaces omitted. In each case the original editors were not to blame as the printed version displayed in the pdf file is correctly displayed and formatted.

It takes some time to understand the structure of the files and on a number of occasions the navigation through the work failed, in particular it is difficult to return to the index after a text search without going back to the ScienceDirect main pages and re-entering the Encyclopaedia. There seemed to be no easy route back to a home page for the Separation Science book.

Clearly when an encyclopaedia reaches this size, it needs some form of search facility to enable the user to find a required expression or description and it is this attribute that makes an electronic version potentially so useful. The current work is going in the right direction but improvement is still possible. The search engine and mechanisms are still clumsy and some experience and a number of trials are needed to find which routine will yield the required information. The navigation around such a complex work should also concentrate on not leaving the user with no route to follow. The pdf files are of a high quality but the HTML files show all the limitations of the format made worse in some cases by a lack of attention to formatting and proof reading.

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