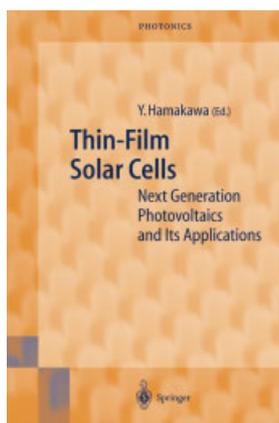


## Book Reviews

Yoshihiro Hamakawa (Ed.)

### Thin-Film Solar Cells

**Next Generation Photovoltaics and Its Applications**, Springer Series in Photonics, Vol. 13. Springer, Berlin 2004, xv + 244 pp., hardcover, Euro 106.95, ISBN 3-540-43945-5.



This book is targeted at researchers, engineers, and advanced students entering the field of thin-film solar cells or curious about this area. As such it works fine with the exception of Chapter 3. The level of difficulty is mostly well chosen and the book gives many examples of thin-film solar cell research and, especially, production processes, as well as some visions for the future. There is some overlap between the chapters and it is sometimes evident that there was no time for cross-reading between the authors. The advantage of this is that each chapter can be read and understood separately. The book addresses the Si- and SiGe-based thin-film solar cells, both nanocrystalline and amorphous, as well as CuInSe<sub>2</sub>-based solar cells and some of its alloys. CdTe-based solar cells are mentioned only very briefly and not treated in more depth in a separate chapter even though CdTe-based solar cells are both produced and sold today.

The scope of Chapter 3, by H. Okamoto, is such as to give a deep and thorough understanding of the physical and optical properties of the amorphous Si and SiGe solar cells, but in the context of this book it stands out as rather complex and difficult in comparison with the other chapters. A more intuitive approach or referencing to the other more technological chapters would have helped.

As Japan is very strong in solar cell research and also a very large and expanding market for solar cells, the choice of mostly Japanese authors can be motivated, but it gives a very strong emphasis on Japanese companies and Japanese research. All authors are, however, strong authorities in their respective fields, also from an international point of view. The Japanese market status at the end of the year 2000 and future prospects are discussed directly in Chapter 12.

Photovoltaics is a fast-moving research area, both in terms of research and in terms of formation of companies with their main interest in solar cells. Therefore the risk that some of the reviews are already outdated when the book appears is considerable. This is the case with the second chapter, by Satyen K. Deb, which describes the various companies involved in thin films; on the one hand some of them have been heavily restructured or disappeared, and on the other many of the newly formed companies are missing. Maybe the author could have been given a chance to update the data before the printing of the book.

There are a few mistakes in the layout, especially with regard to the pictures, some of which are printed with poor resolution—and in one case upside down (Fig. 1.9)—or with a caption that does not fit with the text in the figure (e.g., Fig. 9.2). Also the language could have benefited from a more thorough revision. This is not a big obstacle to understanding, but it gives the impression of a book created in haste.

In summary, this book keeps its promise to fill a gap in assembled knowledge by describing and structuring most of the manifold thin-film production processes. The emphasis is on Si- and SiGe-based solar cells, but also CuInSe<sub>2</sub> and its alloys are well represented in terms of various production processes. Chapter 3 could have been more intuitive and Chapters 2 and 12 updated directly before printing.

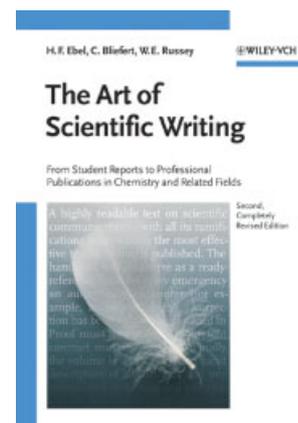
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### The Art of Scientific Writing

**From Student Reports to Professional Publications in Chemistry and Related Fields**, 2nd ed. Wiley-VCH, Weinheim 2004, xii + 596 pp., softcover, Euro 34.90, ISBN 3-527-29829.



This book is an encyclopedic description of the details of scientific writing. It covers almost everything—from keeping laboratory notebooks and the use of outlines in writing papers to the use of

word processors and the design of figures. Major sections cover “Reports”, “Dissertations”, “Journal Articles”, “Books”, “Writing Techniques” (word processing, not style), “Formulas”, “Figures”, “Tables”, and “Collecting and Citing the Literature”. The authors—experienced editors and authors—write absolutely clear, jargon-free prose. The book is a reference: if you want to know something about, say, constructing a title for a table, or how to edit copy, or how to think about organizing a book, you can find relevant information on those subjects (or almost *any* subjects related to the detail of scientific writing) here. Both the index and the table of contents are inclusive and helpful. The book has countless solid, practical pieces of advice for authors and editors: start with an outline; *read* the text you have written *aloud* to get a sense for how it sounds; write the first version of a paper in a single sitting. Most of the information is broadly applicable, although some—for example, the writing of dissertations—depends so much on local custom that it may be irrelevant to any particular student.

The book is a splendid reference for the experienced writer and editor. It answers the technical questions—especially questions specific to scientific prose—that other reference books may not. It also provides information that may help the highly motivated beginner to get started, but its tendency to comprehensive detail will make it difficult for someone struggling through the trauma of a first paper to know where to begin, or how to think about *content*: the focus is on the details of writing articles, and the book offers little guidance concerning the intellectual structure of these articles.

This book teaches how to write clearly, and how to get the details right; it does not teach how to write gracefully or engagingly. It is less about the *Art* of scientific writing than about its nuts and bolts. In the struggle between *lively* prose—prose in the first person, with opinion and personality sprinkled in—and *accurate* prose—in the passive voice, archivally correct, free of opinion or personal reference—it clearly favors the latter. It is much more a guide to the *Journal of Organic Chemistry* than to *New Scientist* or *Nature*.

This book will be useful to scientists who write enough to be concerned with the details; it will be invaluable to editors, especially editors who are relatively inexperienced in scientific editing. I don't anticipate that it will be a standard reference for my students (although its section on keeping a laboratory notebook would be valuable for everyone working at the bench); it contains more detail than people at the beginning of their writing careers can assimilate. It should, nonetheless, be in the libraries of research groups, in the section with the other books concerned with writing.

This book will improve the writing of anyone who uses it.

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