ELSEVIER

Thermochimica Acta 303 (1997) 117

thermochimica acta

Book Reviews

G. Höhne, W. Hemminger and H.-J. Flammersheim, *Differential scanning calorimetry – An introduction for practitioners*, Springer – Verlag, Berlin, 1996 (ISBN: 3-340-59012-9). 222 pages, 136 figures and 13 tables. Price: DM 178,00 (hardback).

This book fills a definite gap in the literature of thermal analysis. The modesty of the title probably does not do justice to the wealth of information contained in this slim, but beautifully produced volume. The topics covered include: types of differential scanning calorimeters, theoretical fundamentals, calibration, the features of the DSC curve and their interpretation, followed by a long chapter on applications of DSC. The book closes with a useful chapter on the evaluation of the performance of a DSC.

Appendix 1 provides a comparison of the principles of heat flux differential scanning calorimeters and DTA instruments, while Appendix 2 is a valuable synopsis of calorimetry for the majority of thermal analysts who come to use DSC without a detailed background in calorimetry. The influence of Hemminger and Höhne's earlier book 'Calorimetry – Fundamentals and Practice', VCH Verlag, Weinhein, 1984, is clear.

The single major criticism of this book is the very limited amount of material on temperature-modulated DSC – a recent development which is attracting great interest. The authors were undoubtedly overtaken by the rapid progress in this area, during the gestation time of the book, so that there are only three brief references in the Index to the technique. It is not difficult to predict that when the next edition of this book appears, modulated techniques will require a large chapter.

There are also a few minor criticisms as for example, the definitions of the characteristic features of a DSC curve appear somewhat late (p.82) after being used earlier. There are several minor typographical errors, none of which should cause any confusion. The tone of the writing varied from formal to rather informal in places and more commas would have eased the reading.

The diagrams are excellent and match well with the text, rendering explanations extremely clear. A very useful alphabetical reference list in the Harvard style of referencing, where the authors' other works can be identified for further study, has been provided at the back of the book. While reading the book I found myself noting numerous points of interest to look up.

The chapter on Applications (Chapter 6) provides some excellent descriptions of studies on melting, phase transitions and phase diagrams as well as the crystallinity of polymers and heat capacity measurements.

For me, Chapter 5 on the DSC curve, was a highlight of the book. The description of the 'desmearing' of the DSC curve, required for very accurate measurements, is most interesting. In summary, if you are a 'practitioner' of DSC, you will find it an extremely useful book.

Michael Brown

PII S0040-6031(96)03095-X