

Book Review

Dynamische thermische analysenmethoden, by Klaus Heide. VEB Deutscher Verlag für Grundstoffindustrie, Leipzig 1979. 311 pp, 171 figures, 15 photographs, 20 tables, 236 references. Price GDR M 48.—

It was indeed timely to publish this book, since no comprehensive monograph on thermal analysis in German has appeared for the past ten years. The book is divided into four parts. Opening with a short introduction, the second part discusses the physico-chemical fundamentals of thermal analysis. The third part deals with method of measurement, and the fourth part with applications of dynamic thermoanalytical methods.

The second part takes up about one third of the book (close to 100 pages). This section appears disproportionately oversized, even when considering that the main objective of the author was to approach dynamic thermoanalytical methods on a physico-chemical basis with particular regard to solid-state reactions.

The description of methods for dynamic thermoanalytical measurements is the most useful part of the book. It covers DTA, DSC, TG, evolved gas analysis, thermo-optical analysis, thermomechanical analysis, and some other special techniques. The mode of treating the subject, however, differs from the usual. For instance, the factors affecting the technique (heating rate, amount of sample, atmosphere etc.) are dealt with when discussing the DTA method. Since these factors are of importance in other techniques too, this mode of treating the subject necessarily leads to repetitions, or else to inadequacy.

Disproportions also occur within the individual sections. DSC, this very important method is described in two pages, whereas the chapter on high-temperature microscopy takes up 16 pages. It appears unfortunate that the techniques based on changes in mechanical properties, which have lately become increasingly widespread for electric insulator materials and plastics, are not described. Another deficiency to be mentioned is the absence of multiple techniques. Simultaneous dynamic thermoanalytical methods are of great importance in thermal analysis, and information on some of these methods and their results would have certainly contributed to the book's comprehensiveness.

The part dealing with the application of dynamic thermal analysis uses good examples to demonstrate the wide range of its applicability. The author's own research results are utilized in these examples, chosen above all from mineralogy, this discipline being his narrower field of interest. The only objection regarding the choice would be the absence of applications in organic and polymer chemistry.

All in all, this is the result of the thorough work of a thermal analyst disposing of extensive experiences, a book in which the author, from the angle of physical chemistry, summarizes his knowledges on thermal analysis. It is a valuable contribution to the thermoanalytical literature and can be recommended to practising thermoanalysts on all levels.

The exterior of the book is rather good, its only blemish being that it was not printed on a margin-equalizing machine.

G. LIPTAY