

**THERMAL ANALYSIS, 3RD EDITION,  
WESLEY W. WENDLANDT**

John Wiley and Sons, New York, Chichester, Brisbane, Toronto, Singapore, pp. 814

The 3rd edition of Wesley W. Wendlandt's book is 60% longer than the 2nd one. This characterizes the development of thermal analysis during the two years between the two editions. Some of the techniques have been developed further or changed, and even entirely new ones have been born, and series of commercial instruments have been produced by various companies, taking into consideration the requirements of application in this two years.

The book traditionally consists of 13 chapters. The sequence of the chapters corresponds to that in the previous edition. The book treats first the method and its theory and instrumentation, and after this gives a summary of the fields of application.

It discusses 4 recent reaction kinetic methods (Reich-Stivala, Ozawa, Master Data, parameter jump) based upon evaluation of the TG curve and gives a criticism of heterogeneous reaction kinetics and its investigation based upon the Arrhenius equation in the chapter on Thermogravimetry. In the chapter dealing with thermobalances, it considers the calibration and the description of the new commercial types, ignoring the old ones which are only of historical importance.

The volume of the chapter dealing with the applications of TG has doubled, the focus having shifted to certain material groups and industrial products from the analytical determinations. This has led to the most informative chapter of the book. There has been a characteristic increase in the number of References, from 69 to 145. A clear picture is given about the differences between DTA and DSC techniques in Chapter 5, summarizing the definite opinions developed in this field, which were earlier rather uncertain. Reaction kinetics is also used for the quantitative treatment here.

The only point where doubts can arise in practising thermoanalysts—although the thermodynamic reason is accepted—is the direction relating to the drawing of DSC curves. A broad spectrum of instruments is presented in Chapter 6.

Chapter 7, Applications of DTA and DSC, has also been increased, and its structure indicates the shift in the main point, too. Catalysts, Fuels and Pharmaceuticals are discussed independently, whereas they were mentioned in the

chapter on Organic materials in the 2nd Edition. The increased number (295) of References in this chapter is very valuable.

A systematic treatment and clarity characterize Chapter 8, dealing with EDG-EGA; its volume has more than doubled. It describes 24 techniques which utilize the EDG-EGA combination. There are more practical examples (mineralogy, resins) than text-book compounds among the applications.

According to the proposals of the ICTA Nomenclature Committee, Chapter 9 describes everything which relates to the changes in optical characteristics with temperature. Oxyluminescence and thermoluminescence are discussed in detail.

The earlier title of Chapter 10, Cryoscopic purity determination, has been changed to Cryoscopic and DSC purity determination, in accordance with the content.

In Chapter 11, which deals with Miscellaneous thermal analysis techniques, such as TDA, TMA, thermoelectrometry, thermosonimetry and thermomagnetometry, the author describes two new techniques: Accelerated calorimetry and the Sedex system (Sensitive Detector of Exothermic processes). The volume ends with the Application of Digital and Analog Computers to Thermal Analysis and a chapter summarizing the ICTA Nomenclature. As the 19th member of "A Series of Monographs on Analytical Chemistry and Its Application" (Eds; P. J. Elving and J. D. Winefordner), the volume has been edited carefully; it is fortunate that the typography is clearer than that of the former editions.

*É. Buzágh*