

Book Review

Thermal Analysis Proceedings of the Fourth International Conference on Thermal Analysis. Editor I. Buzás. Akadémiai Kiadó, Budapest, 1975. 1–3 volumes.

The ICTA conferences, organized each three years, provide an opportunity for thermal analysts to present their recent experimental results. The theoretical analysis of different chemical systems, their kinetic investigation, the clearing of the mechanism of heterogeneous reactions captivate in the same way the interest of the thermoanalysts, as the results of model experiments involving inorganic, macromolecular or geological substances. These results requested a further development of thermoanalytical instruments and their adaptation for the carrying out of complex investigations. Theoretical and practical investigations, conducted at an ever increasing level, necessitated the development of equipment with improved performance, and vice versa, the high level instruments gave inspiration for the solving of new tasks in the field of fundamental and applied research.

At the 4th ICTA Conference, organized in Budapest July 8–13, 1974, 280 lectures were given in the fields above mentioned. This proceedings contains the full text of the papers.

Volume 1 comprises 100 papers, read in Sections 1 and 2, dealing with the theory of thermal analysis and research in the field of inorganic chemistry. Volume 2 presents 72 papers on recent research in the domain of organic and macromolecular chemistry (Section 3) and earth sciences (Section 4).

Volume 3 reports in 105 papers recent trends of development in applied sciences

(Section 5) and methodics and instrumentation (Section 6).

The large amount of work which has been done by the Editor in order to prepare these volumes in such a short time and in such an excellent quality, the prompt apparition and the perfect printing quality which are the achievement of the Publishing House of the Hungarian Academy of Sciences guarantee the success of this Proceedings among the thermoanalysts.

G. LIPTAY

An Introduction to Thermogravimetry by C. J. Keattch and D. Dollimore

This Second Edition is a much expanded version of the book published in 1969 (under the Authorship of C. J. Keattch) and includes a much more comprehensive coverage of the subject of thermogravimetry.

The title of the book uses the word 'introduction' and therefore, at first glance, someone well versed in TG may pass the book over without consideration. However, this he would be ill advised to do since, i.e. the section on 'Applications' presents a wealth of detailed information.

Chapter One (titled Origins) deals with the methods of temperature measurement and traces the history of the thermobalance. Many interesting facts are presented in a high readable discussion — for instance I'm sure it is not well known that Celsius took his zero of temperature to be the boiling point of water: Chapter two considers the basic essentials of the thermobalance including furnace and balance design together with a small section on modified equipment.

Having looked at the basic equipment necessary for TG the Authors then move on to the Effects of the Experimental Environment. This is perhaps the most important section of the book since TG data is meaningless unless full note has been taken of the experimental variables. Many workers already using TG would be well advised to read this book for this section alone.

Chapter four deals with the Interpretation of Data. In this Section the Authors consider four general headings, namely Gravimetric precipitates, kinetics, thermodynamic studies and thermal stability. The heading 'Interpretation of Data' is surely misleading in that this section would be expected to explain what you do with the TG results that you have obtained, i.e. the significance of plateaux, inflections, DTG peaks etc. The information presented here is more relevant to the Applications of TG.

The Operation of the Thermobalance is then described. This Chapter deals with

two specific applications for isothermal work; kinetics and physical adsorption studies. The section of kinetics is very well presented and gives a good summary of the methods available for the determination of kinetic data. It is, possibly, unfortunate that kinetics from a dynamic TG experiment is covered briefly elsewhere, Physical adsorption studies are then considered and, although this is informative, its presence in a book on TG is open to question.

The final Chapters consider Associated Equipment (DTA, dilatometry etc.) and Applications. The Applications of TG are considered in terms of Inorganic, Organic and Applied Chemistry. Although this section comprises less than 25% of the contents of the book a large amount of information is presented which would certainly be of interest to anyone working in TG.

M. D. JUDD