

Book Review

Progress in Vacuum Microbalance Techniques, Vol. 2. Editors: S. C. Bevan, S. J. Gregg and N. D. Parkyns, Heyden & Son Ltd., London, Dec. 1973, pp 252. Price £9.00 \$25.00 D.M. 74.00

This is the second volume of a continuing series¹ and presents the proceedings of the 10th Conference on Vacuum Microbalance Techniques which was held at Brunel University, Uxbridge, England in June 1972. The volume reproduces in full the 30 papers read at the Conference. It is significant that the predominating number of papers refer to applications — and a very wide range of application. Only a relatively small number deal with apparatus, improvements or with that area that has provoked so much discussion in the past, disturbances particularly under vacuum conditions. It makes this volume (along with Vol. 1) of considerably greater interest than some of the earlier volumes published elsewhere.

At least a third of the papers report studies of some aspects of adsorption on metals, supported metals, oxides and hydroxides, molecular sieves, or on mineral materials. Oxidation studies of iron and mild steel and of graphite are reported. Two magnetic studies, one of nickel ferrite and the second of a complex halide are discussed, whilst

there are a few papers on decomposition reactions.

Associated equipment, e.g. cryostats and optical measurements such as light intensity and optical transmittance account for four papers. Two or three papers refer to the problem of noise in microbalances, particularly in vacuum thermogravimetry, indeed one paper discusses the use of thermomolecular forces for gas analysis. A complete and novel thermobalance incorporating a very rapid heat-up or cool-down microfurnace is discussed in detail. A new deflection detector which by incorporation in a feedback system can be used for constructing a microbalance movement is described. One paper presents a method of following the changes in weight of electrostatically suspended particles the changes in weight of electrostatically suspended particles in the nano and picogram range.

The book covers a wide range of applications and is therefore of interest to those using or contemplating using electronic microbalances.

The applications are relevant to physicists, chemists, metallurgists, mineralogists, and to those working in the field of materials testing.

The book is well produced and edited and free from errors.

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1. *Progress in Vacuum Microbalance Techniques*, Vol. 1. Eds T. Gast and E. Robens. Heyden & Son Ltd., 1972.