BOOK REVIEW

SOIL ANALYSIS - Modern Instrumental Techniques
Second Edition
Edited by Keith A Smith
Published by Marcel Dekker, Inc. New York, 1991, pp 672
ISBN 0-8247-8355-7

Prices: US $150 (USA and Canada): US $180 (All other Countries)

This second and enlarged edition combines the instrumental techniques with discussions of sample preparation and matrix problems, and critical reviews of applications in soil science and related disciplines. The text aims, and succeeds, to fill the gap between books covering traditional methods of analysis and the specialist monographs on individual techniques. The 14 Chapters are written by twenty contributors; 3 more Chapters than the First Edition and includes the new chapters on inductively coupled plasma (ICP) spectrometry (Chapter 2), ion chromatography (Chapter 5) and analysis of soild functional groups by NMR spectroscopy (Chapter 14) with emphasis on the nuclei ^{1}H, ^{13}C, ^{29}Si, ^{27}Al, ^{15}N amd ^{31}P. Four chapters are devoted specifically to isotopic methods with Chapter 8 (K A Smith) covering nuclear and radiochemical analysis in broad terms and touching on neutron activation analysis. The latter is discussed in Chapter 9 (L Salmon and P A Cawse) and focusses especially on instrumental aspects of this well known technique. Analysis of nitrogen, carbon and oxygen isotope ratios by optical emission spectrometry is discussed in Chapter 10 (V Middelboe and H S Johansen) with the section on analysis of $^{15}M/^{14}N$ ratios nicely complemented by the use of Mass Spectrometry for the analysis of nitrogen isotope ratios discussed in Chapter 11 (D Robinson and K A Smith). Chapter 13 (D J Eagle, J L O Jones, E J Jewell and R P Paxton) describes both gas chromatographic and high performance liquid chromatographic methods for pesticides with a useful summary table for a wide range of such compounds. Other Chapters cover atomic absorption and flame emission spectrometry (Chapter 1 - A M Ure), Ion-selective electrodes (Chapter 3 - O Talibudeen), Continuous-flow, flow-injection and discrete analysis (Chapter 4 - K A Smith and A Scott),X-ray fluorescence analysis (Chapter 7 - A A Jones), and Automated Instruments for determination of total carbon, nitrogen and sulfur in soils by combustion techniques (Chapter 6 - M A Tabatabai and J M Bremner). There are 1770 references cited and an adequate subject index concludes the text which is well produced on acid-free paper with hard

cover. As with the first edition this text is likely to be of great value to all scientists involved with the chemistry and analysis of soils.

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