

## Book Review

**Recent Advances in Analytical Spectroscopy**, by K. Fuwa. Pergamon Press, Oxford, 1982, pp. 325, ISBN 0-08-026221 1X, £42.00.

Conference lectures tend to be like the curate's egg, good in parts. The book under review is a collection of selected manuscripts of invited lecturers attending the 9th International Conference on Atomic Spectroscopy and the XXII Colloquium Spectroscopium Internationale held in Tokyo in 1981, and should be good in parts. In fact the contents range from thoroughly competent up-to-date and knowledgeable overviews of current techniques to accounts of theoretical and recent experimental work of a high order. There are inevitably, a few 'pot-boilers', long in opinion but short on substance and humility.

Velmer Fassel gives a thoroughly competent account of the applications of the inductively coupled plasma to analytical chemistry. Up-to-date and knowledgeable, it informs the newcomer to the field. Quite different, the late Professor Kirkbright's contribution is concerned with "perspectives", in the sense of depth or time, in connection with analytical chemistry and, more of an inaugural lecture in its generality, may stimulate interest in additional dimensions of "spectra" other than signal amplitude versus wavelength of radiation.

Combining XRP with XRF allows compound as well as elemental analysis of samples and L. S. Birk gives the current position of the technique and the possibilities for the future. L. de Galan *et al.* give a very personal view of what they regard as the state of the art of AAS and ICP analysis, using current instrumentation, and the influence on it of automation.

The paper by Koirtjohann and his colleagues will be of interest to those who are not aware of the presence of spatial distribution of analytical species in the ICP. More of the same comes from the pen of P. W. J. Boumans, with some additional information on noise and excitation mechanisms.

Professor Robin and his co-workers give an interesting account of their current work with He plasmas and suggest that this plasma has much to commend it. Keliher and Boyko give the history of the evolution of the DCP and describe a discrete nebulization method. Procedures used for the determination of the energies of rate-limiting atomization processes are discussed in some detail by Ivan Rubeška.

It is claimed by C. L. Chakrabarti *et al.* that the technique of Capacitive Discharge Graphite Furnace Atomic Absorption Spectrometry (CDD) has relative freedom from matrix interferences and freedom from the requirement of chemical treatment of samples, analytical calibration curves and background correction, and they describe the work from which they draw this conclusion.

The editor, K. Fuwa, describes his work on the determination of halide and sulphide species of Al, In and Ga by atomic absorption spectrometry. Van Loon draws opinionated conclusions (his words, not mine!), based on his extensive experience with elemental speciation, on the use of hybrid methods in spectroscopy.

The book also contains a thoroughly competent review by Winefordner of the instrumentation used in AFS. Equally competent and absorbing is the account of atomic spectroscopy with synchrotron radiation given by Sontag. The rest of the book contains descriptions of theoretical and experimental work on analytical scanning electron microscopy in UHV for solid surfaces, new techniques of extended electron spectroscopy, the structure of adsorbed molecules on solid surfaces by high resolution electron energy loss spectroscopy, RF plasma introduction of surface functionalities onto carbon electrodes and the characterization of such surfaces by X-ray photoelectron spectroscopy, sputtered atom light sources and overview accounts of the application of microprocessors to spectroscopy. There is also an overview account of Flow Injection Analysis,

with very little, if any, indication of its application to spectroscopy. And the collection ends with accounts of diffuse reflectance IR, FT spectroscopy and photoacoustics.

At £42 this is definitely a book for institutional buyers; the rest will be happy to read it at their expense.

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