

that these have much longer ranges in the absence of interferences than is indicated by the discussion. Important references of practical work have been overlooked, both in this and other areas (e.g. conductivity in PVC membranes) that would have helped to

make the book even more acceptable.

The criticisms offered in a constructive vein, do not greatly detract from the general tenor of a most interesting volume in the science and development of membranes and ion-selective electrodes. It generally achieves its

objectives and will be widely read with interest and profit by those engaged on work in its field.

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An excellent textbook on forensic science

Forensic Science Handbook, edited by R. Saferstein, Prentice-Hall, Inc. 1982. £26.25 (xx + 725 pages) ISBN 0 13 326850 0

This is an excellent textbook on forensic science and is probably the best book of its kind available. It gives comprehensive reviews on each of the chosen topics and is aimed at the reporting forensic scientist. Each chapter attempts to give a history and introduction to the subject, a description of why and how examinations should be made and the interpretation of the results. The presentation of the evidence to the courts is often featured, which highlights the fact that the handbook is about forensic science.

The first chapter deals with the legal aspects of forensic science and, although it concerns United States law, it has valuable lessons for all. There are three chapters on techniques (high-performance liquid chromatography (HPLC), mass spectrometry (MS) and microscopy), but they seem slightly out of place next to the chapters on the examination of the different types of evidence. However, they are competent reviews in their own right. It is interesting to note that most of the HPLC and MS chapters concern the analysis of drugs, although this is omitted as an evidence type in the rest of the book. Ten evidence types are covered, viz. glass, hair, fire accelerants, explosives, blood, paint, gunshot residues, alcohol, soil and questioned documents. The editor has done a good job in the selection of his authors and they give an authoritative account of their respective topics. There is a very good blend of sufficient practical detail for a reader to understand the analyses that are being made with information to lead the interested reader to further methodologies in the literature. In fact the volume is a good source book for the forensic science literature. Particularly of value are the comparisons of procedures for individual evidence types which are included in several

chapters. The interpretation of the results of the analysis is another important area and is covered by nearly every author with the chapter on Biochemical Markers of Individuality having a whole section on statistical considerations of the value of the data.

The handbook has a clear layout of text which is packed into its 725 pages to keep the size down. This has the result that the book looks and feels good. At its price and size it is very

good value and will undoubtedly be widely used as a teaching aid for new entrants to forensic science as well as being valuable to those specialists who wish to expand their knowledge about different disciplines. With the absence from this handbook of such topics as toxicology, fingerprints, drugs and fibres the reader is left wondering if there will be a second volume to fill the gaps.

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Raman spectroscopy for the novice

Chemical Applications of Nonlinear Raman Spectroscopy, edited by Albert B. Harvey, Academic Press, 1981. \$31.80/ROW\$48.00 (xii + 383 pages) ISBN 0 12 329050 3

All the technologies described here, except for hyper-Raman spectroscopy, are generally termed coherent Raman spectroscopy and came to prominence during the 1970s. Although coherent Raman effects were observed soon after the invention of pulsed lasers in the 1960s, widespread application did not begin until the introduction of commercial tunable dye lasers a decade ago. With these devices came the rapid development of CARS, IRS, RIKES and several other multi-laser techniques for observing Raman spectra.

Coherent Raman spectroscopy provides high resolution, even Doppler-limited Raman spectra, in short times. Spatial resolution is obtained with crossed laser beams. The signals are strong and are modulations of laser beams or laser-like emissions which can be observed in highly luminescent media. For these reasons, several major areas of applications have developed. These include studies of combustion chemistry, studies of biochemical systems and ultra-high resolution vibrational spectroscopy. Other applications are still emerging.

The present volume is a good

introduction to this field. The introductory chapter clearly explains the different experimental techniques and the esoteric jargon used to describe them. Most of the commonly used experimental configurations are described in other chapters. The discussion of photo-acoustic detection of gas phase coherent Raman spectra is the most complete treatment of this technique that has appeared. Some applications, principally combustion diagnostics, high resolution gas phase spectroscopy and spectroscopy in luminescent solutions, are discussed but the level of detail and the ratio of fact to conjecture is quite variable.

This volume suffers from the usual faults of multi-author treatises. There is substantial overlap from chapter to chapter. Moreover, some authors cite literature no later than 1978, while others carry their coverage to early 1981. Several of the chapters are quite similar to review articles published elsewhere by their authors. Consequently, those familiar with non-linear Raman spectroscopy will find the book less useful than people approaching the subject for the first time.

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