Book Reviews

Introduction to the theory of the Raman Effect

By J.A. Koningstein, published by D. Reidel Publishing Company, Dordrecht-Holland, 1972; price: £3.60.

Although this book is titled as introductory, it contains some rather advanced material. However, there are reasonably readable accounts of tensors (a chapter is devoted to them), matrices and determinants. These sections serve better as revision notes than as an introduction to the subjects despite the fact that they are meant to be the latter. Further, the reader had better be well versed in the notation and use of 3j symbols since they are introduced and used without definition, explanation or comment! Another confusion concerns the direct products of representations. Normal direct products are defined in the text (unfortunately, the definition is divided into two parts, separated by over thirty pages). In contrast, although symmetric and antisymmetric direct products are both used (and named), they are nowhere defined.

Evidently, there are aspects of this book which will confuse those who are not already well informed. This situation is reinforced by the author's frequent adoption of an '*ex cathedra*' approach, of which the first chapter – dealing with the interaction of light and matter and with the Raman scattering tensor – is a prime example.

However, despite the difficulties which the beginner will find in this book, the advanced reader will find in it a sometimes brief but, nonetheless, comprehensive (and in places very advanced) account of the subject. Indeed, within it are aspects of the subject which are in no other textbook either gathered together or treated with the detail or to the same depth. These features will commend the book to many – and particularly to those, for whom, being well versed in the field, the deficiencies referred to above are but minor irritations. The book contains but five chapters. In addition to those already mentioned, others are concerned with group theory, with the normal Raman effect and with other scattering processes. For the majority of readers, particularly the non-specialist, this book will serve best as a guide to a study of the subject rather than as the sole vehicle of such a study. Fortunately, the individual chapters contain lists of quite well selected suggestions for further reading.

Raman Spectroscopists will find the book a useful and, perhaps, challenging, addition to their bookshelf – although they will tend to refer to sections in it rather than read whole chapters of it.

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