

and techno-commercial information about the industry. It is well indexed and the references, which are given for each chapter, provide a helpful introduction to the detailed literature.

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Infrared and Raman Spectra of Inorganic and Coordination Compounds

Kazuo Nakamoto

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Part A: xiii + 387 pages; Part B: xiii + 384 pages. £95
ISBN 0-471-19406-9 (set)

The publication of the fifth edition of this book is greatly to be welcomed. This is because, ever since the production of the first edition in 1963, it has been a classic reference work for vibrational data on inorganic materials of all sorts. The current edition is the first to be published in two volumes, Part A being on *Theory and Applications in Inorganic Chemistry* and Part B being on *Applications in Coordination, Organometallic and Bioinorganic Chemistry*. The author has made many additions to earlier editions so as to include significant new work, and carried out much updating and revision of tabulated material. Nevertheless, the contents of the book must necessarily be selective in order to be kept within the bounds even of two volumes. The author has sought to achieve a broad and balanced coverage of the mass of published material in the area, and I believe that he has been very successful in this regard.

The following comments relate to the five different sections.

In Part A, Section I, 'Theory of Molecular Vibrations', the author struggles somewhat, in only 152 pages, to do justice to the many different essential topics which need to be covered. For instance, he fails to make clear that rotational and electronic Raman scattering can be detected, as well as vibrational Raman scattering. Section II, 'Applications in Inorganic Chemistry', is

one of the most valuable sections (157 pages) of the book, and includes much excellent tabular material and 1362 references.

Part A ends, as in earlier editions, with useful appendices on point groups, character tables, matrix algebra, correlation tables etc., as well as general formulae for calculating the number of normal vibrations for each species, *G* and *F* matrices of typical molecules, etc.

Part B consists of sections on 'Applications in Coordination Chemistry' (Section III, 256 pages, 1396 references), 'Applications in Organometallic Chemistry' (Section IV, 62 pages, 438 references), and 'Applications in Bioinorganic Chemistry' (Section V, 51 pages, 195 references). These are well written, are virtually free of misprints and, like the rest of the book, are accompanied by excellent diagrams and tables.

The principal criticism of the book concerns the author's disregard for the SI system, now established for a generation (at least) of students in Europe and in most of the rest of the world. This includes cases of giving a physical quantity without any units at all, viz. the molar decadic absorption coefficient (referred to as the 'molecular extinction coefficient' in Part B, p. 107 and as in Part B, p. 344), with incorrect ones (frequency for wavenumber), or with archaic ones (wavelength, ; Part B, p. 300, etc.). The worst situation occurs for the diagrams in which it would appear that the author has in every case simply taken each diagram from the journal and reproduced it unchanged from its form therein. Thus ordinates of spectral diagrams are given a dozen or so different labels (including no label at all!), while the abscissae are given a staggering 27 different labels without once using the correct one, Wavenumber/cm⁻¹. The diagrams even include cases in which neither axis is labelled, and one in which the ordinate is written in English and the abscissa in German. The publisher is as much at fault as the author on these matters, which certainly detract seriously from what is otherwise an excellent new edition of a justifiably well-known book.

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