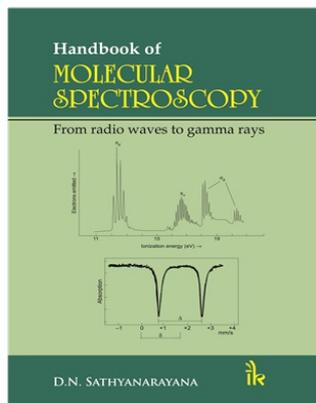


Handbook of Molecular Spectroscopy, 1/e

D.N. Sathyanarayana



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About the Book

This book provides a straightforward introduction to the spectroscopy of polyatomic inorganic and organic molecules at the master's degree courses. Students of chemistry, physics, geology and life sciences must develop an understanding of different spectroscopic techniques and their applications and therefore the book will be useful to them.

Following the general introduction to the subject, each chapter lays down the essential group theory and atomic spectroscopy required to understand molecular spectroscopy. The other chapters describe the various branches of spectroscopy: rotational, rotational-vibrational, infrared, Raman, electronic, luminescence, photoelectron and chiroptical spectroscopy.

The later chapters are devoted to magnetic resonance (NMR, ESR and NQR), Mossbauer and X-ray absorption spectroscopy. Also included is a chapter on the widely applicable analytical molecular mass spectrometry. A wide range of examples are used to describe how spectra arise and what information on the composition and structure of the molecules can be acquired from their study.

Salient Features

- ▶ Contains all materials that anybody would like to refer to in spectroscopy and therefore works as a handy stand-alone text.
- ▶ Apart from all the spectroscopic methods, the book also covers mass spectrometry in fair detail
- ▶ Provides an introduction to common spectroscopic techniques and interpretation of the spectra and their applications in organic and inorganic molecular chemistry.
- ▶ Emphasis is given on the explanation of the spectra using elementary quantum theory.
- ▶ Gives experiments and physical bases of various spectroscopic methods at relevant places.
- ▶ Contains a lot of worked examples in the text and exercises at the end of the chapters.

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About the Author

D.N. Sathyanarayana :- graduated from Mysore University and obtained his Ph.D. from the Indian Institute of Science, Bangalore. He is associated with the Department of Inorganic and Physical Chemistry, IISc. His interest has been in the area of applications of molecular spectroscopy for structural studies. He has published over 300 research articles and he is the author of the two popular books: *Vibrational Spectroscopy: Theory and Applications (3rd edition)*, and *Handbook of Molecular Spectroscopy - from radio waves to gamma rays (2nd edition)*.

Book Review

Arunima Bilal :- If you are using spectroscopy in your studies or lab, this is a must have. All common spectroscopic techniques are covered well.

Brajesh Bisht :- I am a teacher in chemistry. I have read a few chapters. I find it very lucid, and pleasantly surprised to see no error. The author has taken great pains which shows in the book.

Neelam Sharma :- Thumbs up for this extraordinary book!

Ruhee Panigra :- The solved problems supplementing the concepts are truly helpful.

Saloni Kaul :- The book provides a very wide range of applications of spectroscopy. Must buy for anyone having to do with spectroscopic methods.

Sandesh Kalra :- Lot of worked examples and exercises are there in the book for practice. A nice book to have!

Sanjay Bisht :- This is a definitive handbook on spectroscopy from an academic par excellence. Sincere thanks to the writer.

Sushant Kalra :- Spectroscopic methods and mass spectrometry are very well explained in the book. Excellent book!