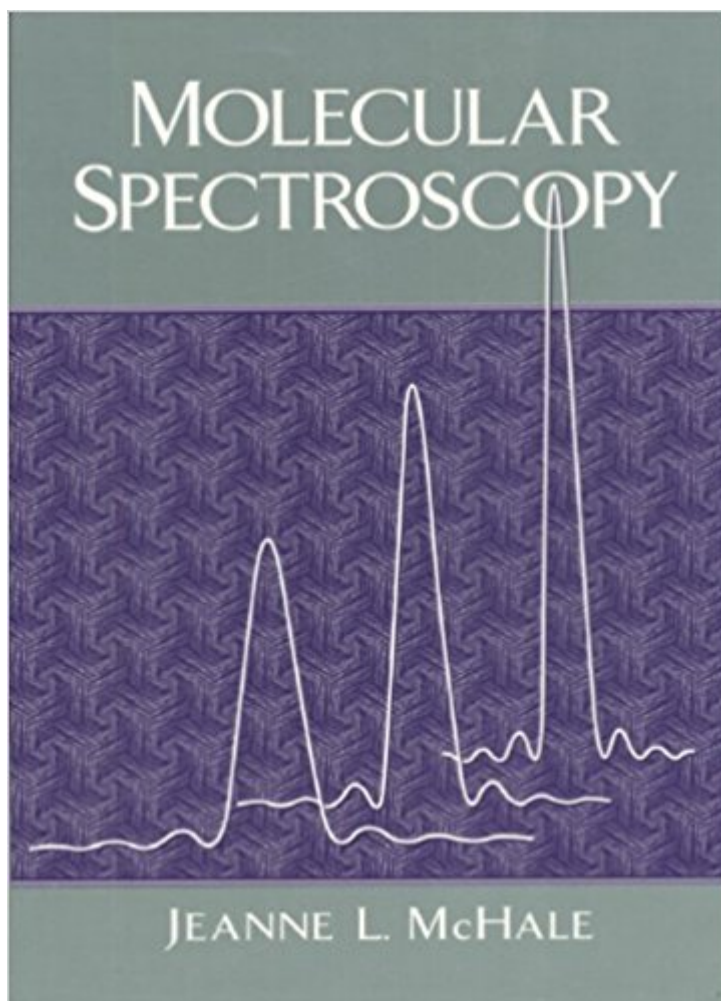


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# Molecular Spectroscopy



## Synopsis

This rigorous and engaging book presents the basic theories underlying spectroscopy while incorporating modern viewpoints of practical utility in spectroscopy research. Written in a clear, jargon-free style, it covers the quantum mechanical theoretical basis of spectroscopy, modern innovations in spectroscopy theory, such as time-dependent theory, and practical applications of spectroscopy research, including the influence of condensed phases. Begins with a brief review of quantum mechanical principles, then moves on to such areas as the properties of light, bulk electric and magnetic properties of matter, fundamental theories of spectroscopic techniques, experimental arrangements, and finally applications of the electromagnetic spectrum. Studies the time-dependent theoretical approach to interpret frequency domain spectra, allowing readers to focus on the dynamic response of the system. Provides consistent and reasonable notation throughout, frequently uses thought experiments to help readers visualize a physical situation. and poses probing questions in order to stimulate independent thinking and prompt readers to consider potentially paradoxical predictions of theory. For spectroscopists, laser technicians, analytical and physical chemists, and physicists.

## Book Information

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If you're using this as part of a graduate level course, and seeing the material for the first time, this book is not for you. It doesn't explain many things, and can be confusing. However, the real value of the book is it really pieces together molecular spectroscopy. If you already know the material, this book becomes extremely cohesive and ties concepts together for a fundamental understanding. For example, I'm told and agree with, that this book is the only one that gets Raman spectroscopy correct, by treating it as an inherently electronic process and working from there instead of starting of with your classic polarizability tensor. Other books will cover both topics, but fail to tie the two together for a clear picture, where as McHale leads from electronic spectroscopy into Raman. This book really helped in preparing for candidacy.

First impression of this book was good, but after closer inspection, I feel like Dr. McHale just gleaned what she felt was important from Herzberg and slapped it in her own book. It is heavily math based with a significant lack of phenomenological descriptions and big picture items, therefore making the content even more difficult to follow. In multiple cases, concepts were briefly mentioned, but not enough information is given in the text to really understand what she was talking about (satellite transitions/lines for example). Another very bothering issue is the problems at the end of the chapter. The problems are not on the same level of difficulty at the text, making many of them nearly impossible to solve without further explanation which is not contained in the text book. If you are in the market for a low level Spectroscopy book, consider Bernath's, or better yet, just get Herzberg's books, which are the seminal books on this very beautiful portion of Physics and Chemistry.

One of the few textbooks I have encountered which I consider well written from a both a scientific and a stylistic perspective. Jeanne McHale provides the clearest, most coherent presentation of the book's topic that I have seen. If the reader is encountering the material for the first time, I'd suggest using this book in conjunction with another, as there are details which are skimmed over here in the interest of presenting a cohesive development. But for a clear picture of the field, I don't know a better place to turn!

This book is a good source for individuals trying to learn the concepts of molecular spectroscopy. It takes care to not jump over the student's head in the presentation of the material, but it does lack the in-depth treatment of subjects needed to really understand why spectra must be the way they are. For graduate level analytical course it would be great, but I think physical chemists might walk away without the understanding they need.

This book is way overpriced. Yes, the general flow is alright, but I wouldn't pay more than \$20 for this book.

I used this text in my graduate-level spectroscopy class and my opinion is that it is completely worthless! It is unreadable and frustratingly lacking in examples and instructive ability. Stay away - you are better off using Harris and Bertolucci.

It is OK, except that it is not hardcopy, which I knew when I bought it. And I have to protect it very carefully.

A little wrap in the right corner, i didn't know where is from, maybe in the delivery. That's what i unsatisfied with!

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