DESCRIPTION

The authors describe basic theoretical concepts of vibrational spectroscopy, address instrumental aspects and experimental procedures, and discuss experimental and theoretical methods for interpreting vibrational spectra. It is shown how vibrational spectroscopy provides information on general aspects of proteins, such as structure, dynamics, and protein folding. In addition, the authors use selected examples to demonstrate the application of Raman and IR spectroscopy to specific biological systems, such as metalloproteins, and photoreceptors. Throughout, references to extensive mathematical and physical aspects, involved biochemical features, and aspects of molecular biology are set in boxes for easier reading.

Ideal for undergraduate as well as graduate students of biology, biochemistry, chemistry, and physics looking for a compact introduction to this field.

ABOUT THE AUTHOR

Friedrich Siebert is Professor for Biophysics at the University of Freiburg. He studied physics in Freiburg and Hamburg, receiving his PhD in solid-state physics. Since his diploma thesis he is working with different methods of vibrational spectroscopy. In 1972 he changed to biophysics, establishing the method of static and time-resolved infrared difference spectroscopy. Current research interests are photo-biological systems, membrane proteins and receptors, surface-enhanced techniques, time-resolved IR techniques.
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