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Sommario/riassunto	The second edition of this textbook provides a more elaborate explanation of several important group-theoretical concepts in quantum chemistry, such as: the bra-ket conjugation relation, the connection between point groups and isometries, the practical use of subduction tables, the eigenvalues of Cayley graphs, and the symmetry of Slater determinants. A new chapter introduces the application of line and plane groups to the properties of nanostructured low-dimensional molecular systems. In addition, several extra study problems are inserted to illustrate group theory at work in molecular science. The book is of great interest to advanced undergraduate and graduate students, enabling them to put the tools of group theory into practice when studying chemical problems of their own research. More experienced researchers will find in this book useful leads to the mathematical aspects of their subject.