



Structure and Bonding: RSC (Tutorial Chemistry Texts)

By Jack Barrett

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Structure and Bonding covers introductory atomic and molecular theory as given in first and second year undergraduate courses at university level. This book explains in non-mathematical terms where possible, the factors that govern covalent bond formation, the lengths and strengths of bonds and molecular shapes. Throughout the book, theoretical concepts and experimental evidence are integrated. An introductory chapter summarizes the principles on which the Periodic Table is established, and describes the periodicity of various atomic properties which are relevant to chemical bonding. Symmetry and group theory are introduced to serve as the basis of all molecular orbital treatments of molecules. This basis is then applied to a variety of covalent molecules with discussions of bond lengths and angles and hence molecular shapes. Extensive comparisons of valence bond theory and VSEPR theory with molecular orbital theory are included. Metallic bonding is related to electrical conduction and semi-conduction. The energetics of ionic bond formation and the transition from ionic to covalent bonding is also covered. Ideal for the needs of undergraduate chemistry students, Tutorial Chemistry Texts is a major series consisting of short, single topic or modular texts concentrating on the fundamental areas of chemistry taught in undergraduate science courses. Each book provides a concise account of the basic principles underlying a given subject, embodying an independent-learning philosophy and including worked examples.

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Structure and Bonding: RSC (Tutorial Chemistry Texts) By Jack Barrett Bibliography

- Sales Rank: #3594405 in Books
- Published on: 2001-06-08
- Original language: English
- Number of items: 1
- Dimensions: 9.69" h x .40" w x 7.44" l, .76 pounds
- Binding: Paperback
- 188 pages

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Review

"... a very thorough introduction ... a sound basis for further study." (*Chemistry & Industry, Issue 13, 1 July 2002, p 25*)

"... refreshingly straightforward ..." (*The Times Higher Educational Supplement, 1 March 2002*)

"... well worth having a copy in your library." (*Journal of Chemical Education, Vol 78, No 23, December 2001, p 1600*)

"... coverage is succinct, but rigorous ...the real strengths lie in the range of topics covered, and the clear and concise nature of the treatment. It is a worthy addition to the RSC series." (*Education in Chemistry, May 2002*)

From the Back Cover

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About the Author

Professor Abel is an Emeritus Professor at the University of Exeter.

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