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Book Reviews

Z. Simon: Quantum Biochemistry and Specific Interactions. Tunbridge Wells, Kent, England: Abacus Press 1976. 251 pp., £11.95

This well-documented volume represents a useful presentation of the possibilities of quantum mechanical methods for the study of biological structures and specific interactions between biomolecules and biopolymers. The first three chapters are devoted to the description of the different approximations of the molecular orbital methods and of the theory of intermolecular forces within the context of quantum mechanics and of the empirical procedures. The next two chapters deal with the exploration of the electronic and conformational properties of the essential biological compounds. The last two chapters are devoted to the problems of specific interactions and to a detailed analysis of some recognition processes.

The overall presentation of the different subjects is smooth and well arranged and the book contains a wealth of useful information. The applicability of the theoretical procedures whether quantum-mechanical or empirical is illustrated on numerous examples. As a matter of fact, large parts of the book and in particular those related to the analysis of some recognition processes present interesting subjects for deeper quantitative investigations. On the other hand, it is rather surprising that the author seems to ignore the large amount of quantum-mechanical computations which have been carried out during recent years on the conformational properties of proteins, nucleic acids and their constituents and reports only results of some relatively less significant and less efficient empirical computations on this important subject. This represents a handicap in the discussion of a number of problems.

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