

Foreword

This fourth volume of the Specialist Periodical Reports on Theoretical Chemistry contains three articles dealing with topics which are perhaps less familiar to chemists but which reflect some of the contemporary interests in theoretical chemistry.

Wilson reviews in detail many-body perturbation theory of molecules, which is one very useful technique for the inclusion of electron correlation in molecular calculations for small molecules. Ladik and Suhai at the other extreme describe the important advances which have recently been made in the study of the electronic structure of polymers, with emphasis on the use of *ab initio* methods, which have become practicable in recent years following the development of new computational schemes. Finally, March surveys the current status of the density functional approach, which gives an alternative approach to the description of atoms and molecules.

A glossary of abbreviations used in the text is given on page xi. As in previous volumes, this Reporter has not attempted to restrict the authors to the use of SI Units, and conversion factors to SI units are given on page xii.

I would like finally to thank my co-Reporter on Volumes 1—3, Professor R. N. Dixon, for his work in starting and maintaining this series of Specialist Reports.

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