

Preface

The book treats the many-electron theory of the solid state. The level makes it suitable for research workers and higher degree students in a number of disciplines: theoretical physics, materials science, solid-state chemistry all being embraced. It should be useful not only to theorists in these areas but also to experimental scientists who desire to orient their programs to address outstanding questions raised by many-body theory.

While mastery of the material in this Volume will equip the reader to research in areas such as high temperature superconductors and fractional quantum Hall effect, these topics have already been extensively treated in many review articles and books. Though they are referred to, of course, in the present volume (for example the chapter by Professor G. Baskaran raises theoretical issues very relevant to high- T_c materials), the whole work is designed to equip the dedicated reader in a wide variety of approaches to many-electron theory.

It remains for me, as Editor, to thank very sincerely all the contributors to this volume, for their splendid efforts in bringing this work to fruition and for their patience and courtesy during its production. Also, I must record here my indebtedness to a number of other scientists. First and foremost, I must single out my long-standing friend and co-Editor of the many-body volume "Theory of the Inhomogeneous Electron Gas", Professor S. Lundqvist. His support and encouragement over many years have been major factors in the continuing contributions of my own research group to many-electron theory. I must then add my gratitude to Professors A. Holas and W. H. Young for vast help at very different phases of my own studies in density functional and density matrix theories.

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