

# Contents

Preface . . . . .	v
I. Introduction . . . . .	1
1. Survey . . . . .	1
II. The Electronic Structure . . . . .	7
2. General Case: Use of the One-Electron Approximation . . . . .	7
3. Frenkel's Case: Tight Binding . . . . .	21
4. Wannier's Case: Weak Binding . . . . .	37
5. Intermediate Cases . . . . .	59
6. Effects of Static External Fields . . . . .	74
7. Special Topics . . . . .	87
III. Absorption and Dispersion of Light by Nonmetallic Solids . . . . .	103
8. Classical Theory of the Optical Effects . . . . .	103
9. Semiclassical Theory of Optical Absorption . . . . .	112
10. Dynamical Effects of Phonons . . . . .	136
11. Anomalous Waves and spatial Dispersion . . . . .	163
IV. Transport Phenomena and Related Topics . . . . .	169
12. Theory of Exciton Transport Phenomena . . . . .	169
13. Radiative Decay . . . . .	188
V. Summary . . . . .	191
AUTHOR INDEX . . . . .	195
SUBJECT INDEX . . . . .	201