

Contents

Part I

GENERAL THEORY

Linear and Nonlinear Response Theory with Applications	3
D. Langreth	
Conductivity via Nonequilibrium Statistical Physics	33
G. J. Papadopoulos	
Aspects of Linear and Nonlinear Electronic Conduction in Dissipative Media	57
K. K. Thornber	
On the Electronic Transport in Polar Solids	91
J. T. Devreese and R. Evrard	
Theory and Application of Inverse Transport Coefficients	131
N. H. March	

Part II

METALS AND SEMICONDUCTORS

Interacting Electron Gas in Metals	163
K. S. Singwi	
Effects of Correlations on the Conductivity of Electron-Hole Plasmas	199
N. Tzoar and P. M. Platzman	
Aspects of Transport in Liquid Metals	219
M. P. Tosi	

Structural Effects on Superconductivity	239
K. L. Ngai	
Classical Transport in Small-Gap Semiconductors	275
W. Zawadzki	

Part III

AMORPHOUS SEMICONDUCTORS

Solved and Unsolved Problems for Non-Crystalline Materials	327
N. F. Mott	
Theory of Hopping Conductivity in Disordered Semiconductors	341
P. N. Butcher	
Hopping Transport in High Electric Fields	383
I. G. Austin	
The Formation and Motion of Small Polarons	409
D. Emin	
Electronic Properties of Amorphous Semiconductors	435
P. Nagels	

Part IV

SEMINARS

Functional Integrals	469
G. J. Papadopoulos	
Some Recent Findings in Noise Theory and Their Implications for Transport Processes	491
K. K. Thornber	
Low Frequency Fluctuations in Electronic Transport Phenomena	515
P. Handel	
Electron-Hole Liquid Condensation in Semiconductors	549
T. L. Reinecke and S. C. Ying	

Thermodynamic and Transport Properties in the Hubbard Model	559
E. N. Economou	
Optical Determination of Hot Carrier Distribution Functions	569
G. Bauer	
Part V	
SPECIAL SEMINAR	
Softons, Softarons, and Bisoftarons in Amorphous Solids	595
E. N. Economou, K. L. Ngai, and T. L. Reinecke	
List of Lecturers	613
Author Index	615
Subject Index	625