

Contents

Contributors to Volume 9.....	v
Preface.....	vii
Contents of Previous Volumes.....	xi
Articles Planned for Future Volumes.....	xiii

The Electronic Spectra of Aromatic Molecular Crystals

H. C. WOLF

I. Introduction.....	1
II. Survey of the Spectra of Aromatic Molecules.....	2
III. The Experimental Investigation of the Spectra of Crystals of Aromatic Molecules.....	9
IV. Theory of the Spectra of Molecular Crystals and Comparison with Experiment.....	67
V. Survey.....	81

Polar Semiconductors

W. W. SCANLON

I. Introduction.....	83
II. Crystal Properties.....	84
III. Physical Chemical Properties.....	92
IV. Electrical and Optical Properties.....	109
V. Conclusions.....	136
VI. Acknowledgments.....	137

Static Electrification of Solids

D. J. MONTGOMERY

I. Foreword.....	139
II. Historical and Technical Background.....	141
III. Experimental Studies.....	144
IV. Theoretical Interpretations.....	174
V. Status of the Problem.....	184
Appendix A. Chemical Nature of Certain Polymers.....	194
Appendix B. Redistribution of Charge on the Surface of a Dielectric.....	194

The Interdependence of Solid State Physics and Angular Distribution of Nuclear Radiations

ERNST HEER AND THEODORE B. NOVEY

I. Introduction.....	200
II. The Unperturbed Angular Correlation of Nuclear Radiation.....	202

III. Extranuclear Effects Involving Nonparamagnetic Atoms.....	211
IV. Extranuclear Effects Involving Paramagnetic Atoms.....	235
V. Extranuclear Fields Created by the Nuclear Process (Radiation Damage)	241
VI. Special Topics.....	245
VII. Remarks on Experimental Techniques.....	247
VIII. Angular Distributions of Nuclear Radiations as a Tool in Solid State Physics.....	254

Oscillatory Behavior of Magnetic Susceptibility and Electronic Conductivity

A. H. KAHN AND H. P. R. FREDERIKSE

I. Introduction.....	257
II. Theory.....	258
III. Oscillatory Behavior in Bismuth.....	276
IV. Other Metals.....	287
V. Semiconductors.....	289

Heterogeneities in Solid Solutions

ANDRE GUINIER

I. Object of the Article.....	294
II. Method of Studying Faults in the Periodicity by X-Ray Scattering.....	295
III. Solid Solutions in Equilibrium.....	307
IV. Nonequilibrium Solid Solutions.....	323
V. Acknowledgments.....	398

Electronic Spectra of Molecules and Ions in Crystals

Part II. Spectra of Ions in Crystals

DONALD S. McCLURE

I. Theory of Spectra of Ions in Crystals.....	400
II. Experimental Studies of the Spectra of Ions in Crystals.....	452
AUTHOR INDEX.....	527
SUBJECT INDEX.....	539