CONTENTS OF PART I

| Preface | XIII |
|---|------|
| Planning and Organizing Committees | xiv |
| International Advisory Committee | xv |
| Acknowledgements | xv |
| | |
| COLLECTIVE PHENOMENA AT HIGH PRESSURE | |
| | |
| "Collective Phenomena at High Pressures" (Plenary Lecture) C.W. Chu and M.K. Wu | 3 |
| "Superconductivity in Elements and Binary Systems at High Pressure" Jorg Wittig | 17 |
| "Superconductivity in Ternary Compounds at High Pressure" C.B. Vining and R.N. Shelton | 29 |
| "High Pressure Method for Obtaining NbN Superconductor" A. Morawski | 39 |
| "High Pressure Superconducting Behavior of the Stage-1 Alkali Metal-Graphite Intercalation Compounds RbC ₈ and CsC ₈ " S.E. Lambert, J.W. Chen, M.B. Maple, L.E. DeLong, U. Yeh, V. Tondiglia and P.C. Eklund | 43 |
| "Pressure Dependence of the Transition Temperature of the Heavy Fermion Superconductors U ₆ X (X = Mn, Fe, Co, Ni)" L.E. DeLong, T.E. Carone, T.J. Englehardt | 47 |
| "Possibility of Synthesizing Bl-Type M _O N: A Likely High Tc Superconductor" You-xiang Zhao and Shou-an He | 51 |
| "Interplay Between Superconductivity and Itinerant Ferromagnetism in Y9 Co7" C.Y. Huang, S.A. Wolf, C.E. Olsen, W.W. Fuller, J.H. Huang and C.S. Ting | 57 |
| "A15 - Nb ₃ Si Synthesized by High Pressure Transformation of Amorphous Phase" H. Iwasaki, M. Okajima, S. Enoo, W.K. Wang and N. Toyota | 67 |
| "Effect of Hydrostatic Pressure on the Upper Critical Field of Superconducting In-Impregnated Porous Glass" William J. Standish | 71 |
| "High Pressure Study of Some ThCu ₂ Si ₂ -Type Ternary Compounds" P.H. Hor, X.C. Jin, M.K. Wu, T.H. Lin, C.W. Chu, T.H. Geballe, G.W. Hull, Jr., J.H. Wernick, R.L. Meng and Z.X. Zhao | 75 |

| "Magnetism at High Pressure" James S. Schilling | 79 |
|--|------------|
| "High Pressure and Spin Density Wave Antiferromagnetic State of Cr-Alloys" A. Jayaraman | 89 |
| "Solid Hydrogen Chloride At High Pressure" R.C. Hanson and A. Katz | 9 9 |
| "Calculation of Structures and Magnetic Orientations in Solid α -and β - 0_2 as a Function of Pressure" R.D. Etters, A. Helmy and K. Kobashi | 103 |
| "Phase Diagrams of Hexammines Studied by EPR Under High Pressure" J. Stankowski and M. Krupski | 109 |
| "Influence of High Pressure Gaseous Hydrogen on the Electrical Resistance of Ferromagnetic Ni-Cr Alloys" S.M. Filipek, H.J. Bauer and B. Baranowski | 115 |
| "Low Temperature Luminescence of Gallium Phosphide Under Hydrostatic Pressure" B. Gil, M. Baj, J. Camassel, H. Mathieu, C. Benoit, A. La Guillame, J. Pascual and L. Konczewicz | 119 |
| "Valance Instabilities: Model Predictions for Single Impurity and Cooperative Behavior" M.C. Croft, E. Kemly, A.M. Zolandz, C.U. Segre and J. Gortych | 123 |
| "Superconductivity of Sulfur Under High Pressure" G.N. Stepanov and E.N. Yakovlev | 127 |
| "Commensurate-Incommensurate Transitions in Novel Systems" D.B. McWhan | 131 |
| "Pressure Studies of Organic Superconductors" J.E. Schirber, L.J. Azevedo, J.E. Kwak, E.M. Engler and J.M. Williams | 137 |
| "The Role of Pressure in Understanding the Anomalous Superconductivity in Eu Mo ₆ S ₈ and (TMTSF) ₂ FSO ₃ " S.A. Wolf, C.Y. Huang, R.C. Lacoe, P.M. Chaikin, W.W. Fuller, H.L. Luo and F. Wudl | 143 |
| "B ₁ -B ₂ Transition of Rb and K Halides" Bin Okai | |
| "Superconducting Palladium Hybride by Low Temperature-Low Pressure Charging" W. Scholz, C.G. Homan, W.C. Moffatt and R.K. MacCrone | 157 |
| "Prediction of High Pressure Phase Transitions in Solid N ₂ and the Pressure Dependence of the Intramolecular Vibrational Frequencies" R.D. Etters, U. Chandrasekhran and K. Kobashi | |
| "A High Pressure Raman Study of the Ferroelectric to Paraelectric Transition in BaTiO ₃ and PbTiO ₃ " A. Jayaraman, J.P. Remeika and R.S. Katiyar | 165 |

| Sub-Lattices on the Parameters of Phase Transitions in PbZrO3" M. Pisarski and Z. Ujma | 169 |
|--|-----|
| "EPR Study of BaTiO ₃ Fe ³⁺ in the Tetragonal Ferroelectric Phase at High Pressure" T.D. Barnett, D.L. Decker and M.H. Ellwanger | 175 |
| "Change in the BaTiO ₃ Phase Transition to 40 KBar" D.L. Decker and You Xiang Zhao | 179 |
| "Method of Dielectric-to-Metal and Superconducting Transition Investigations Using 'Rounded Cone-Plane Anvil' Apparatus with Pressure Measurements on the Ruby Scale" Yu.A. Timofeev, B.V. Vinogradov, V.B. Begoulev and E.N. Yakovlev | 183 |
| "Anomalous Properties of Pressure Quenced CdS" C.G. Homan and R.K. MacCrone | |
| "Theoretical Models for Collective Behavior in CuCl and CdS" T.C. Collins and M. Chandrasekhar | 199 |
| "New Pairing State, Charge Density Wave, Spin Density Wave, Pairing of Holes and Superconductivity" Sang Boo Nam | 209 |
| "Thermal and X-Ray Analysis of Pressurized CdS Containing Chlorine Impurities" P.J. Cote, G.P. Capsimalis and W.C. Moffatt | 219 |
| "Spin Dependence of Possible Excitonic Superconducting States in CdS" M. Chandrasekhar and T.C. Collins | 223 |
| "Local Field Effects on Exciton Coupling in CuCl and CdS Under Pressure M.W. Ribarsky | 228 |
| "Evidence of Superconductivity in Pressure Quenced CdS" Sang Boo Nam, Y. Chung and D.C. Reynolds | 231 |
| "Possible Superlattice in High Pressure Quenced CdS" Sang Boo Nam, Tai-il Mah, R. Crane, Y. Chung and D.C. Reynolds | 235 |
| TRANSPORT PROPERTIES AT HIGH PRESSURE | |
| "High Pressure Studies of Semiconductor-Electrolyte Interfaces" (Plenary Lecture) H.G. Drickamer | 241 |
| "The Effect of Pressure on the Structural and Transport Properties of Graphite and Its Intercalation Compounds" Ctirad Uher and Roy Clarke | 251 |
| "The Thermal Conductivity of Metals Under Pressure" B. Sundqvist | 261 |

| "The Effective Mass Dependence of Electron Scattering in Semiconductors" D. Lancefield, A.R. Adams, B.J. Gunney and C.N. Ahmad |
|--|
| "New Aspects of the Valence Transition in T _M Monochalcogenides" H. Boppart and P. Wachter |
| "Pressure-Induced Phase Transitions in Tetrahedrally Bonded Semiconductors" |
| S. Minomura |
| "Empirical Relationship Between Energy Band Gap and the Refractive Index in Closed Shell Systems" |
| Arthur L. Ruoff |
| "The Effects of Pressure on Deep Electronic Levels in Semiconductors" G.A. Samara and C.E. Barnes |
| "Mossbauer Effect Study of the γ-Form of Fe ₂ SiO ₄ " K. Suito, Y. Tsutsui, S. Nasu, A. Onodera and F.E. Fujita 295 |
| "The Effect of High Pressure on an Unbalanced Bridge Based on a Single Anisotropic Monocrystal of Tellurium" Eugene W. Czaputowicz |
| "Transport Phenomena in n-InSb with Pressure Induced Extremely Low Free Carrier Concentration" A. Kadri, M. Baj, R.L. Aulombard and J.L. Robert |
| "Impurity Resonant States in Ga _{l-x} In _x Sb Mixed Crystals" L. Konczewicz, E. Litwin-Staszewska, R.L. Aulombard, M. Baj, K. Zitouni, A. Kadri and A. Joullie |
| "Electric Behavior of Lunar Regolith Samples at Extreme P, T-Conditions" R. Wasch, H. Vollstadt and H. Stiller |
| "The Effect of Pressure on Carrier Scattering in Semiconductors" T. Suski, W. Trzeciakowski and S. Porowski |
| "Electrical Properties of Solids at High Pressures" K.J. Dunn |
| "Influence of Pressure on the Fermi Surfaces of Vanadium, Rhenium and Rhodium" J.R. Anderson and J.E. Schirber |
| "The Effect of High Pressure Upon Electron Structures of Metal and Semiconductors" E.S. Itskevich |
| "Pressure Induced Valence Transitions in the TmSe-TmTe System" H. Boppart and P. Wachta |
| "Electrical Properties of Magnetite at Temperatures from 90 to 900 K at Pressure from 0 to 5.6 GPa" H.H. Schloessin and R. Govindarajan |
| "High Pressure Synthesis of Semiconducting Simple Cubic Phase Based on Antimony" Vesselin Shanov, Klauss-Jurgen Range and Franz Rau |

| "Electronically Induced Stoichiometry Violation in the Hexagonal | |
|--|----------------|
| Tantalum Nitride" | |
| R. G. Arkipov | 355 |
| | |
| | |
| Author Index | 357 |
| | |
| Subject Index | 365 |
| Dubject fines in | 10TH 10TH 10TH |