Regd. No. 16423/68

Proceedings of the Indian National Science Academy

Vol. 52, Part A, No. 1 JANUARY 1986

CONTENTS *Page*

Developments in Solid State Chemistry: A Partial Overview **C N R Rao** 1

Advanced Physical Methods for the Characterisation of Powders **A K Cheetham** 25

Low-temperature Synthesis of Novel Metal Oxides by Topochemical Reactions **J Gopalakrishnan** 48

Numerous Structures of Oxides can be built up from the ReO_3-Type Framework **B Raveau** 67

Problems of Solid State Chemistry under High Pressure Conditions: A Perspective for elaborating New Materials **Paul Hagenmuller and Gerard Demazeau** 102

Low Dimensional Ferromagnetic Compounds: Recent Developments **P Day** 117

Electrical Transport and Magnetic Properties of Oxides with K_2NiF_4 Structure **P Ganguly** 135

Sol-Gel Route to Inorganic Material Synthesis **A Sen and D Chakravorty** 159

Chemical Bond and the Nature of Inorganic Glasses **K J Rao** 176

Chemical Composition and Magnetic Interactions in Amorphous Transition Metal-Metalloid Alloys **R Jagannathan** 192

Metal-Insulator Transitions **T V Ramakarishnan** 217

Metal-Insulator Transitions in the V_2O_3 Alloy System: Experiment and Theory **J M Honig and J Spalek** 232

Divided Metals **Peter P Edwards** 265

Structure and Superconductivity in Ternary Systems of Compounds **G V Subba Rao** 292

Materials for *Saur Viddyut Kosh* (Solar Chargeble Battery) **Maheshwar Sharon, G Tamizhmani and K Basavaswaran** 311

Proton Conduction in Solids **S Chandra, N Singh and S A Hashmi** 338

Trends and Prospects in Organic Solid State Chemistry **William Jones and John M Thomas** 363

Crystal Engineering and Chemical Reactivity of Organic Molecular Solids **Gautam R Desiraju** 379

Mechanochemistry of Inorganic Solids **V V Boldyrev** 400

Anniversary Address—1986: Computer Simulation of Solid State Transformations and Molecular Transformations on Solid Surfaces **C N R Rao** 418

Published by the Executive Secretary, Indian National Science Academy, 1, Bahadur Shah Zafar Marg, New Delhi-110 002, and printed by him at the Kapoor Art Press, A38/3, Mayapuri Industrial Area, Phase I, New Delhi–110 064.