

CONTENTS

PART A. HYDROGEN IN AMORPHOUS SEMICONDUCTORS

Elements of the Theory of Amorphous Semiconductors Morrel H. Cohen	1
Electronic Structure of α -SiH E. N. Economou	15
Electron Density of States in Random Systems C. M. Soukoulis	21
A CPA Description of the Electronic and Transport Properties of α -GeH, α -SiH and α -SiGeH Aristedes D. Zdetsis	27
Fluctuation Induced Gap States in Amorphous Hydrogenated Silicon B. K. Chakraverty	39
Hydrogen Distribution in Amorphous Silicon and Silicon Based Alloys B. L. Jones	51
Hydrogen on Semiconductor Surfaces James W. Corbett, D. Peak, S. J. Pearton and A. G. Sganga	61
Hydrogen Passivation of Polycrystalline Silicon Jack I. Hanoka	81
The Influence of Hydrogen on the Defects and Instabilities in Hydrogenated Amorphous Silicon P. C. Taylor, W. D. Ohlsen, C. Lee and E. D. VanderHeiden	91
NMR Investigation of Paired Hydrogen Atoms in Plasma-Deposited Amorphous Silicon J. B. Boyce	101
Deuteron Magnetic Resonance in Some Amorphous Semiconductors V. P. Bork, P. A. Fedders, R. E. Norberg, D. J. Leopold, K. D. Mackenzie and W. Paul	111
Charge Transfer Electron-Exciton Complexes in Insulators and Semiconductors Constantine Mavroyannis	119

PART B. HYDROGEN IN DISORDERED AND AMORPHOUS METALS

Preparation, Structure and Properties of Glassy Metal Hydrides A. J. Maeland	127
Theory of Electronic States in Disordered Alloy Hydrides D. A. Papaconstantopoulos, P. M. Laufer and A. C. Switendick	139
Hydrogen in Disordered Solids: Model and Calculations R. P. Griessen	153
Formation of Amorphous Metals by Solid State Reactions of Hydrogen with an Intermetallic Compound K. Samwer	173
Thermal Stability of Hydrides of Disordered and Amorphous Alloys J. S. Cantrell, R. C. Bowman, Jr. and G. Bambakidis	185
Hydrogen in Ni-Zr Metallic Glasses E. Batalla, Z. Altounian, D. B. Boothroyd, R. Harris and J. O. Strom-Olsen	203
Mechanical Relaxation Behavior of Hydrogenated Metallic Glasses B. S. Berry and W. C. Pritchett	215
NMR Studies of the Hydrides of Disordered and Amorphous Alloys R. C. Bowman, Jr.	237
Deuteron Magnetic Resonance in α -Zr ₂ Pd _{2,9} V. P. Bork, P. A. Fedders, R. E. Norberg, R. C. Bowman, Jr. and E. L. Venturini	263
Hydrogen Diffusion in Amorphous Pd ₈₀ Si ₂₀ H ₃ - a Quasielastic Neutron Scattering Study R. Hempelmann, G. Driesen and D. Richter	273
Neutron Vibrational Spectroscopy of Disordered Metal-Hydrogen Systems R. Hempelmann and J. J. Rush	283
Hydrogen in Amorphous Cu _{1-x} Ti _x Alloys: Neutron Diffraction and Computer Simulation Studies B. Rodmacq, P. Mangin, L. Billard and A. Chamberod	303
Quasi-Elastic and Inelastic Neutron Scattering Study of CuTi Amorphous Hydrides A. J. Dianoux, B. Rodmacq, P. Mangin and H. Chamberod	315
Dynamical Disorder of Hydrogen in LaNi _{5-y} M _y Hydrides Studied by Quasi-Elastic Neutron Scattering C. Lartigue, A. J. Dianoux, A. Percheron-Guegan and J. C. Achard	327
Recent Studies of Intermetallic Hydrides W. E. Wallace, E. B. Boltich, F. Pourarian, A. Fujii and A. Pedziwiatr	339

Hydrogen Solubility in Ordered and Disordered Palladium Alloys Ted B. Flanagan, G. E. Biehl, J. D. Clewley, T. Kuji, and Y. Sakamoto	341
Determination of Hydrogen Concentration in Thin Films of Absorbing Materials Ming-Way Lee and R. Glosser	351
Comparative Studies of Amorphous and Crystalline Hydrides <i>via</i> Incoherent Scattering Nikos G. Alexandropoulos	359
Disorder Induced by Aging in Metal Tritides T. Schober	377
Tritium in Pd and Pd _{0.80} Ag _{0.20} R. Lässer and G. L. Powell	387
Hydrogen at Metallic Surfaces and Interfaces L. Schlapbach	397
Contributors	423
Index	425