Contents

Part I	Plenary Lecture	
The Developm By K. Alex M	nent of the High-Temperature Superconductivity Field Iüller	2
Part II	Theoretical Approach	***
By Hiroshi Ka	Pairing Mechanism in the High T_c Copper Oxides amimura, Shunichi Matsuno, and Riichiro Saito es)	S
The Important Symmetry in t	the Electronic Structure of High T_c Cu Compounds H. Tjeng, and G.A. Sawatzky (With 7 Figures)	20
Finite Systems By J.E. Hirsch	Studies and the Mechanism of High T_c (With 4 Figures)	34
What Can We Models?	Learn from Small-Cluster Studies on CuO ₂ and Related and M. Ogata (With 6 Figures)	44
Recent Numer	ical Studies on Models for High-T _c Superconductors	53
	and Non Fermi Liquid Phases of the Extended Hubbard	
By G. Kotliar	(With 2 Figures)	61
	es in Magnetic Insulators a, J. Inoue, and M. Miyazaki (With 5 Figures)	68
	ntization in High-Temperature Superconductivity nlin (With 10 Figures)	76
Recent Studies	of the Cu d-d Excitation Model A.L. Shelankov, and X. Zotos (With 4 Figures)	89

Electronic Structure, Fermi Liquid and Excitonic Superconductivity in the High T_c Cu-Oxides By A.J. Freeman, Jaejun Yu, and S. Massidda (With 7 Figures)	99
Local-Spin-Density-Functional Approach to High- T_c Copper Oxides By Atsushi Oshiyama, N. Shima, T. Nakayama, K. Shiraishi, and Hiroshi Kamimura (With 6 Figures)	111
Part III Experimental Approach	
III.1 Magnetic	
Quasielastic and Inelastic Spin Fluctuations in Superconducting $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ By R.J. Birgeneau, Y. Endoh, Y. Hidaka, K. Kakurai, M.A. Kastner, T. Murakami, G. Shirane, T.R. Thurston, and K. Yamada (With 6 Figures)	120
Two Dimensional Quantum Spin Fluid – Progenitor of High Temperature Superconductivity By Y. Endoh, R.J. Birgeneau, D.R. Gabee, Y. Hidaka, H.P. Jenssen, T. Murakami, M. Oda, P.J. Picone, G. Shirane, M. Suzuki, T.R. Thurston, and K. Yamada (With 5 Figures)	129
Nuclear Resonance Studies of YBa ₂ Cu ₃ O _{7-δ} By R.E. Walstedt and W.W. Warren, jr. (With 3 Figures)	137
NMR in High T_c Oxide Superconductors By Y. Kitaoka, K. Ishida, K. Fujiwara, Y. Kohori, K. Asayama, H. Katayama-Yoshida, Y. Okabe, and T. Takahashi (With 3 Figures) .	148
Charge Differentiation of Inequivalent Cu Sites of $YBa_2Cu_3O_y$ (6.0 $\le y \le 6.91$) Investigated by NQR and NMR By H. Yasuoka (With 4 Figures)	156
Mössbauer Studies of High- T_c Oxides By T. Shinjo and S. Nasu (With 11 Figures)	166
III.2 Optical	
Photoemission Studies of High- T_c Cu Oxides: Character of Doped Oxygen Holes and Pairing Mechanisms By A. Fujimori (With 7 Figures)	176
Experimental Approach to the Mechanism of High- T_c Superconductivity By H. Katayama-Yoshida, T. Takahashi, and Y. Okabe (With 10 Figures)	186

Extensive Study of the Optical Spectra for High T_c Cuprates and Related Oxides By S. Uchida, S. Tajima, H. Takagi, and Y. Tokura (With 6 Figures).	197	
Raman Scattering Spectroscopy in High Temperature Superconductors By S. Sugai (With 10 Figures)		
III.3 Tunneling		
Tunneling and the Energy Gap in the High-Temperature Superconductors By M. Lee, A. Kapitulnik, and M.R. Beasley (With 7 Figures)	220	
Energy Gap Measurement Made on Cryogenically Cleaved Y-Ba-Cu-O and Bi-Sr-Ca-Cu-O Surfaces By J.S. Tsai, I. Takeuchi, J. Fujita, T. Yoshitake, S. Miura, S. Tanaka, T. Terashima, Y. Bando, K. Iijima, and K. Yamamoto (With 9 Figures)	229	
III.4 Transport		
Transport and Magnetic Properties of $(La_{1-x}Sr)_2CuO_4$ By H. Takagi, Y. Tokura, and S. Uchida (With 6 Figures)		
Anisotropic Transport in Y-Ba-Cu-O and Bi-Sr-Ca-Cu-O By A. Zettl, A. Behrooz, G. Briceno, W.N. Creager, M.F. Crommie, S. Hoen, and P. Pinsukanjana (With 12 Figures)	249	
Transport Studies on High T_c Oxides By Y. Iye (With 8 Figures)	263	
III.5 Thermal		
Recent Experimental Studies on High- T_c Oxides at IMS By M. Sato, M. Sera, S. Shamoto, M. Onoda, S. Kondoh, K. Fukuda, and Y. Ando (With 6 Figures)	275	
III.6 Structural		
Substitution Effects in High- T_c Superconductive Oxides By T. Fujita (With 8 Figures)	284	
Strong Dependence of T_c on Hole Concentration in CuO_2 Sheets By Y. Tokura, J.B. Torrance, A.I. Nazzal, H. Takagi, and S. Uchida (With 8 Figures)	294	
Electron Microscopic Study on Ti-Ba-Cu-O Superconductor Oxides By S. Iijima (With 8 Figures)	304	

Orthorhombic-II Superstructure and Significance of Oxygen Ordering for Superconductivity in YBa ₂ Cu ₃ O _{7-\delta} By Y. Kubo and H. Igarashi (With 8 Figures)		313
Part IV	Superconductivity of Ba-K-Bi-O Compounds	
	son Between Bi-O and Cu-O Based Superconductors ogg (With 4 Figures)	324
Part V	Summary of Discussion Session	
Notes on Hakone Conference By G.A. Sawatzky		334
Index of Contributors		341
Group Pho	otograph and List of Participants	342