

Contents

1	Electronic Phase Separation and Electron–Phonon Coupling in Cuprate Superconductors	1
	Andreas Bill, Vladimir Hizhnyakov, and Götz Seibold	
2	The Search for Higher T_c in Houston	15
	C.W. Chu	
3	From Granular Superconductivity to High T_c	29
	Guy Deutscher	
4	Alex and the Origin of High-Temperature Superconductivity	35
	Takeshi Egami	
5	Encounters with Alex	47
	Kristian Fossheim	
6	The Barocaloric Effect: A Spin-off of the Discovery of High-Temperature Superconductivity	59
	Albert Furrer	
7	Personal Reflections on High-T_c Superconductivity	73
	John B. Goodenough	
8	NMR of Cuprate Superconductors: Recent Developments	77
	Michael Jurkutat, Jonas Kohlrutz, Steven Reichardt, Andreas Erb, Grant V.M. Williams, and Jürgen Haase	
9	Towards an Understanding of Hole Superconductivity	99
	J.E. Hirsch	
10	Short Scale Phase Separation of Polarons	117
	Victor V. Kabanov	

11	Jahn-Teller-Effect Induced Superconductivity in Copper Oxides: Theoretical Developments	129
	Hiroshi Kamimura, Osamu Sugino, Jaw-Shen Tsai, and Hideki Ushio	
12	Isotope Effect on the Transition Temperature T_c in Fe-Based Superconductors: The Current Status	151
	Rustem Khasanov	
13	Electron Paramagnetic Resonance in Superconducting Cuprates	165
	Boris I. Kochelaev	
14	Electron-Lattice Interaction and High T_c Superconductivity	179
	Vladimir Kresin	
15	Raman Study of the Anharmonicity in $\text{YBa}_2\text{Cu}_3\text{O}_x$	189
	Efthymios Liarokapis	
16	Inter-site Pair Superconductivity: Origins and Recent Validation Experiments	201
	Dragan Mihailovic	
17	Dynamical Lattice Distortions in High-T_c Cuprate Superconductors	213
	Jose Mustre de León	
18	Exciting Times in Condensed-Matter Physics	221
	Hans Rudolf Ott	
19	Intimacy Between Local Lattice and High Temperature Superconductivity: Perspective View on Undeniable Facts	231
	Hiroyuki Oyanagi	
20	Chemical Aspects of the Phase Separation in Alkali Metal Intercalated Iron Selenide Superconductors	243
	Ekaterina Pomjakushina and Kazimierz Conder	
21	Essential Role of Barium for Reaching the Highest T_c's in Superconducting Cuprates	253
	Bernard Raveau	
22	Scientific Remembrances and Some Comments	263
	Attilio Rigamonti	
23	Method for Accurate Determination of the Electron Contribution: Specific Heat of $\text{Ba}_{0.59}\text{K}_{0.41}\text{Fe}_2\text{As}_2$	277
	Costel R. Rotundu, Thomas R. Forrest, Norman E. Phillips, and Robert J. Birgeneau	
24	Thermal and Quantum Critical Properties of Overdoped $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$	299
	Toni Schneider	

25	Scientific Collaboration with Warm Relations	307
	A. Shengelaya	
26	Oxygen Isotope Effect Resulting from Polaron-Induced Superconductivity in Cuprates	317
	Stephen Weyeneth	

High-Tc Copper Oxide Superconductors and Related
Novel Materials

Dedicated to Prof. K. A. Müller on the Occasion of his
90th Birthday

Bussmann-Holder, A.; Keller, H.; Bianconi, A. (Eds.)

2017, XI, 322 p. 146 illus., 94 illus. in color., Hardcover

ISBN: 978-3-319-52674-4