

Contents

| | | |
|----------|--|------------|
| 1 | Guided Vortex Motion and Vortex Ratchets in Nanostructured Superconductors | 1 |
| | Alejandro V. Silhanek, Joris Van de Vondel, and Victor V. Moshchalkov | |
| 2 | High-T_c Films: From Natural Defects to Nanostructure Engineering of Vortex Matter | 25 |
| | Roger Wördenweber | |
| 3 | Ion Irradiation of High-Temperature Superconductors and Its Application for Nanopatterning | 81 |
| | Wolfgang Lang and Johannes D. Pedarnig | |
| 4 | Frontiers Problems of the Josephson Effect: From Macroscopic Quantum Phenomena Decay to High-T_C Superconductivity | 105 |
| | Antonio Barone, Floriana Lombardi, and Francesco Tafuri | |
| 5 | Intrinsic Josephson Tunneling in High-Temperature Superconductors | 137 |
| | A. Yurgens and D. Winkler | |
| 6 | Stacked Josephson Junctions | 163 |
| | S. Madsen, N.F. Pedersen, and P.L. Christiansen | |
| 7 | Point-Contact Spectroscopy of Multigap Superconductors | 187 |
| | P. Samuely, P. Szabó, Z. Pribulová, and J. Kačmarčík | |
| 8 | Nanoscale Structures and Pseudogap in Under-doped High-T_c Superconductors | 211 |
| | M. Saarela and F.V. Kusmartsev | |

| | | |
|-----------|---|-----|
| 9 | Scanning Tunneling Spectroscopy of High T_c Cuprates | 231 |
| | Ivan Maggio-Aprile, Christophe Berthod, Nathan Jenkins, Yanina Fasano, Alexandre Piriou, and Øystein Fischer | |
| 10 | Scanning Tunnelling Spectroscopy of Vortices with Normal and Superconducting tips | 257 |
| | J.G. Rodrigo, H. Suderow, and S. Vieira | |
| 11 | Surface Superconductivity Controlled by Electric Field | 281 |
| | Pavel Lipavský, Jan Koláček, and Klaus Morawetz | |
| 12 | Polarity-Dependent Vortex Pinning and Spontaneous Vortex–Antivortex Structures in Superconductor/Ferromagnet Hybrids | 299 |
| | Simon J. Bending, Milorad V. Milošević, and Victor V. Moshchalkov | |
| 13 | Superconductor/Ferromagnet Hybrids: Bilayers and Spin Switching | 323 |
| | J. Aarts, C. Attanasio, C. Bell, C. Cirillo, M. Flokstra, and J.M.v.d. Knaap | |
| 14 | Interplay Between Ferromagnetism and Superconductivity | 349 |
| | Jacob Linder and Asle Sudbø | |
| | Index | 389 |

Nanoscience and Engineering in Superconductivity
Moshchalkov, V.; Woerdenweber, R.; Lang, W. (Eds.)
2010, XVIII, 395 p., Hardcover
ISBN: 978-3-642-15136-1