

Contents

<i>Preface</i>	vii
<i>Contributors</i>	ix
<i>Future Contributions</i>	xi
1. Precession Electron Diffraction	1
<i>Alexander S. Eggeman and Paul A. Midgley</i>	
1. Introduction	1
2. Precession Electron Diffraction: Geometry and Diffracted Intensities	11
3. Structure Solution Using Precession Electron Diffraction	25
4. Applications and New Developments of PED	41
5. Conclusions	56
Acknowledgments	57
References	57
2. Scanning Helium Ion Microscopy	65
<i>Ray Hill, John A. Notte, and Larry Scipioni</i>	
1. Introduction	65
2. Scanning Helium Ion Microscope	67
3. Applications	112
4. Future Developments	139
5. Conclusion	144
Acknowledgments	144
References	144
3. Signal Reconstruction Algorithm Based on a Single Intensity in the Fresnel Domain	149
<i>Hone-Ene Hwang and Pin Han</i>	
1. Introduction	149
2. Theory	151
3. The Recursive Algorithm	156
4. Numerical Results	159

5. Conclusions	162
Acknowledgments	162
References	162
4. Electron Microscopy Studies on Magnetic L₁0-Type FePd Nanoparticles	165
<i>Kazuhisa Sato, Toyohiko J. Konno, and Yoshihiko Hirotsu</i>	
1. Introduction	166
2. Experimental Procedures	168
3. Atomic Ordering and Hard Magnetic Properties	170
4. Determination of Order Parameter by Electron Diffraction	181
5. Atomic Structure Imaging of Nanoparticles	194
6. 3D Shapes and Distribution of Nanoparticles	208
7. Concluding Remarks	217
Acknowledgments	218
References	219
5. Fundamental Aspects of Near-Field Emission Scanning Electron Microscopy	227
<i>D. A. Zanin, H. Cabrera, L. G. De Pietro, M. Pikulski, M. Goldmann, U. Ramsperger, D. Pescia, and John P. Xanthakis</i>	
1. Introduction	227
2. Instrumentation	230
3. Experimental Results	237
4. Lensless Focusing	252
5. Summary and Outlook	255
Acknowledgments	257
References	257
Contents of Volumes 151–169	259
Index	267

