

CONTENTS

<i>Contributors</i>	<i>vii</i>
<i>Preface</i>	<i>ix</i>
<i>Future Contributions</i>	<i>xi</i>
1. New Physical Principle for Interference of Light and Material Particles	1
Román Castañeda, Giorgio Matteucci	
1. Introduction	1
2. A Novel Theoretical Model	2
3. General Law of Interference	10
4. Peculiarities of the New General Law of Interference	18
5. Extended Sources and Interference from Gratings	20
6. Diffraction Effects and Uncertainty Principle	31
7. Conclusion	35
Acknowledgment	36
References	36
2. A Review of Scanning Electron Microscopy in Near Field Emission Mode	39
Taryl L. Kirk	
1. Introduction	40
2. Instrumentation	46
3. Geometric Influence on Field Emission	55
4. Primary Electron Beam Generation	60
5. Topographic Imaging	88
6. Alternative Contrast Mechanisms	89
7. Conclusions	98
Appendix A Detector Calibration	99
Appendix B Comparison of r_{eff} vs. r_{phys}	103
Acknowledgments	105
Figure Acknowledgments	106
Disclaimer	106
References	106
3. Nonscalar Mathematical Morphology	111
Jasper van de Gronde, Jos B.T.M. Roerdink	
1. Introduction	111
2. Lattice-Based Mathematical Morphology	113

3. Frames	118
4. Sponges	125
5. n -Ary Morphology	134
6. Other Approaches	139
7. Summary and Conclusions	140
References	140
4. Energy Analyzing and Energy Selecting Electron Microscopes	147
Allen J.F. Metherell	
1. Introduction	147
2. Energy Analyzing and Selecting Devices	150
3. Energy Analyzing Electron Microscopes	196
4. Energy Selecting Electron Microscopes	214
Acknowledgments	228
References	228
<i>Index</i>	231