

CONTENTS

<i>Preface to Volume 19</i>	v
<i>Contents</i>	ix
<i>Contents of Volumes 1–18</i>	xi
<i>Contributors</i>	xv
1. Magnetic Recording Heads	1
J. Heidmann and A.M. Taratorin	
1. Part I: Overview of Magnetic Recording System	1
2. Part II: Magnetic Write Heads	14
3. Part III: Magnetic Read Sensors	53
References	98
2. Spintronic Devices for Memory and Logic Applications	107
B. Dieny, R.C. Sousa, J. Hérault, C. Pappas, G. Prenat, U. Ebels, D. Houssameddine, B. Rodmacq, S. Auffret, L. Prejbeanu-Buda, M.C. Cyrille, B. Delaet, O. Redon, C. Ducruet, J.P. Nozieres and L. Prejbeanu	
1. Introduction	107
2. MTJs: A Route for CMOS/Magnetism Integration	108
3. Spin-Transfer Phenomenon	110
4. Magnetic Random Access Memories	114
5. Towards a Non-volatile Reprogrammable Logic	121
6. Conclusion	125
Acknowledgements	125
References	125
3. Magnetoelectricity	129
L.E. Fuentes-Cobas, J.A. Matutes-Aquino and M.E. Fuentes-Montero	
1. Historical Introduction: Magnetoelectricity and Multiferroicity	130
2. Fundamentals	134
3. Measurement of Magnetoelectric Properties	159
4. Single-Phase Magnetoelectric Multiferroics	171
5. Magnetoelectric Composites	209
6. Applications	219

Acknowledgements	223
References	224
4. Magnetic-Field-Induced Effects in Martensitic Heusler-Based Magnetic Shape Memory Alloys	231
M. Acet, Ll. Mañosa and A. Planes	
1. Introduction	232
2. Twin-Boundary Motion	235
3. Structural and Magnetic Properties of Martensitic Heuslers	242
4. Lattice Dynamics of Ni–Mn-Based Heusler Alloys	257
5. Field-Driven Effects	266
6. Concluding Remarks	282
Acknowledgements	283
References	283
5. Structure and Magnetic Properties of $L1_0$-Ordered Fe–Pt Alloys and Nanoparticles	291
J. Lyubina, B. Rellinghaus, O. Gutfleisch and M. Albrecht	
1. Introduction	292
2. Phase Diagram and Structure of Fe–Pt Alloys	293
3. Magnetic Properties of Fe–Pt Alloys	297
4. Structure and Magnetic Properties of Bulk Fe–Pt Alloys	309
5. Nanocrystalline Fe–Pt Materials	315
6. FePt Nanomagnets	347
7. Application of Fe–Pt Alloys	367
8. Summary	394
References	395
Author Index	409
Subject Index	429
Materials Index	435