

Contents

Preface.....	ix
Acknowledgments	xi
Editor	xiii
Contributors	xv

PART I Types of Nanoparticles

1 Amorphous Nanoparticles	1-1
<i>Vo Van Hoang</i>	
2 Magnetic Nanoparticles	2-1
<i>Günter Reiss and Andreas Hütten</i>	
3 Ferroelectric Nanoparticles	3-1
<i>Julia M. Wesselinowa, Thomas Michael, and Steffen Trimper</i>	
4 Helium Nanodroplets.....	4-1
<i>Carlo Callegari, Wolfgang Jäger, and Frank Stienkemeier</i>	
5 Silicon Nanocrystals	5-1
<i>Hartmut Wiggers and Axel Lorke</i>	
6 ZnO Nanoparticles.....	6-1
<i>Raj K. Thareja and Antaryami Mohanta</i>	
7 Tetrapod-Shaped Semiconductor Nanocrystals.....	7-1
<i>Roman Krahné and Liberato Manna</i>	
8 Fullerene-Like CdSe Nanoparticles.....	8-1
<i>Silvana Botti</i>	
9 Magnetic Ion-Doped Semiconductor Nanocrystals	9-1
<i>Shun-Jen Cheng</i>	
10 Nanocrystals from Natural Polysaccharides.....	10-1
<i>Youssef Habibi and Alain Dufresne</i>	

PART II Nanoparticle Properties

- 11 Acoustic Vibrations in Nanoparticles 11-1
Lucien Saviot, Alain Mermet, and Eugène Duval
- 12 Superheating in Nanoparticles 12-1
Shaun C. Hendy and Nicola Gaston
- 13 Spin Accumulation in Metallic Nanoparticles 13-1
Seiji Mitani, Kay Yakushiji, and Koki Takanashi
- 14 Photoinduced Magnetism in Nanoparticles 14-1
Vassilios Yannopapas
- 15 Optical Detection of a Single Nanoparticle 15-1
Taras Plakhotnik
- 16 Second-Order Ferromagnetic Resonance in Nanoparticles 16-1
Derek Walton
- 17 Catalytically Active Gold Particles 17-1
Ming-Shu Chen
- 18 Isoelectric Point of Nanoparticles 18-1
Rongjun Pan and Kongyong Liew
- 19 Nanoparticles in Cosmic Environments 19-1
Ingrid Mann

PART III Nanoparticles in Contact

- 20 Ordered Nanoparticle Assemblies 20-1
Aaron E. Saunders and Brian A. Korgel
- 21 Biomolecule-Induced Nanoparticle Aggregation 21-1
Soumen Basu and Tarasankar Pal
- 22 Magnetic Nanoparticle Assemblies 22-1
Dimitris Kechrakos
- 23 Embedded Nanoparticles 23-1
Leandro L. Araujo and Mark C. Ridgway
- 24 Coupling in Metallic Nanoparticles: Approaches to Optical Nanoantennas 24-1
Javier Aizpurua and Garnett W. Bryant
- 25 Metal-Insulator Transition in Molecularly Linked Nanoparticle Films 25-1
Amir Zabet-Khosousi and Al-Amin Dhirani
- 26 Tribology of Nanoparticles 26-1
Lucile Joly-Pottuz
- 27 Plasmonic Nanoparticle Networks 27-1
Erik Dujardin and Christian Girard

PART IV Nanofluids

28	Stability of Nanodispersions.....	28-1
	<i>Nikola Kallay, Tajana Preočanin, and Davor Kovačević</i>	
29	Liquid Slip at the Molecular Scale.....	29-1
	<i>Tom B. Sisan, Taeil Yi, Alex Roxin, and Seth Lichter</i>	
30	Newtonian Nanofluids in Convection.....	30-1
	<i>Stéphane Fohanno, Cong Tam Nguyen, and Guillaume Polidori</i>	
31	Theory of Thermal Conduction in Nanofluids.....	31-1
	<i>Jacob Eapen</i>	
32	Thermophysical Properties of Nanofluids.....	32-1
	<i>S. M. Sohel Murshed, Kai Choong Leong, and Chun Yang</i>	
33	Heat Conduction in Nanofluids.....	33-1
	<i>Liqiu Wang and Xiaohao Wei</i>	
34	Nanofluids for Heat Transfer.....	34-1
	<i>Sanjeeva Witharana, Haisheng Chen, and Yulong Ding</i>	

PART V Quantum Dots

35	Core-Shell Quantum Dots.....	35-1
	<i>Gil de Aquino Farias and Jeanlex Soares de Sousa</i>	
36	Polymer-Coated Quantum Dots.....	36-1
	<i>Anna F. E. Hezinger, Achim M. Goepferich, and Joerg K. Tessmar</i>	
37	Kondo Effect in Quantum Dots.....	37-1
	<i>Silvano De Franceschi and Wilfred G. van der Wiel</i>	
38	Theory of Two-Electron Quantum Dots.....	38-1
	<i>Jan Petter Hansen and Eva Lindroth</i>	
39	Thermodynamic Theory of Quantum Dots Self-Assembly.....	39-1
	<i>Xinlei L. Li and Guowei W. Yang</i>	
40	Quantum Teleportation in Quantum Dots System.....	40-1
	<i>Hefeng Wang and Sabre Kais</i>	
Index		Index-1