
Contents

Preface.....	vii
Acknowledgments.....	ix
Contributors	xi
Chapter 1 Functionalized Magnetic Nanomaterials and Their Applications	1
<i>Sathish-Kumar Kamaraj, Arun Thirumurugan, Sebastián Díaz de la Torre, Suresh Kannan Balasingam, and Shanmuga Sundar Dhanabalan</i>	
Chapter 2 Surface Characterization Techniques.....	15
<i>T. V. K. Karthik, M. Pérez-González, M. Morales-Luna, H. Gómez-Pozos, and A. G. Hernández</i>	
Chapter 3 Core–Shell Magnetic Nanostructures	51
<i>S. Jasmine Jecintha Kay, N. Chidhambaram, Arun Thirumurugan, and S. Gopalakrishnan</i>	
Chapter 4 Functionalized Magnetic Nanoparticles for Biomedical Applications (Treatment, Imaging, and Separation and Detection Applications).....	67
<i>O. Icten</i>	
Chapter 5 Induction of Physicochemical Effects from Functional Magnetic Nanoparticles in Biological Media and Their Potential for Alternative Medical Therapies.....	97
<i>Manoj Kumar Srinivasan, Nivedha Jayaseelan, Saravanan Alamelu, Kamalesh Balakumar Venkatesan, and Kalist Shagirtha</i>	
Chapter 6 Magnetic Nanomaterials for Microwave Absorption for Health, Electronic Safety, and Military Applications.....	121
<i>F. Ruiz Perez, F. Caballero-Briones, and S.M. López-Estrada</i>	
Chapter 7 Functionalized Magnetic Nanoparticles for Photocatalytic Applications.....	145
<i>Muhammad Munir Sajid, Haifa Zhai, Ali Raza Ishaq, Thamer Alomayri, Nadia Anwar, and Muqarrab Ahmed</i>	

Chapter 8	Recent Progress in Green Synthesis of Functionalized Magnetic Nanoparticles as Retrievable Photocatalyst	161
	<i>M. Shalini, G. Murali Manoj, R. Subramaniam Raja, H. Shankar, and R. Saidur</i>	
Chapter 9	Phylogenetic Magnetic Nanoparticles (PMNPs): Synthesis, Properties, Characterization, and Its Potential Application in Waste Water Treatment	187
	<i>J. Jennifer Annis Christy, S. Sham Sait, M. Karthikeyan, RM. Murugappan, and S. Benazir Begum</i>	
Chapter 10	Magnetic Nanomaterials for Solar Energy Conversion Applications	211
	<i>R. Dhivya, N. Karthikeyan, S. Kulandai Terese, R. Thenmozhi, A. Judith Jayarani, M. Swetha, F. Caballero-Briones, and G. Sahaya Dennish Babu</i>	
Chapter 11	Functionalized Magnetic Nanoparticles for Energy Storage Applications.....	229
	<i>Manas Mandal and Krishna Chattopadhyay</i>	
Chapter 12	Functionalized Magnetic Nanomaterials for Data Storage Applications.....	255
	<i>Sivanantham Nallusamy, Vasanthi Venkidusamy, N. Chidhambaram, Durga Prasad Pabba, Shajahan Shanavas, and Arun Thirumurugan</i>	
Index		281