Contents

Preface	XI
Section 1	
Preparation of Novel Nanomaterials	1
Chapter 1 Hydrothermal Synthesis of Zinc Tin Oxide Nanostructures for Photocatalysis, Energy Harvesting and Electronics	3
by Ana Isabel Bento Rovisco, Rita Branquinho, Joana Vaz Pinto, Rodrigo Martins, Elvira Fortunato and Pedro Barquinha	
Chapter 2 Investigation of Alternative Techniques for Graphene Synthes by Betül Gürünlü and Mahmut Bayramoğlu	27
Chamton 3	45
Chapter 3 Preparation of Hollow Nanostructures via Various Methods and Their Applications by Rudy Tahan Mangapul Situmeang	40
Chapter 4 Preparation, Properties and Use of Nanocellulose from Non-Velant Materials by Valerii Barbash and Olga Yaschenko	Wood 61
Chapter 5	85
Synthesis and Applications of Organic-Based Fluorescent Car Technical Review by Musa Yahaya Pudza and Zurina Z. Abidin	
Section 2 Energy Storage and Harvesting Applications of Nanomateria	ls 113
Chapter 6 Carbon-Based Nanocomposite Materials for High-Performan	115 ce
Supercapacitors by Prasanta Kumar Sahoo, Chi-Ang Tseng, Yi-June Huang and C	Chuan-Pei Lee
Chapter 7 3D Ionic Networked Hydrophilic-Hydrophobic Nano Channe Triboelectric Nanogenerators by Ravi Kumar Cheedarala	141 eled

Section 3	
Nanomaterials for Biosensors	155
Chapter 8	157
Novel Two-Dimensional Siloxene Material for Electrochemical Energy	207
Storage and Sensor Applications	
by Rajendran Ramachandran, Zong-Xiang Xu and Fei Wang	
Chapter 9	171
The Novel Nanomaterials Based Biosensors and Their Applications	1,,
by Kübra Gençdağ Şensoy and Mihrican Muti	
Chapter 10	197
Perspectives of Nano-Materials and Nanobiosensors in Food Safety	1)/
and Agriculture	
by Sivaji Mathivanan	
Chapter 11	219
Ti ₃ C ₂ MXene-Based Nanobiosensors for Detection of Cancer Biomarkers	219
by Lenka Lorencova, Kishor Kumar Sadasivuni, Peter Kasak and Jan Tkac	
Continue	
Section 4 Biomedical and Environmental Applications of Nanomaterials	251
bioincurear and Environmental Applications of ivalionaterials	251
Chapter 12	253
Green Synthesis of Metal Nanoparticles for Antimicrobial Activity	
by Jerushka S. Moodley, Suresh Babu Naidu Krishna, Karen Pillay	
and Patrick Govender	
Chapter 13	279
Preparation, Structural Characterization, and Biomedical Applications	
of Gypsum-Based Nanocomposite Bone Cements	
by Hesham F. El-Maghraby and Yaser E. Greish	
Chapter 14	297
Nanoengineered Polysaccharide-Based Adsorbents as Green Alternatives	
for Dye Removal from Wastewater	
by Hugues Kamdem Paumo, Lebogang Katata-Seru, Tshepiso Moremedi,	
Mpitloane Joseph Hato, Soumen Sardar and Abhijit Bandyopadhyay	
Section 5	
Applications of Nanomaterials in Coating and Building Industries	315
Chanton 15	247
Chapter 15 Nanostructured Materials for the Development of Superhydrophobic Coatings	317
by Jeyasubramanian Kadarkaraithangam,	
Thangaiyanadar Suyambulingam Gokul Raja,	
Silambuselvan Parani Bramma Nayagi	
and Karthikeyan Krishnamoorthy	
Chapter 16	331
Novel Applications of Nanoparticles in Nature and Building Materials	331
by Juyoung Ha	