

Contents

<i>Preface</i>	<i>v</i>
<i>Contributors</i>	<i>ix</i>
1 Nanovesicles for Nanomedicine: Theory and Practices	1
<i>Sheetu Wadhwa, Varun Garg, Monica Gulati, Bhupinder Kapoor, Sachin Kumar Singh, and Neeraj Mittal</i>	
2 Preparation and Characterization of Micelles	19
<i>Vandana B. Patravale, Prashant G. Upadhaya, and Ratnesh D. Jain</i>	
3 Anionic and Cationic Vitamin E-TPGS Mixed Polymeric Phospholipid Micellar Vehicles	31
<i>Mingyi Yao and Tamer Elbayoumi</i>	
4 Phospholipid Micelles for Peptide Drug Delivery	43
<i>Karina Esparza, Dulari Jayawardena, and Hayat Onyukel</i>	
5 Design, Preparation, and Characterization of Peptide-Based Nanocarrier for Gene Delivery	59
<i>Mohsen Alipour and Saman Hosseinkhani</i>	
6 Gelatin Nanoparticles	71
<i>Rania M. Hathout and Abdelkader A. Metwally</i>	
7 Green Synthesis of Chitosan-Silver/Gold Hybrid Nanoparticles for Biomedical Applications	79
<i>Ibrahim M. El-Sherbiny and Mohammed Sedki</i>	
8 Methods of Fabrication of Chitosan-Based Nano-in-Microparticles (NMPs)	85
<i>Ibrahim M. El-Sherbiny and Amr Hefnawy</i>	
9 Fabrication of Mucoadhesive-Dendrimers as Solid Dosage Forms	93
<i>Nidhi Raval, Rahul Maheshwari, Kiran Kalia, and Rakesh Kumar Tekade</i>	
10 In Situ Vaccination of Tumors Using Plant Viral Nanoparticles	111
<i>Abner A. Murray, Mee Rie Sheen, Frank A. Veliz, Steven N. Fiering, and Nicole F. Steinmetz</i>	
11 Bioconjugation in Drug Delivery: Practical Perspectives and Future Perceptions	125
<i>Perihan Elzabhar, Ahmed S. F. Belal, Fatema Elamrawy, Nada A. Helal, and Mohamed Ismail Nounou</i>	
12 Conjugation of Triphenylphosphonium Cation to Hydrophobic Moieties to Prepare Mitochondria-Targeting Nanocarriers	183
<i>Diana Guzman-Villanueva, Mark R. Mendiola, Huy X. Nguyen, Francis Yambao, Nusem Yu, and Volkmar Weissig</i>	
13 Surface Modification of Biomedically Essential Nanoparticles Employing Polymer Coating	191
<i>Rahul Maheshwari, Nidhi Raval, and Rakesh Kumar Tekade</i>	

Contents

14	Peptide-Modified Gemini Surfactants: Preparation and Characterization for Gene Delivery	203
	<i>Mays Al-Dulaymi, Waleed Mohammed-Saeid, Anas El-Aneed, and Ildiko Badea</i>	
15	Preparation of Responsive Carbon Dots for Anticancer Drug Delivery	227
	<i>Tao Feng and Yanli Zhao</i>	
16	Surface Modification of Nanoparticles and Nanovesicles via Click-Chemistry	235
	<i>Matthias Voigt, Thomas Fritz, Matthias Worm, Holger Frey, and Mark Helm</i>	
17	Polymersomes: Preparation and Characterization	247
	<i>Yumiao Hu and Liyan Qiu</i>	
18	Partially Polymerized Phospholipid Vesicles for Efficient Delivery of Macromolecules	267
	<i>Megha Goshi, Nicholas Pytel, and Tamer Elbayoumi</i>	
19	Fabrication of Nanostructured Lipid Carriers (NLC)-Based Gels from Microemulsion Template for Delivery Through Skin	279
	<i>Medha D. Joshi, Rashmi H. Prabhu, and Vandana B. Patravale</i>	
20	Preparation and Characterization of Solid Lipid Nanoparticles-Based Gel for Topical Delivery	293
	<i>Vandana B. Patravale and Amit G. Mirani</i>	
21	Molecular-Level “Observations” of the Behavior of Gold Nanoparticles in Aqueous Solution and Interacting with a Lipid Bilayer Membrane	303
	<i>Priyanka A. Oroskar, Cynthia J. Jameson, and Sohail Murad</i>	
22	Atomic Force Microscopy for Cell Membrane Investigation	361
	<i>Mingjun Cai and Hongda Wang</i>	
23	Physicochemical Characterization of Phthalocyanine-Functionalized Quantum Dots by Capillary Electrophoresis Coupled to a LED Fluorescence Detector	373
	<i>Gonzalo Ramírez-García, Fanny d’Orlyé, Tebello Nyokong, Fethi Bedioui, and Anne Varenne</i>	
24	In Vitro Testing of Anticancer Nanotherapeutics Using Tumor Spheroids	387
	<i>Avanti Ganpule, Zishu Gui, Mohammed A. Almuteri, and Gerard G. M. D’Souza</i>	
	<i>Index</i>	395