## Contents

### Part I  Focus on Tissue Engineering

**Chitosan Hydrogels for Regenerative Engineering**  ....................................................  3  
Aiswaria Padmanabhan and Lakshmi S. Nair  

**Prospects of Bioactive Chitosan-Based Scaffolds in Tissue Engineering and Regenerative Medicine**  ..............................................  41  
M. Prabaharan and P.R. Sivashankari  

**Chitosan-Based Scaffolds for Cartilage Regeneration**  ..............................................  61  
Xuezhou Li, Jianxun Ding, Xiuli Zhuang, Fei Chang, Jincheng Wang and Xuesi Chen  

**Composite Chitosan-Calcium Phosphate Scaffolds for Cartilage Tissue Engineering**  ..............................................  83  
Anuhya Gottipati and Steven H. Elder  

**Chitosan-Gelatin Composite Scaffolds in Bone Tissue Engineering**  ..........  99  
M. Nivedhitha Sundaram, S. Deepthi and R. Jayakumar  

**Chitin and Chitosan Nanocomposites for Tissue Engineering**  ...........  123  
Arun Kumar Mahanta and Pralay Maiti  

**Chitin, Chitosan, and Silk Fibroin Electrospun Nanofibrous Scaffolds: A Prospective Approach for Regenerative Medicine**  ...........  151  
Brijesh K. Singh and Pradip Kumar Dutta
## Part II  Focus on Therapeutics, Functionalization and Computer Aided Techniques

**Chitosan: A Potential Therapeutic Dressing Material for Wound Healing** .................................................. 193
D. Archana, Pradip Kumar Dutta and Joydeep Dutta

**Recent Advances in Chitosan-Based Nanomedicines for Cancer Chemotherapy** .................................... 229
Ankit Saneja, Chetan Nehate, Noor Alam and Prem N. Gupta

**Chitosan: A Promising Substrate for Regenerative Medicine in Drug Formulation** ................................. 261
Madhu Kashyap, D. Archana, Alok Semwal, Joydeep Dutta and Pradip Kumar Dutta

**D-Glucosamine and N-Acetyl D-Glucosamine: Their Potential Use as Regenerative Medicine** .............. 279
Tanvi Jain, Hridyesh Kumar and Pradip Kumar Dutta

**Functionalized Chitosan: A Quantum Dot-Based Approach for Regenerative Medicine** ....................... 297
Hridyesh Kumar and Pradip Kumar Dutta

**Development and Selection of Porous Scaffolds Using Computer-Aided Tissue Engineering** ................. 351
Nitin Sahai, Tanvi Jain, Sushil Kumar and Pradip Kumar Dutta

**Author Index** ................................................................................................................................. 389
Chitin and Chitosan for Regenerative Medicine
Dutta, P.K. (Ed.)
2016, IX, 389 p. 112 illus., Hardcover