

Table of Contents

Preface

Chapter 1: Functional Biomaterials

Bioinspired and Multifunctional Phospholipid Polymer Nanoparticles K. Ishihara, W.X. Chen and Y. Inoue	3
Functionalizing Surface Electrical Potential of Hydroxyapatite Coatings L. Pluduma, E. Freimanis, K. Gross, H. Koivuluoto, K. Algate, D. Haynes and P. Vuoristo	12
Sol-Gel Synthesis of Bioglasses: A Growth Kinetics Study by Dynamic Light Scattering R. Borges and J. Marchi	18
Antibacterial Nanocoatings for Ocular Applications F. Baino, S. Perero, M. Miola and M. Ferraris	24

Chapter 2: Tissue Engineering

Developmentally Inspired Approach to Cartilage Tissue Engineering E. Jabbari	31
Effect of Dynamic Polyrotaxane Coating on Cytoskeletal Signaling Expression of Adhering Stem Cells and Downstream Differentiations J.H. Seo, M. Hirata, S. Kakinoki, T. Yamaoka and N. Yui	37

Chapter 3: Biomedical Technologies for Clinical Imaging and Therapy

Legumain Targeting Peptide Conjugated Fluorescent Porous Silicon Nanoparticles for Breast Cancer Imaging J.S. Kanathasan, V. Swamy, U.D. Palanisamy and A.K.G.K. Radhakrishnan	45
A Protease-Activated Ratiometric Fluorescent Probe for pH-Mapping of Malignant Tumor Y. Hou, J. Zhou, Z.Y. Gao, X.Y. Sun, C.Y. Liu, D.H. Shangguan, W.S. Yang and M.Y. Gao	51
Relaxor Single-Crystal Plates with Nano-Size Ferroelectric Domains Applying to Ultrasonic Probe for Medical Uses T. Ogawa and T. Ikegaya	57
A Stretchable and Flexible Platform for Epidermal Electronics M. Meyer, N. Van Binh, V. Calero, L. Baraban, J. Rogers and G. Cuniberti	65
A Direct Comparison of Glassy Carbon and PEDOT-PSS Electrodes for High Charge Injection and Low Impedance Neural Interfaces M. Vomero, E. Castagnola, E. Maggiolini, F. Ciarpella, I. Rembado, N. Goshi, L. Fadiga, S. Kassegne and D. Ricci	68
Recording High Frequency Neural Signals Using Conformable and Low-Impedance ECoG Electrodes Arrays Coated with PEDOT-PSS-PEG E. Castagnola, M. Marrani, E. Maggiolini, F. Maita, L. Pazzini, D. Polese, A. Pecora, L. Maiolo, G. Fortunato, L. Fadiga and D. Ricci	77