

Table of Contents

Committee

Preface

Session 1 - Materials Synthesis, Functionalization, Characterization

Helical Rosette Nanotubes: Topographical and Chemical Roles in Osteoblast Attachment A.L. Chun, T.J. Webster and H. Fenniri	1
PVA-HAp Nanocomposites for Artificial Cornea H. Kobayashi	9
Self-Organized Metal Oxide Exhibiting Enhanced Bioactivity R.L. Karlinsey, A.T. Hara and C.W. Duhn	17
New Approaches to Lipid Bilayer Fabrication: Microfluidic Solvent Extraction and Hydrogel Encapsulation N. Malmstadt, T.J. Jeon, M. Nash, R. Purnell and J.J. Schmidt	22
Size-Controlled Hydroxyapatite Nanoparticles as Self-Organized Organic-Inorganic Composite Materials J.X. Zhang, M. Iwasa and D.L. Jiang	32
Organic Modification of Titania Sol-Gels and Surfaces E.C. Pegg, D. Farrar, C.A. Scotchford, G.S. Walker and D.M. Grant	38
In Vitro Evaluation of Osteoblast and Fibroblast Responses to Precipitated Nano-Particulate Calcium Carbonate M.E. Clark, C. Engel, P.J.C. Felstead, D.M. Walter, D. Farrar, G.S. Walker, C.A. Scotchford and D.M. Grant	44
Folic Acid Immobilized Ferrimagnetic DP-Bioglass to Target Tumor Cell for Cancer Hyperthermia Treatment M.H. Chen, C.K. Hsu, F.H. Lin, L. Stobinski and J. Peszke	50

Session 2 - Tissue Engineering and Drug Delivery

Better Tissue Engineering Materials through the Use of Nanotechnology B. Ercan and T.J. Webster	58
Nano-Fabricated Aligned Spheroid for Cartilage Tissue Engineering H. Otsuka, T. Satomi, K. Ueno and T. Tateishi	67
Thermo-Intelligent Surfaces for Cell Culture T. Okano	70
Nanotechnology-Based Cell Sheet Engineering for Regenerative Medicine M. Yamato and T. Okano	74
Release of Proteins from Nanochannel Delivery Systems: A Coupled Many-Scale Simulation - Experimental Investigation S. Pricl, M. Ferrone, P. Cosoli, M.S. Paneni, M. Fermeiglia, C. Cosentino, F. Amato, M.M.C. Cheng and M. Ferrari	79

Session 3 - Nanobiodevices

Neurite Development in PC12 Cells on Nanostructured Substrates G.G. Zhang, F. Haq and A. Venkatramani	85
Nano-Bio Interface - Neural & Molecular Functions K. Torimitsu	91
'Top Down' Approaches for the Study of Single-Cells: Micro-Engineering and Electrical Phenotype V. Senez, T. Akalin, S. Arscott, N.E. Bourzgui, B. Bocquet, T. Fujii, E. Lennon and T. Yamamoto	97
Nano Patterned Surfaces for Biomaterial Applications N. Gadegaard, M.J. Dalby, E. Martinez, K. Seunarine, M.O. Riehle, A.S.G. Curtis and C.D.W. Wilkinson	107

Controlled Release of Thrombin Using Aptamer-Based Nanodevices S. Beyer, W.U. Dittmer, A. Reuter and F.C. Simmel	116
Modulation of Biological Properties of Silicon Nitride for Biosensor Applications by Self-Assembled Monolayers J. Gustavsson, G. Altankov, A. Errachid, J. Samitier, J.A. Planell and E. Engel	122