

Table of Contents

Preface for Special Section

Synthesis and Electrochemical Properties of Cu-Doped LiMnPO₄/C Nanorods as Cathode Materials of Lithium-Ion Batteries

L.F. Yuan, L.L. Ge, Y.H. Shen, H. Zhang, C.P. Wang and A.J. Xie 1

Antioxidant and Antimicrobial Activity of Tellurium Dioxide Nanoparticles Sols

C.L. Zhong, B.Y. Qin, X.Y. Xie and Y. Bai 8

The Profile of Payload Release from Gold Nanoparticles Modified with a BODIPY®/PEG Mixed Monolayer

D. Kumar, I. Mutreja, B.J. Meenan and D. Dixon 16

Electrokinetic Potential for Characterization of Nanosctructured Solid Flat Surfaces

Z. Kolská, N.S. Kasálková, J. Siegel and V. Švorčík 31

“Short” Dithiol and Au Nanoparticles Grafting on Plasma Treated Polyethyleneterephthalate

V. Švorčík, Z. Kolská, J. Siegel and P. Slepíčka 40

Creating a Monocrystalline Membrane via Etching and Sealing of Nanoholes Considering its Sealing Behavior

S. Ebschke, R.R. Poloczec, K.T. Kallis and H.L. Fiedler 49

Backside Illumination of an Electronic Photo Ionization Detector Realized by UV Transparent Thin Films

C.M. Zimmer, C. Asbeck, D. Lützenkirchen-Hecht, P. Glösekötter and K.T. Kallis 55

Growth, Structure and Optical Properties of CuNi-Oxide Films for Nanophotonics and Photovoltaics

S.D. Pappas, S. Grammatikopoulos, P. Pouloupoulos, D. Trachylis, M.J. Velgakis, E.I. Meletis, W. Schommers and C. Politis 61

Structural and Morphological Changes in Ag:TiN Nanocomposite Films Promoted by In-Vacuum Annealing

D. Machado, P. Pedrosa, C. Fonseca, N. Martin and F. Vaz 67

Electrochemical Anodizing, Structural and Mechanical Characterization of Nanoporous Alumina Templates

A.P. Samantilleke, J.O. Carneiro, S. Azevedo, T. Thuy and V. Teixeira 77

Mechanical, Barrier, Physicochemical, and Heat Seal Properties of Starch Films Filled with Nanoparticles

A.M. Nafchi and A.K. Alias 90

Special Section

In Situ Characterization of the Mechanical Behavior of Gecko’s Spatulae by Atomic Force Microscopy

S.Y. Liu, M.M. Tang, A.K. Soh and L. Hong 101

Sol-Gel Synthesized Copper-Substituted Cobalt Ferrite Nanoparticles for Biomedical Applications

N. Sanpo, J. Wang and C.C. Berndt 110

Nanosized TiC and TiCN Powders Prepared by Magensiothermic Reduction

D.W. Lee, Y.K. Baek, I.S. Seo, J.N. Kim and J.P. Wang 122

Preparation and Characterization of Nano Particle Reinforced Polyactides Composite

C.Y. Chee, Y.Y. Rosiyah and G. Li 128

Effect of Chain Morphology and Carbon-Nanotube Additives on the Glass Transition Temperature of Polyethylene

137

Fabrication of High-Verticality Grating Nanostructures Using Twice-Deposited Etching Mask Layers

145

A Research on Ultra Precision Machining for Ti-6AL-4V Alloy Based Biomedical Applications Using Nanopositioning Mechanism

N.S. Kwak, J.Y. Kim and D.G. Park 157

Characterization of Fabricated Feedstock Using Nano Powders and a Water-Soluble Binder in Micro Metal Injection Molding

R. Javad, N. Muhamad, A.B. Sulong, A. Hasyimah, A. Fayyaz and H. Zakaria 174

Molecular Dynamics Simulation of Fracture Strength and Morphology of Defective Graphene

M.C. Wang, C. Yan, D. Galpaya, Z.B. Lai, L. Ma, N. Hu, Q. Yuan, R.X. Bai and L.M. Zhou

181

A Molecular Dynamics Simulation of Fracture in Nanocrystalline Copper

188