

Table of Contents

Preface

Chapter 1: Material Identification

Sunlight-Mediated Synthesis of Metallic Silver Nanoparticles with Coffee (<i>Robusta/Arabica</i>) Pulp Aqueous Extract for Hg²⁺ Ion Detection J.P. Bantang, R.K. Abadiano, K.P. Viron, C.T. Tugahan, Z.F. Payag, D.H. Camacho, G.N.C. Santos and J.L. Leano Jr.	3
Atomic Force Microscopy Characterization of Polyacrylamide Substrate for Traction Force Application R. Rosario, S. Ohura, D. Miyashiro, K. Umemura and M.N.P. Confesor	15
SRIM Simulation of Ion Beam Irradiation Effects on Oxide Thin Films C.W.S. Estrada and J.D. Tare	25

Chapter 2: Polymers and Composites

A Density Functional Theory Study on the Interaction of Cellulose Biopolymer and Atomic A.A.Z. Munio, A.Q. Liboon Jr., Y.J. Lagud, U.B. Patayon, A.A.G. Pido, M. Karouchi and L.C.C. Ambolode II	39
Influence of Porous Manganese-Containing Fillers on the Electrodynamic Characteristics of Absorbing Polymer Composite Materials S.G. Guzii, O. Prysiashna, S.D. Lapovska, O. Khodakovskyy and V. Pokaliuk	47

Chapter 3: Nanomaterials

Silver Nanowire-PVB Composite for Reflective Heat Coating M.G.M. Domingo and M.D.L. Balela	59
Silver Nanoparticles/Titanium Dioxide Nanowires Photocatalyst Formation for Microplastic Removal Using Ultraviolet Radiation L.R. Xuen, N. Isa, K.A. Razak, M. Jaafar and Z. Lockman	67
The Effect of Sonication Time on Thermal Conductivity and Stability of Graphene (Gr) and Aluminium Nitride (AlN) Y. Wadzer, H. Mamat and E. Abu Bakar	75
Bio-Organic Based Resistive Switching Random-Access Memory M. Awais, F. Zhao and K.Y. Cheong	85

Chapter 4: Building Materials

Cohesive Zone Modelling and the Fracture Process of Cement-Based Composites V. Kozák and J. Vala	97
The Effect of Different Grinding Technologies on the Mechanical Properties of Portland Cement Depends on the Type of Intensifier S. Ravaszova and K. Dvořák	103
Lightweight Refractory Materials in Al-Si Binary System Produced by Sol-Gel Method D. Zemánek and L. Nevřivová	109
Using of Limestone Cement in Fibre-Cement Corrugated Sheets Production M. Hoško and L. Bodnárová	115
The Effect of the Origin and Inner Structure of Limestones on the Burning Process and the Formation of Lime D. Sklenářová and K. Dvořák	121