

Table of Contents

Preface

Chapter 1: Biomaterials

Hybrid Gelatin/Carboxymethyl Cellulose Hydrogel Loaded Copper (II) Ion for Medical Applications	
N. Kreua-Ongarjnukool, S.T. Niyomthai, K. Sarodom, T. Lothong and N. Soomherun	3
The Effect of Herbal Infusion on Fasting Blood Glucose (FBS) and Malondyaldehyde (MDA) Levels in Diabetic Rats	
A.I. Fauziah, L.D. Saraswati, A. Udiyono and B. Safitri	9
Strategies and Advances in Tumor Immunotherapy	
J. Luo	15

Chapter 2: Polymers and Composites

Monitoring of the High-Technology Nailing of CFRTP Material under Ultrasonic Vibration by Acoustic Emission Method	
Y. Akematsu, H. Gotho, T. Tani, H. Murayama, T. Matsuo and K. Kageyama	25
Investigation on Thermal Stability of Geopolymer Based Zeolite in Fire Case Study	
K. Kanyalert, P. Chindaprasirt and D. Tanangteerapong	31
Features of Molding and Structure of Composite Materials Based on TiB/Ti, Obtained by Free SHS Compression Method	
A. Chizhikov, A. Konstantinov, P. Bazhin and A. Stolin	37
Improvement of Poly(Lactic Acid) Properties by Ethylene-Octene Copolymer and Organoclay	
S. Wacharawichanant, P. Hanjai, S. Khongaio and M. Phankokkruad	43
Effects of Glycine, L-Arginine and their Complexation with Polyvinylpyrrolidone on Tetrahydrofuran Hydrate Formation	
K.S. Rong, X.M. Shi, J.Q. Gong, Q.B. Wang, K.C. Liu, Y.Z. Qu and X.Y. Yao	49
Preparation and Application of a Carboxymethylcellulose-Based Citric Acid-Crosslinked Coated Fertilizer System	
V.S. Mesias, A.B. Agu, P.J. Benablo and D. Penaloza Jr.	54

Chapter 3: Nanomaterials

Graphene Hypersurface for Manipulation of THz Waves	
S. Dash, C. Liaskos, I.F. Akyildiz and A. Pitsillides	63
The Influence of the Synthesis Method on the Formation of Phase Composition and Catalytic Centers $Gd_2Zr_2O_7$	
E.B. Markova, A.G. Cherednichenko, V.V. Kurilkin and J.M. Serov	69
Impact of Graphene Thickness on EM Modelling of Antenna	
S. Dash, C. Liaskos, I.F. Akyildiz and A. Pitsillides	75

Chapter 4: Computational Materials Science

Hydrogen Adsorption Phenomena Simulation of ZSM-5 Zeolite Using Molecular Dynamics Method	
J.F. Fatriansyah and M.I. Widyantoro	83
Numerical Investigation on Key Process Parameters Affecting Blanking of Steel Sheet by Using Finite Element Method	
M. Sahli, X. Roizard, G. Colas, M. Assoul and P.H. Cornuault	89

Study on Microstructure Transformation of High Strength Hot Rolled Steel by Using Finite Element Simulation	
S. Thongnak, T. Yingnakorn, L. Sriklang and S. Khumkoa	95
Vibration and Wave Propagation Characteristic Analysis of Periodic Auxetic Star-Shaped Structure System	
J.Y. Yeh	101
A Feasibility Study on Metallurgical Slag Classification by Microstructure Recognition	
J. Thampiriyanon, K. Laungsakulthai, P. Laokhen, S. Thongnak and S. Khumkoa	107

Chapter 5: Materials Processing Technologies

Machining and Characterization of Double-Helical Grooves on Cylindrical Copper Parts by Wire Electric Discharge Turning	
J.S. Krupa and G.L. Samuel	117
On Material Removal Mechanism in High Speed Single Grit Scratch-Grinding of Cryo-Treated Al2024-T351 Aluminium Alloy	
S. Satpathy and A. Ghosh	123
Experimental and Numerical Investigation of Cutting Characteristics of PA6/PE Nylon Film Subjected to Wedge Indentation Process	
H.C. Nguyen and S. Nagasawa	129

Chapter 6: Metallurgical Technologies

Recovery of Silver from Solar Panel Waste: An Experimental Study	
N. Wongnaree, W. Kritsarikun, N. Ma-ud, C. Kansomket, T. Udomphol and S. Khumkoa	137
Study on Leaching of Molybdenum from a Spent HDS Catalyst	
C. Kansomket, T. Chandakhiaw, N. Ma-ud, T. Yingnakorn, T. Patcharawit and S. Khumkoa	143
Study on Recovery of Rare Earth Elements from NdFeB Magnet Scrap by Using Selective Leaching	
T. Yingnakorn, P. Laokhen, L. Sriklang, T. Patcharawit and S. Khumkoa	149
Effect of Temperature in Carbothermic Reduction of Indonesian Limonite Ore Using Printed Circuit Boards as Reducing Agent	
R.M. Ulum, A.K. Wicaksana and F. Abidin	155
Smelting Reduction of Spent Catalyst Containing Nickel: A Preliminary Study	
K. Laungsakulthai, T. Chandakhiaw, N. Wongnaree, J. Thampiriyanon, W. Kritsarikun and S. Khumkoa	162