

Table of Contents

Preface

Chapter 1: Functional Materials and Materials for Specific Applications

First-Principles Investigations of Mechanical, Electronic and Optical Properties of Heavy Thallium Perovskites TlSnX_3 (X = F, Cl, Br and I)	
A. Marjaoui, M.A. Tamerd, H. Rghioui, M. Diani and M. Zanouni	3
Thermoelectric Properties of Antiperovskite X_3SiO (X = Sr and Ba)	
M.S.A. Rahim, A. Chik and Y.C. Keat	15
Structural and Optical Properties of CdZnS/PVP and $\text{Cr}_x\text{: Cd}_{0.5-x}\text{Zn}_{0.5}\text{S/PVP}$ Nanoparticles	
S. Munga, G.S. Harish, C. Salma, M. Ankinapalli and P. Sreedhara Reddy	25
Development, Purification and Structural Evaluation of β-CDs from Cassava Waste Using <i>CGTase</i> and Nanostructured Encapsulated Plant Mediated AuNPs via Sustainable and Environmentally Friendly Techniques	
O.J. Olaniyan, E.O. Dare, A.K. Akinlabi, D.D. Diaz, F.O. Oladoyinbo, G.A. Adebayo, T.O. Alonge, O.O. Emmanuel and A.M. Mosaku	35
Assessments on the Antibacterial Activity of DL-Valinium Maleate Compound and Z-Scan Analysis	
S. Azhagiri, P. Vasudevan, D. Jayaraman and A. Vichithra	47
Si/C Graphite Anode Materials for Lithium-Ion Batteries with Stabilized Capacity and High-Compacted Density Prepared by Liquid-Phase Method	
T. Ma, W.B. Zhang, Y.B. Xiao, H.X. Yue, J. Liu and D. Nan	59
Microstructural Analysis of Biodegradable Magnesium Alloy WE43 after Laser Surface Melting	
C.Y. Tan, C. Wen, K. Munir, D. Zhang and H.Q. Ang	67
A Comprehensive Investigation into the Influence of Prolonged Mixing on the Properties of Concrete Incorporating Different Types of Portland Cement	
D.A. Singaravel, N. Boopathi, S. Rajendran and R. Dhairiyasamy	73

Chapter 2: Water Treatment

Assessing the Removal Efficiency of Microplastics from Water Using Electrocoagulation	
H. Amjad, N. Maqbool, S. Sarwar, A. Sohail and M. Noor	87

Chapter 3: Materials and Technologies in Mechatronics

Recording Performance of Bit Patterned Media in Account of Magneto-Interaction Field and Bit Error Rate	
C.M. Cheong, H.W. Su, T.F. Lai, M.H. Abdul Halim and M.L.P. Tan	97
Integrated Weighing System Using Load Cell and Ultrasonic Sensor: A Case Study at Negeri Roadstone Malaysia Quarry	
N.A.B. Nik Rusli and A.B. Alias	103