

Table of Contents

Preface

Chapter 1: Metallurgy and Raw Materials Processing

Effect of Wood Sawdust Addition on the Morphology, Mechanical Properties, and Thermal Properties of Mullite-Based Porous Ceramic Filter Candidates for Aluminum Casting Process

D. Dhaneswara, K. Wahyudi, M. Anis, J. Aditomo and J.F. Fatriansyah 3

Effect of Starch Content on Morphology, Mechanical Properties, and Thermal Properties of Mullite-Based Porous Ceramic as a Candidate Filter in Aluminum Casting

M. Anis, K. Wahyudi, F.F. Jaka, N.M.A. Athallah, B. Suharno, A. Azhari and D. Dhaneswara 11

Thermal Decomposition Analysis of Indonesian Natural Dolomite in Air

F. Munawaroh, M.A. Baqiya, Z. Arifin and T. Triwikantoro 19

Chapter 2: Composites

Investigation on Mechanical Properties of Hybrid Natural Fiber Reinforced Polymer Composite

S.S. Yadav, P.K. Gupta and B.L. Gupta 27

Fabrication of Sand and Waste Plastic Composite Based Tile

Y.R. Reddy and K. Usman 35

Mechanical Property Evaluation of (Jute Fibre, Banana Fibre and Groundnut Husk Powder) Reinforced Composite Material

M.S. Sai, S.P. Kumar and M. Rajesh 43

Chapter 3: Materials and Technologies for Environmental Protection

A Coin-Shaped Polypropylene Bio-Carrier Fabricated Using a Filament-Based 3D Printer for Wastewater Treatment

R. Widjaya, F. Faizal, U. Subhan, S. Hidayat, W. Hermawan, I.M. Joni and C. Panatarani 55

The Effect of Fermentation on Increasing the Physico-Chemical Quality of Fish Feed Based on Food Waste

M.D. Cahya, Y. Andriani, R. Risdiana, N. Rossiana and M.F. Wiyatna 63

Synthesis of ZnO-Al:TiO₂ Materials and their Characterization as Photocatalyst Compounds

I. Islami, L.N. Ramadhika and A. Aprilia 71