

# Table of Contents

## Preface

## Chapter 1: Chemical Engineering

<b>Textile Wastewater Treatment Using Activated Graphene-Like Biochar Derived from Onion Peel Biomass</b> F.A. Kwarteng, M.A. Hassan, H. Ohashi and A.S.G. Khalil	3
<b>Modification of the Chitosan Spray Coating on Pineapple Pulp as Adsorbent for Copper Ion Adsorption from Aqueous Solution</b> P. Charnkeitkong, W. Jonglertjunya and X.S. Feng	13
<b>Study of Phase Composition and Microstructure of Porous Alumina Ceramics Derived from Hydrothermal Powders</b> R.I. Shakirzyanov, Y.A. Garanin, A.L. Kozlovskiy, D.I. Shlimas, M.V. Zdorovets and D.K. Zhamikhanova	19
<b>Chemical Constituents of Black Galingale Rhizome from Hexane Crude Extract and its Nanoemulsion Preparation</b> A. Wongcharu, C. Sonklin, C. Laongtiparos, S. Pranee, S. Seeyangnok and N. Trongsirawat	25
<b>Effect of <math>\text{Bi}_2\text{O}_3</math>, <math>\text{B}_2\text{O}_3</math> and <math>\text{V}_2\text{O}_5</math> Sintering Additives on Phase Composition, Microstructure and Electrical Resistivity of <math>\text{SrAlFe}_{11}\text{O}_{19}</math> Ceramics</b> N. Volodina, S. Maznykh, D. Vinnik, A.V. Trukhanov and A.L. Kozlovskiy	31
<b>Particle Characteristics of Diatomite Activated by Alkaline Solution</b> T. Yann, C. Winotapun, P. Yos, L.H. Voon and O. Boondamnoen	37
<b>Experimental Evaluation of Rheological Properties of Water-Based Drilling Fluid with Fly Ash Additive</b> S.K. Dewangan, N. Nathwani and A. Kawade	45

## Chapter 2: Additive Manufacturing

<b>Polyhydroxybutyrate/Poly(lactic Acid)/Polybutylene Succinate Blend Filaments for 3D Printing Applications</b> K. Passarapark, C. Aumnate, O. Boondamnoen and P. Potiyaraj	53
<b>3D Printing of Urethane Dimethacrylate with Nanoclay for Enhanced Curing Properties via Stereolithography</b> B.A. Basilia, A.J.C. Boniel, G.S.B. Borilla III and P.A.N. de Yro	59
<b>Optimization of Multi-Objective Response of FDM Fabricated PLA Parts with Morphological Investigation on the Effects of 3D Printing Parameters</b> C.E.L. Alviar and B.A. Basilia	65
<b>Comparison of the Mechanical, Thermal and Structural Properties of Gamma-Irradiated and Conventional SLA 3D Printed Methacrylate-Based Photo-Curable Resin for Biomedical Application</b> J.A.C. Sy, B.A. Basilia, C.T. Aranilla, C.S. Emolaga, V.U. Lagura and M.T. Margarito	71

## Chapter 3: Modeling in Mechanical Engineering

<b>Analysis of Vibration Model to Study the Effect of Defect Sizes and Load on Stiffness, Contact Deformation, and Contact Force Variation in Deep Groove Ball Bearing</b> A.K. Verma and P.K. Saini	79
<b>CFD Simulation of a Circulating Fluidized Bed Boiler to Improve Air Distribution for Satisfactory Fluidization</b> B. Gonzales, R.G. Tayactac, R. Umali, J. Honra and A. Calderon	87
<b>Extended Finite Element Simulation of Axial Semi Elliptical Surface Crack in Bi-Material Pipe</b> S. Bhattacharya and V. Sonkar	93

<b>Optimization of Helical Gear Plunge Shaving Cutting Parameters for Cutter Life Using Taguchi Method</b>	
A.A. Tolentino, M.C.E. Manuel and R.G. Tayactac	99
<b>Combined Influence of a Liner Deformation and Couple Stresses on the Partial Bearing Aspect Ratios</b>	
V. Kumar, S.K. Lambha and R. Verma	105