

Table of Contents

Preface

Chapter 1: Advanced Materials and Technologies for Pollutant Removal

Hydrogel for Aqueous Methylene Blue Removal: Natural Rubber/ Poly(ethylene Glycol) Methyl Ether Methacrylate Semi-IPN P. Thusanaphoom, T. Yingshataporn-A-Nan, L. Sunthornwaree, P. Laohasathit, E. Martwong, J. Jitcharoen and N. Sukhawipat	3
Innovative Lead Removal: Natural Rubber Latex Foam/Coconut Shell-Based Activated Carbon Composite on Flexible Substrates N. Sukhawipat, A. Limrueangamphon, C. Intachai, K. Aopoom, T. Navanuch, J. Upan, B. Sukkaneewat, Y. Wongnongwa and N. Sosa	11
Enhancing Wastewater Treatment Efficiency through Photosynthetic Bacteria Activation T. Chotchuangchutchaval, T. Inthakesorn, A. Ruemchatskul and S. Limrungruengrat	19
An Experimental Investigation on Enhancing Nitrogen Oxides Reduction of Non-Thermal Plasma (NTP) Aftertreatment System with Silver-Base Catalyst with NTP Downstream SCR Catalyst Configuration W. Temwutthikun, P. Promhuad, T. Iamcheerangkoon, B. Sawatmongkon, K. Theinnoi and S. Sittichompoo	27

Chapter 2: Functional Materials

Effect of h-NS Content on the Viscosity, Morphology, Gelation, and Mechanical Properties of the Modified-rPET from Bottle Waste B. Roonthong, S. Damdenngam, N. Intarasuwan, N. Parneam, P. Suwankan and S.I.N. Ayutthaya	39
A Novel Elastomeric Dielectric Materials: Natural Rubber/Copper-Modified Activated Carbon T. Yingshataporn-A-Nan, P. Thusanaphoom, T. Lardsaluk, N. Moolchai, N. Sosa, W. Jeunthanasirigool and N. Sukhawipat	47
Effects of the Solid Concentration of Ceria Slurry on the Removal Rate and Selectivity of Si Wafer during Chemical Mechanical Polishing A. Chafidz, K.K. Gupta, C.W. Yu and C.H. Lu	55
Design Optimal Riser Size for Reducing Shrinkage Defect in 1100 Aluminum Alloy Sand Casting Process S. Hoochaiyaphum, P. Jantasorn and P. Suwankan	61
Design a Gating System for an Aluminum Cast Three-Way Pipe in Sand Casting P. Kwanthong, P. Jantasorn, P. Saisirirat and P. Suwankan	69

Chapter 3: Additive Manufacturing

Optimization of FDM 3D Printer Process Parameters to Minimize Dimensional Errors with PLA Material Using Response Surface Methodology A. Maneengam, T. Limlay, T. Kongsin, T. Assawarungsri, W. Laotaweesub, P. Suwankan and K. Ubontip	79
Stabilizer Effects on the Gelation of Modified Recycled PET for 3D Printing Filament Application N. Parneam, S.I.N. Ayutthaya, N. Sukhawipat and S. Komonhirun	85
Examination of Microstructure, Mechanical Properties, and Fatigue Strength in a Wire Arc Additively Manufactured Material Comprising Dissimilar Materials: AISI 316L Stainless Steel and Carbon Steel M. Hietala, M. Keskitalo, M. Jaskari, J. Arvola and A. Järvenpää	93

Chapter 4: Modeling in Mechanical Engineering

Numerical Investigation of Thermal Cooling Performance of Prismatic Lithium-Ion Battery Pack for Electric Vehicle S. Srithai, S.S.H. Pisitsungkakarn, W. Sriariyakul, T. Prusomboon, P. Ditdanai and A. Sikhant	103
Design and Development of Multirotor Mounted with 3D Ultrasonic Anemometer for Wind Assessment K. Sriyasawin, C. Sumpavakup and W. Sridech	111
Profile Specification in the Assembly of Machine Designing Based on Geometric Dimensioning and Tolerancing (GD&T) by FEA Method N. Phetrak, T. Kongsin, A. Maneengam and N. Siriwan	119
Perpendicularity Specification in Assembly for Function Designing a Machine Based on Geometric Dimensioning and Tolerancing (GD&T) by FEA Method T. Pookpanchan, T. Kongsin, T. Assawarungsri and N. Siriwan	127
Numerical Simulation of Internal Sprays in a Constant Chamber Using Large Eddy Simulation Techniques M. Kaewbumrung and C. Plengsa-Ard	133
Design of an Automatic Transmitter Coil Positioning Adjustment System for Wireless Charging N. Kasemsinthu, P. Jeebkhum, C. Panya-Isara and C. Sumpavakup	149