

Table of Contents

Preface

Chapter 1: Materials Engineering

Electrochemical Self-Assembly of ZnO Nanosheetlike Structures L.S. Chuah, S.Y. Chin, S.S. Tneh, M.A. Ahmad, S.K. Mohd Bakhori, Y. Yusuf and Z. Hassan	3
Lubricity of Palm Fatty Acid Distillates at Various Rotational Speeds I. Golshokouh, F.N. Ani and S. Syahrullail	9
InSe Nanothin Film with Ar-Gas Low Vacuum Pressure F.M. Al-Attar and M. Ali	15
Thermoluminescence Properties of Optical Fibers Doped with RE⁺³ (RE=Sm, Nd) Ions Subjected to X-Ray Irradiation A. Refaei, H. Wagiran and M.A. Saeed	19
Effect of Fiber Loading on Tensile Properties of Cocoa Pod Husk Fibers Reinforced Thermoplastic Polyurethane Composites Y.A. El-Shekeil, S.M. Sapuan and M. Haron	25
Natural Clinoptilolite and Chabazite as Carrier for Antibacterial Agents of Cetylpyridinium Chloride (CPC) and Silver N.A.N. Nik Malek, C.D. Williams, S. Dhanabal, H.S. Bhall and N. Ibrahim	29
Effect of Melt Temperature on the Interfacial Thermal Resistance and Solidification Behaviour of Al/SiC_p Composites P. Gurusamy, S. Balasivanandha Prabu and R. Paskaramoorthy	35
Preparation and Tribological Performance of Silica/Ethylene-Octene Copolymer Nanocomposites K.S. Cao, S.T. Li, Y.H. Cheng and X.L. Guo	41
Antibacterial Properties of Guided Bone Regeneration Membrane for Periodontal Applications N.N. Saarani, K. Jamuna-Thevi, I.I. Muhammad and H. Hermawan	47
Selective ZnO Nanorods Hydrothermal Growth through Resist Patterning Method A.A. Rashid, N.H. Saad, D.B.C. Sheng, W.Y. Lee and R.W. Freddawati	51
Effect of Heat Treatment on Tensile Strength and Microstructure of AZ61A Magnesium Alloy R. Senthil and A. Gnanavelbabu	55
A Simple and Cost-Effective Method for Fabricating Chitosan-Filled Filter Media from Lignocellulosic Biomass A.N. Sadikin, R.R. Ali, N. Othman and M.G.M. Nawawi	61
Biofilm Green Packaging: Characterization and Biodegradation Studies R.R. Ali, W.A. Wan Abdul Rahman, R.M. Kasmani, I. Norazana, H. Hasbullah and A.N. Sadikin	67
Pyrolysis of Solid Palm Waste Biomass with Microwave Absorber under Microwave Irradiation F. Mushtaq, R. Mat and F.N. Ani	73
Preferred Growth Orientation of Cementite Carbide by Phase-Field Simulation R.D. Ramdan and R. Suratman	79
A Review of the Low-Temperature Degradation of Dental Zirconia M.M. Aboras, K.Y. Theng, A. Muchtar, C.H. Azhari and N. Yahaya	85
Mechanical Properties of Polylactic Acid/Treated Fermented Chitin Nanowhiskers Biocomposites S.E.A. Mohd Asri, Z. Zakaria, A. Hassan and M.K. Mohamad Haafiz	89
Phase Evaluation of Pure Mg, Mg-1Ca and Mg-1Ca-3Zn Alloys by Thermal Analysis Used in Medical Applications H.R. Bakhsheshi-Rad, E. Hamzah, M.H. Idris, S. Farahany and A. Fereidouni	93
Photo Catalytic Reduction of Pb(II) Using Titanium Oxide PVA-Alginate Beads under Sunlight A. Idris and Z. Majidnia	99

Aluminum-Copper Bilayers Thin Films Deposited at Room Temperature by RF Magnetron Sputtering	
Z.A. Abdul Halim, M.A. Mat Yajid, Z.M. Rosli and R.A. M. Ali	105

Chapter 2: Manufacturing Engineering

Parameter Study of Tool-Laminate Interface through Simulation for Composite Manufacturing Using Autoclave Process	
L. Mezeix, M.N.M. Nasir, Y. Aminanda, A. Rivai and K.M. Ali	113
Design and Verification of the Parameters of Hot Forging of Ti10V2Fe3Al Alloy Compacts	
M. Wojtaszek, T. Śleboda, M. Rumiński and J. Łuksza	119
Simulation of Automotive Galvanized Steel Stamped Parts: Experimental and Numerical Approach	
A. Senin, Z. Mohd Nopiah, M.J. Jamaludin, M.A. Abidin, M.A. Zaudin, M.A. Ahmad and A. Zakaria	125
Response Prediction of Static Modal Testing on Milling Machine Tool	
N. Jamil, A.R. Yusoff and M.H. Mansor	131
Top Spray Fluidized Bed Granulated Paddy Urea Fertilizer	
S. Sivarao, M.R. bin Said, O. Rostam, M.Z. Hafiz, L.H. Hassan, A. Shaaban and M.F. Dimin	137
Reduction of Rejection Rate for High Gloss Plastics Product Using Six Sigma Method	
C.K.A.C.K. Kairulazam, M.I. Hussain, Z. Mohd Zain and N.A. Lutpi	141
Experimental Investigation on the Use of Bispectral Analysis in Detecting Nonlinear Faults in Hydraulic Machines	
M.S. Somia Alfatih, M. Salman Leong and L.M. Hee	147
Experimental Investigation on Dynamic Characteristics of Polypropylene Honeycomb Sandwich Structures under the Influences of Different Temperatures	
P. Nagasankar, S. Balasivanandha Prabu, V. Ramachandran and R. Paskaramoorthy	153
R-Curve Modelling of Mode I Delamination in Multidirectional Carbon/Epoxy Composite Laminates	
K.J. Wong, X.J. Gong, S. Aivazzadeh and M.N. Tamin	159
Fracture Characteristics of Shear Adhesive Dissimilar Joint	
M. Afendi, K. Hafizan, M.S.A. Majid, R. Daud, N.A.M. Amin, C.E. Meng and T. Teramoto	165
Springback-Free Sheet Metal Structural Part Design by Topography Optimization	
M.S. Adzman and A. Zakaria	171
Optimization of Spot-Welds on Patchwork Blank for Hot Forming Process	
M.A. Ahmad and A. Zakaria	177
Crush Characteristics and Energy Absorption of Thin-Walled Tubes with Through-Hole Crush Initiators	
S.K. Subramaniam, A.K. Kananasan, M.R.M. Yunus, S. Mahzan and M.I. Ghazali	181
Investigation of Annular Gap Size for Optimizing the Dynamic Range of MR Damper Using Comsol Multiphysics Software	
S. Fathima, A.G.A. Muthalif and M. Raisuddin Khan	187
Optimization of Surface Roughness in Electro Chemical Machining	
M. Sankar, A. Gnanavelbabu and R. Baskaran	193
Evaluating the Effect of Main Factors in Manufacturing Production Line Based on Simulation Experiment	
M. Hatami, S.M. Zahraee, A. Khademi, A. Shahpanah and J.M. Rohani	199
Morphological Investigation of Alumina Asymmetric Membrane by Manipulating the Sintering Temperature Profile	
H. Hasbullah, F. Mohamed, R.R. Ali, N. Ibrahim, M.K.A. Hamid, W.N.W. Salleh and N. Yusof	205
Hydraulic Stability of Interlocking Concrete Unit-V (ICU-V)	
N.D.M. Noor and A.M. Hashim	211
Cyclic Cohesive Zone Model for Simulation of Fatigue Failure Process in Adhesive Joints	
M. Johar, M.S.E. Kosnan and M.N. Tamin	217
Microwave Thermal Conversion of Oil Palm and Related Biomass for Biofuels and Biochars	
F.N. Ani	223
Effect of Pitting Corrosion on Strength of AISI 410 Stainless Steel Compressor Blades	
M. Mat Noh, F. Mozafari, M.A. Khattak and M.N. Tamin	227

Chapter 3: Industrial Engineering

Development of Road Safety Sustainability Model for Malaysian Road M.O. Arowolo, J.M. Rohani and M.R. Abdul Rani	235
Design of Supplier Selection Procedure in Garment Company R. Amaranti, A.N. Supena and A.S. Ramadhani	241
Improvement of Work System with Ergonomic Approach of Domestic Shoe Industry in Cibaduyut Bandung Y. Sri Rejeki, N. Rahman As'ad and E. Achiraeniwati	247
An Analysis of Key Factors for Quality Practices in the UAE's Industry M. Doulatatabadi, Z. Khalifah and S.M. Yusof	253
Improving Productivity in a Bank System by Using Computer Simulation M. Hatami, S.M. Zahraee, M. Ahmadi, S.R. Golroudbary and J.M. Rohani	259
Application of Statistical Taguchi Method to Optimize Main Elements in the Residential Buildings in Malaysia Based Energy Consumption S.M. Zahraee, M. Hatami, A.A. Bavafa, K. Ghafourian and J.M. Rohani	265
Supplier Selection Problem: A Multi-Objective Model Considering both All-Unit and Incremental Discounts with Multiple-Item I. Iskandar, S.A. Darestani, S. Ghavami and A. Azizi	271
Knowledge-Based Genetic Algorithm for Multidimensional Data Clustering M.R.A. Purnomo, C. Saleh, R.L. Lagaida and A. Hassan	277
Interdependency of Cleaner Production and Cleaner Application: Towards an Integrated Assessment on Appropriate Technology C.P.M. Sianipar, K. Dowaki and G. Yudoko	281
Development of Supply Chain Management Practices and Competitive Advantages in Manufacturing Industries: A Review C.H. Ping, N. Zakuan, S.Z. Omain, Z. Sulaiman, M.Z.M. Saman and M.S.M. Ariff	287
Applications of Cubic Motion Curve M.F. Mat Ghani, N. Fouladinejad, J. Mohd Taib and A. Dzakaria	293