Table of Contents

Preface

Chapter 1: Composite Materials

The Effects of Alkalization on Mechanical and Physical Properties of Bamboo- Polypropylene Composite	
M.A. Jamaludin, S.A. Bahari, M.N. Zakaria and N.A.S. Karim	3
Enhancing Mechanical Performance of Bagasse Fiber-Epoxy Composite by Surface Treatment	
F.W.W. Zie, S. Debnath, M. Anwar and A. Hamid	8
The Effect of Aging on the Decrease in Tensile Strength of Composites with Palm Oil Kernel Shell Powder	10
K. Habrová, P. Valášek and M. Müller Improvement of Binderless Banana Pseudo-Stem Particleboard Properties via Natural	18
Laminating Materials	
M.A. Jamaludin, S.A. Bahari, M.N. Zakaria and U.A. Azizan	23
Degradation Behaviour of Nanosilica Enhanced Oil Palm Empty Fruit Bunch Fiber Epoxy Composites	
A.W.T. An, S. Debnath, V.L.C. Chen, M.M. Reddy and A. Pramanik	28
Ceramic Membrane Production from the Mixture Composition of Clay, Zeolite, Activated Carbon with Micro Particle Size	
S. Saifuddin, F. Faridah, E. Elwina and I.A. Zaz	36
The Process Development for Sound Absorption Design of Non-Woven Car Mat U.H. Park, J.H. Heo, I.S. Lee and D.K. Park	43
An Experimentally and Numerically Comparison between E-Glass/Epoxy and Basalt/Epoxy	
Pipes Pressurized Internally T.A.D.M.S. Almula, I.H. Amori, M.Y. Yahya and A. Ayob	49
Chapter 2: Materials and Technologies for Microelectronics	
Contactless Chip Module Defect Reduction T. Sawatsuphaphon and P. Chutima	59
Preparation of Rutile TiO₂ Film by Low Temperature Hydrothermal M.Q. Wei, L.C. Jin and D. Zhang	65
Corrosion of the Materials in the Electrical Connectors L.Y. Zhao and Z.B. Kong	70
Double Perovskite Bi ₂ FeCrO ₆ Thin Films for Photovoltaics D.H. Meng and F.M. Bai	77
Chapter 3: Building Materials and Structures	
A Comparison on Column Reinforcement with Conventional Concrete and Carbon Fiber / Epoxy Exposed to Compression Loading F. Elaldi, B. Ciloglu and Y. Yanikkaya	85
Characterization of Geopolymer Binder Using Sidoarjo Mud R. Syahyadi, A. Fauzi, H. Mahyar, Syukri and Mulizar	91
Eco-Friendly Thermal Insulation Structures Based on Natural and Biodegradable Materials for Environmentally Durable Development A.G. Ene and C. Mihai	97
Comparison and Transmission Studies of Commercial Glass and Laminated Glass with PDLC Film for Heat Resistant and Other Building Structure Applications P. Mangthong, P. Leowkijsiri, N. Srisittipokakun and J. Kaewkhao	103

Chapter 4: Materials Processing Technologies

Effect of Ultrasonic Surface Rolling Process Parameters on Surface Properties of S30408 Austenitic Stainless Steel	
R.J. Sui, Z.H. Qin, L.Y. Sun, C.B. Fang and X.M. Chen	111
Effect of Coolant Type on Surface Roughness and RSM Modelling in Single-Point Diamond Turning of RSA443 Optical Aluminum Z. Hweju and K. Abou-El-Hossein	117
Machinability and Delamination Studies on Glass Fiber Reinforced Polymer Matrix	11,
Composite Cut by Abrasive Water Jet Machine H.V. Prajwal, W.M. Wani, M. Murthy and S. Srinivas	122
Effects of Helium Addition to Ar-Based Shielding Gas on the Lap-Joint Performance of 5052 Aluminum Alloy to Galvanized Steel Sheet during the MIG Weld-Brazing Process H.L. Lin, H.Y. Chen and Y.J. Wang	129
Chapter 5: Choosing and Optimization of Technological Process Parameters in Materials Processing	
Implementation of Neural Network in Classifying the Product Quality for the ABS Metallization Y.W. Chen, S.C. Wang, P.C. Yao, W.T. Lin, A. Larasati and V.E. Budi Darmawan	139
Defect Reduction in Forming Process of Fired Clay Floor Tiles by Six Sigma Approach W. Sirimongkol, P. Chutima and S. Nilpairach	147
Chipping Size Reduction on Ultra-Thin Wafers and Narrow Saw-Streets for Wafer Sawing Process W. Sanamthong and P. Chutima	154
Energy Consumption Prediction Model of SiCp/Al Composite in Grinding Based on PSO-BP Neural Network	
P. Gu, C.M. Zhu, Y.Y. Wu and A. Mura	163
Application of Neural Network in Predicting Forging Hardness Y.P. Luh, C.H. Tu, H.L. Wang and C.J. Chiu	169
Simulation Based Mold Design Optimization of a Spring Flap Casting M.A.A. Khan	178
Comparative Study of Optical Silicon Nanomachining Experimental Results and MD Simulation Outputs	105
L.N. Abdulkadir, K. Abou-El-Hossein and M.M. Liman	185
Effect of Process Parameters on Surface Roughness in Surface Grinding of 90CrSi Tool Steel	
T.T. Hong, N.V. Cuong, L.H. Ky, L.A. Tung, T.T. Nguyen and V.N. Pi	191
Finite Element Stress Characterization of Stacked Die Package for Reliability Improvement	
and Architecture Optimization Y.P. Luh. J.F. Jhang, H.L. Wang, F.H. Yu and C.H. Tu	198
1.1. Dun. 3.1. Junie. 11.D. Waie. 1.11. Tu ana O.11. Tu	170