Table of Contents

Preface

Chapter 1: Mechanical Properties and Wear Resistance of Structural Materials

Investigation of the Mechanical Properties and Microstructure of Graphene-Aluminium Alloy Composite Fabricated by Stir Casting Process	
A.M. Ali, M.Z. Omar, M.S. Salleh, I.F. Mohamed and N.F.B.W. Anuar	3
Wear Behaviour of Additive Manufactured Aluminium Alloy ER 5356 M.F.A.M. Azlin, A.B. Abdullah, R.M. Nasir, R. Rajendran, S.Y.M. Yusuf and Z. Hussain	9
Simulation of Thermal Analysis of Aluminium Composite Panel's Core Material Using Fire	
Dynamic Simulator (FDS) M.Z.M. Zaimi, W.N.W. Jusoh, A.F. Tharima, A.R. Asbar, Z.A. Aldahar and S.A.S. Abdullah	17
The Role of Thin Plies in Traditional Composite Structures Under Different Loading Conditions	1,
T.A. Sebaey	23
Effect of Graphene Nanoplatelets on Flexural Behavior of Glass Fiber Reinforced Polymer Composites Subjected to Different Temperatures S. Tudu and R. Velmurugan	29
Effect of Number of Cycles on Surface Roughness of PPS Thrust Bearings Under Rolling Contact Fatigue in Water	_,
S. Kajiwara, T. Matsueda, K. Mizobe and K. Kida	35
Wear Failure of PEEK-Alumina Ball Bearings in Dry Rolling Contact at 600 rpm - Part 1: Effect of Failure due to Wear Damage on Friction Torque S. Matsubayashi, Y. Watanabe and K. Kida	41
Wear Failure of PEEK-Alumina Ball Bearings in Dry Rolling Contact at 600 rpm - Part 2:	
Observation of Wear on Retainer S. Matsubayashi, Y. Watanabe and K. Kida	47
Controlling the Fracture Location of Capsules Using the Bonding Surface Characteristics of Photocurable Resin	5.5
J. Hu, T. Lim, H. Cheng, S.Y. Kim, Y.J. Lee and W.S. Jung	55
Chapter 2: Corrosion and Oxidation Behaviour of Structural Metals	
Tensile Effect on Sensitization and Corrosion Resistance of Stainless Steels S. Ieamsupapong, P. Taksina and T. Phakdeemee	63
Oxidation and Chromium Volatilisation of AISI 430 Stainless Steel in O ₂ -H ₂ O and Ar-CO ₂ -	
H ₂ O at 800°C P. Srihathai, S. Chaicharoen, N. Yamdee, T. Keawchusaeng, P. Wiman, W. Tengprasert and T. Thublaor	71
Study on the Effect of Hydrogen in Argon-Nitrogen Shielding Gas on Pitting Corrosion for Austenitic Stainless Steel by GTA Welding Process	
T. Thublaor, S. Chueaprakha, T. Nilsonthi and T. Siripongsakul	79
Chapter 3: Welding	
Residual Stresses of the Laser Welded Abrasion Resistant Steel Butt Joints M. Hietala, M. Keskitalo and A. Järvenpää	89
The Influence of Pipe Thickness on the Quality of Welded Joints P.S. Minh, M. Le and H.N. Son	95

Chapter 4: Green Building Materials

Utilization of Steel Slag Waste as Construction Materials of Rigid Pavements	
R.T. Bethary, D.E. Intari, A. Maddepungeng and A.D. Pratama	103
Utilization of Waste Steel Slag, Fly Ash, Glass Bottle Powder for Swamp Soil Stabilization R.I. Kusuma, E. Mina, W. Fathonah and M.H.A. Fatwari	109
Utilization of Steel Slag Waste as a Substitute for Coarse Aggregate in Concrete Mixture Z. Darwis, W. Fathonah and L. Hakim	115
Effect of Composite Portland Cement for Subgrade Stabilization and the Effect on	
Unsoaked CBR Value W. Fathonah, R.I. Kusuma, E. Mina, R. Wigati and N.N. Shihab	125