

Table of Contents

Preface

Chapter 1: Machines and Equipment

Modelling the Stiffness Element in the Multi-Degree of Freedom Mass-Spring System A.R. Bahari, M.A. Yunus, M.N.A. Rani, W.I.I. Wan Iskandar Mirza and M.A.S.A. Shah	3
The Effect of Cooling Method in Parabolic Solar Dish Concentrator A.N.A. Nyandang, B. Singh, M.F. Remeli, R.A. Bakar and A. Oberoi	11
Effect of Dimensionless Numbers on Air Core Diameter of Pressure-Swirl Atomizer Z.A. Ghaffar, S. Kasolang, A.H.A. Hamid and M.S.F.M. Rashid	22

Chapter 2: Mechatronics and Robotics

Design and Development of Ladder Climbing Robot L.K. Moey, N.L.S. Teng, J.Y. Ng, M.I. Solihin and N.H. Badrulhisam	31
Aerodynamic Performance of a Flapping Wing Inspired by Bats S. Suhaimi, S. Shuib, H. Yusoff and A.H. Kadarman	42
Design and Development of Actuator System for Automated Polypropylene Bag Assembly Machine R.A. Jaafar, I.I. Ihsan, A.M. Samsuri, N.S.N. Mahadi and M.A. Ayub	50
Development of Examination Hall Assistive Robot (EHAR) M.A.H. Sham, N.A. Elias, N.A.N.M. Kamarolzaman, N. Aziz, N.S. Khusaini, S. Khusairi and Z. Mohamed	61

Chapter 3: Biomedical Engineering

The Mechanical Properties of Mimic Skin N.N. Mohd Nazali, N.A.A. Anirad and N.F.A. Manan	73
Influence of Dental Implant Design on Stress Distribution and Micromotion of Mandibular Bone N.F. Ismail, M.S. Islam, S. Shuib, R. Ahmad and M.A. Shahmin	81
Three-Dimensional Modeling and Finite Element Analysis of an Ankle External Fixator N.F. Ismail, M.A.F. Bin Adnan, S. Shuib and N.A.H. Nik Abd Rashid	94
Design and Development of Insole Monitoring System for Runner M.S. Mat Dris, M.H.M. Ramli, N.S. Khusaini, N. Aziz and Z. Mohamed	103

Chapter 4: Materials and Processing Technologies

Investigation on Parameter Contribution to the Property of Weld Joint AA5052-H112 Sheets in Friction Stir Spot Welding under Fatigue Load and Failure Mode Armansyah, J. Saedon, H.C. Ho and S. Adenan	117
Fatigue Life Behaviour of Transverse Fillet Weld and Transverse Fillet on Weld of the HSLA S460G2+M Followed by HFMI/PIT D. Andud, S. Saidin and Y.H.P. Manurung	126
Green Manufacturing - Textured Novel Cutting Tool for Sustainable Machining: A Review A. Farooqi and N. bin Yusoff	135
An Investigation on the Surface Integrity of Grade 5 Titanium Alloy Proceeding the Wire Electro-Discharge Machining (WEDM) Process N. Musa, J.B. Saedon and M.S. Adenan	144
Extraction of Silica from Rice Husk and Bamboo Leaves and its Effect on the Ceramic Body Glazing Process N.S.M. Zarib, S.A. Abdullah and N.N. Ishak	156

Dicing Characterization on Optical Silicon Wafer Waveguide J.B. Saedon, S.M.M. Ibrahim, A.R.A. Ghani and M.H.B.A. Razak	163
Effect of Process Parameter on Tensile Strength of Spot Welded S235 Sheet Using Simulation and Experimental M.N. Yusuf, W.E.W.A. Rahman and Y.H.P. Manurung	169
Product Performance Analysis of Fine Bone China Using Ceramic Slip Rotary Moulding Process N. Nasir, N.H. Saad, N.H.A. Wahab, B. Abdullah and A.R.M. Sahab	180
Resin Mould for Ceramic Slip Rotary Moulding (CSRM) System N.H.A. Wahab, N.H. Saad, N. Nasir and A.R.M. Sahab	187
Surface Structure of Epoxy Treated Semantan Bamboo (<i>Gigantochloa scortechinii</i>) N.F. Ismail, S. Shuib and A.Z. Romli	193

Chapter 5: Engineering Management, Ergonomics and Products Design

Reliability of Kinovea Software for Ergonomic Analysis Calibrated Using Cost-Effective Equipment N. bin Hidzir Pauzi, M.N.A. bin Ab Patar, N.A. binti Mohd Salleh and S.A. Abdullah	209
A Case Study: Framework of Gap Analysis on Integration of Audit System between IATF 16949 and Toyota Production System N.H. Saad, Q.M. Khalid, N.H.A. Halim and N.S. Khusaini	219
Ergonomics Intervention in Indoor Spectrum Measurement Activities E. Mohamad and N.H. Saad	230
Mid-Life Refurbishment Maintenance Strategy to Sustain Performance and Reliability of Train System M.F.M. Idris and N.H. Saad	238
A Critical Analysis on Organizational Diagnostic Models and New Diagnostic Model Proposition for Construction Companies I.S. Baharudin and B. Abdullah	253
Process Improvement at Automotive Assembly Line Using Line Balancing and Lean Manufacturing Approach M.H. bin Tajul Arifin and W.E.W.A. Rahman	268