

Table of Contents

Preface

I. Materials Engineering

Liquid Phase Epitaxy of Si-Doped AlN at 1300 °C in Ga-Al Melt A.R. Setiawan, M. Adachi and H. Fukuyama	3
Influence of Heat Treatment Cooling Mediums on the Degradation Property of Biodegradable Zn-3Mg Alloy M.S. Dambatta, S. Izman, H. Hermawan and D. Kurniawan	7
An Expert System for Life Prediction of Woven-Roving GFRE Closed End Thick Tube Subjected to Combined Bending Moments and Internal Hydrostatic Pressure Using Artificial Neural Network M.N. Abouelwafa, H.A. El-Gamal, Y.S. Mohamed and W.A. Al-Tabey	12
Mineral Matter Study in Adaro Coal-EFB Blends to Mitigate Ash Slagging Problem in the Gasification Process N.F. Othman and M.H. Boosroh	18
Evaluation of the Effect of Bismuth on Mg₂Si Particulate Reinforced in Al-20%Mg₂Si <i>In Situ</i> Composite N.A. Nordin, S. Farahany, A. Ourdjini, T. Abubakar and E. Hamzah	22
Effect of Rare Earth Addition on Microstructure and Mechanical Properties of Al-Si Alloys: An Overview S.L. Joy-Yii and D. Kurniawan	27
Simulation of Laminar Mixing in Fractal Perforated Plate Static Mixers B. Manshoor, I.B. Zaman, M.Z. Ngali and A. Khalid	31
Effects of Various Seeding Methods on Multi-Layered Diamond Coatings Deposited via Hot Filament Chemical Vapor Deposition T.M. Yong and E. Hamzah	36
Time-Frequency Signal Analysis in Machinery Fault Diagnosis: Review K.H. Hui, L.M. Hee, M.S. Leong and A.M. Abdelrhman	41
Analysis of Axial Vibration in the Laminated Rubber-Metal Spring M.A. Salim, A. Putra and M.A. Abdullah	46
Effect of Variation in Grain Size on High Temperature Creep Test of Fe-Ni-Cr Alloy E. Hamzah, M. Mudang and M.A. Khattak	51
Effect of Grain Size on the Isothermal Oxidation of Fe-33Ni-19Cr Alloys at 700 °C N. Parimin, E. Hamzah and A. Amrin	56
Performance and Emission of a Diesel Engine Fuelled with Preheated Palm Oil Biodiesel under High Load Conditions A. Khalid, N. Mustaffa, A.J. Alimin, B. Manshoor, S.M. Basharie and A. Sadikin	61
Spray Characteristic of Diesel-Water Injector for Burner System A. Khalid, S.H. Amirnordin, L. Lambosi, B. Manshoor, M.F. Sies and H.B. Salleh	66
Development of Hybrid Semi-Analytical and Finite Element Analysis to Calculate Sound Radiation from Vibrating Structure A. Putra, N. Shyafina, M. Noryani, H. Bakri and N.F. Saari	71
Effect of Solder Volume on Interfacial Reaction between SAC405 Solders and EN(B)EPiG Surface Finish S. Azlina, A. Ourdjini, A. Amrin and I. Siti Rabiattul Aisha	76
Wear Properties of Oil Palm Cellulose Fibre Reinforced Polymer Composites D. Sujana, C.W. Nguong, S.N.B. Lee and M. G. Zewge	81
Static Analysis of a Laminated Rubber-Metal Spring Using Finite Element Method A. Putra, S. Norfarizan, H. Samekto and M.A. Salim	86
Characterizations of Zeolite, Polyaniline and Zeolite/Polyaniline as Antifouling Materials for Marine Applications A. Ahdash, E. Hamzah, A. Ourdjini and A. Abdolahi	91

Effect of High Strain-Rate Thermomechanical Processing on Microstructure and Mechanical Properties of Ti-10V-2Fe-3Al Alloy P. Skubisz, M. Packo, K. Mordalska and T. Skowronek	96
Inclined Injection of Supersonic Steam into Subcooled Water: A CFD Analysis A. Khan, K. Sanaullah, M.S. Takriff, H. Zen and L.S. Fong	101
Effect of Ageing Temperatures on the Transformation Behaviour of Ti-50.7at.%Ni Shape Memory Alloy K. Hastuti, E. Hamzah and J. Hashim	108
Analysis of Residual Wavelet Scalogram for Machinery Fault Diagnosis L.M. Hee, M.S. Leong and K.H. Hui	113
Effect of Elements Cerium and Lanthanum on Eutectic Solidification of Al-Si-Cu near Eutectic Cast Alloy M.B.A. Asmael, R. Ahmad, A. Ourdjini and S. Farahany	118
Blade Faults Classification and Detection Methods: Review L.M. Hee, M.S. Leong and K.H. Hui	123
The Influence of γ-Irradiation on the Structure and Properties of the Cu-11.5 wt. % Al-4 wt. % Ni Shape Memory Alloys S.N. Saud, E. Hamzah, T. Abubakar, A. Refaei and R. Hosseinian	128
Vibration Analysis of Multi Stages Rotor for Blade Faults Diagnosis A.M. Abdelrhman, M.S. Leong, L.M. Hee and K.H. Hui	133
Bioremediation of Biofuel-Soil Contamination by Using <i>Pseudomonas putida</i> N.M. Sunar, Q. Emparan, A.T.A. Karim, S.F.M. Noor, M. Maslan, F. Mustafa and N. Khaled	138
The Effectiveness of Bioremediation Treatment for Diesel-Soil Contamination N.M. Sunar, Q. Emparan, A.T. Abdul Karim, S.F.M. Noor, M. Maslan, F. Mustafa and N. Khaled	146
Determining the S-N Fatigue Curve for Lava Zirconium Dioxide M. Wirwicki and T. Topoliński	153
Development of Microbial Metabolic Processes to Repair Concrete Joint Leakage F. Kubo, S. Okazaki and I. Ujike	158
Acquisition of Capillary Pore Structure by X-Ray CT and Visualization of Flow by Numerical Analysis M. Shibata, S. Okazaki and I. Ujike	163
Simulation of Drill Pipe Lateral Vibration due to Riser's Oscillation N. Al Batati, F.M. Hashim and W. Pao	168
Corrosion Behavior of Low Carbon Steel Welded Joint in NaCl Solution M.F. Mamat and E. Hamzah	173
Effect of Heat Treatment on Mechanical Properties and Susceptibility to Stress Corrosion Cracking of Aluminium Alloy Z. Nur Ismarrubie, K.W. Loh and H. Yussof	178
Three-Dimensional Modelling and Finite Element Analysis of an Ankle External Fixator M.H. Ramlee, M.R.A. Kadir and H. Harun	183
Evaluation of Epoxidized Natural Rubber Latex Based Pressure Sensitive Adhesives Containing Hydrocarbon and Rosin Ester Tackifier Dispersions on Adhesive Properties A.B. Rohani, M.S. Jaswan and V. Devaraj	189
Influence of Polyethylene Thickness on Axis Pin in Linked Elbow Implant M. Heidari, M.N. Harun and A. Syahrom	194
Strength Prediction of Notched Woven Composite Plates Using a Cohesive Zone Approach H. Ahmad, A.D. Crocombe and P.A. Smith	199
Synthesis and Characterization of Novel Hybrid Ladderlike Polysilsesquioxanes Containing Polypropylene Moieties D.S. Park, T.S. Ha, J.H. Lim and K.M. Kim	204
A Well-Condition Asymptotic Waveform Evaluation Method for Heat Conduction Problems M.S. Rana, K. Jeevan, R. Harikrishnan and A.W. Reza	209
The Effect of Cannulated Screw Placement Angle in the Management of Femoral Neck Fracture M.F. Ishak, M.R.A. Kadir, H. Harun and S. Abdul Rahman	216
Investigation of Intermetallic Phase Formation and Structural Analysis in Annealed Al/Cu Bilayer Thin Films Z.A.A. Halim, M.A.M. Yajid, Z.M. Rosli and R.A.M. Ali	221

Improvement of Cylinder Buckling Knockdown Factor through Imperfection Sensitivity M.S. Ismail, B.T.H.T. bin Baharudin, Z. Talib and S.A. Yahya	226
Mathematical Modeling of Decarburization and Oxidation during Reheating Process of SAE1070 Steel Billets W.A. Gouveia, V. Seshadri, I.A. Silva and C.A. Silva	231
Tensile and Thermal Properties of <i>Bambusa arundinacea</i> and <i>Dendrocalamus asper</i> Culm Fibers H. Ardhyanta, F. Abdul, Widyastuti, Sulistijono, A. Hassan and D. Kurniawan	237
XRD Investigations on Film Thickness and Substrate Temperature Effects of DC Magnetron Sputtered ZnO Films J.W. Hoon, K.Y. Chan and C.Y. Low	241
<i>In Vitro</i> Analysis of Hydroxyapatite Coated Bio-Additive Manufactured Implant K. Hariharan and G. Arumaikkannu	246
The Effects of Solution Baths to the Microstructure and Thickness of Ni-Ti Plating by High Speed Plating N. Zaimah and M.S. Hussain	251
Characterization of Nigerian Clay as Porous Ceramic Material M. Abubakar, A.B. Aliyu and N. Ahmad	256
Characterizations of Physical Properties of Sn-Bi Solder Alloy S. Amares, M.N. Ervina Efzan and T.C. Yap	261
Finite Element Simulation: The Effects of Loading Modes at Different Anatomical Sites of Trabecular Bone on Morphological Indices S.J. Fatihhi, S. Ardiyansyah, M.N. Harun, A.A.R. Rabiatal, A. Jaafar and Afriwardi	266
Finite Element Analysis of Fatigue in Pipelines due to Slug Flow A.O. Mohmmmed, H.H. Al-Kayiem, M.S. Nasif and Z.I. Mohammed	271
<i>In Situ</i> Detection of Partial Discharge Using Leakage Current, Fiber Optic Sensor and Piezoelectric Sensor Techniques M.M. Yaacob and M.A. Alsaedi	277
Partial Discharge Detection Using Acoustic and Optical Methods in High Voltage Power Equipments: A Review M.A.R. Al Saedi and M.M. Yaacob	283
Application of Vickers Indentation Cracking to the Evaluation of Mechanical Properties of very Thin Metallic Films Y. Nakamura	287
Tensile Properties and Fatigue Strength in High Humidity in Extruded 7075 Al Alloys with Different Aging Conditions Y. Nakamura, N. Kawagoishi and K. Kariya	292
Experimental Investigation on Free Vibration of Foam-Core Sandwich Plate with and without Circular Polymer Columns B. Abdi, S. Azwan, A. Amran, R.A. Rahman and R.A. Abdullah	297
Quasi-Static Flexural and Tensile Behavior of Glass Fiber Reinforced Polymer S. Azwan, B. Abdi, Y.M. Yazid and A. Amran	302
Enhanced Functional Properties of Natural Fiber-Reinforced Composites H. Takagi, K. Liu, A.N. Nakagaito and Z.M. Yang	306
Study of Wear Prediction on Total Ankle Replacement A.M.S. Putra, M.N. Harun and S. Ardiyansyah	311
Lubricant Potentiality of Degraded Palm Oil and Effect of Free Fatty Acid Addition K. Ikeda, K. Tomohiro and H. Ito	316
Quasi-Static Flexural and Indentation Behavior of Glass Fiber Reinforced Polymer Composite Sandwich Panel S. Azwan, B. Abdi, Y.M. Yazid and A. Amran	320
Linear Elastic Analysis of Bovine Cortical Bone under Compression Loading T.P. Ng, S.S.R. Koor, J.R.P. Djuansjah and M.R.A. Kadir	324
Maerogel: Alternative for Thermal Barrier Coating Topcoat I.S.M. Zulkifli, M.A.M. Yajid, H. Hamdan and M.N.M. Muhid	330
Study the Effect of Fluid Medium toward Synthetic Cancellous Bone Structure A.A.R. Rabiatal, S.J. Fatihhi, S. Ardiyansyah, M.N. Harun, A. Jaafar and Afriwardi	335

Simulation of MEMS Capacitive Thermal Sensor Based on Tip Deflection of a Functionally Graded Micro-Beam	
M.A. Ghadim, M. Mailah, B. Mohammadi-Alasti and M.A. Ghadim	340
Hydrogen Adsorption of Carbon Nanocone Arrays: Influences of Cone Arrangements	
I.L. Chang, M.L. Liao and C.H. Chuang	345
Piping Vibration due to Pressure Pulsations: Review	
M.H. Ghazali, L.M. Hee and M.S. Leong	350
Review: Effect of Alloying Element on Al-Si Alloys	
M.N. Ervina Efzan, H.J. Kong and C.K. Kok	355
Mechanical Behavior of Functionally Graded Sandwich Hollow Cylinders under Internal Pressure	
T.A.D.M.S. Almula, Y.M. Yazid and A. Amran	360
A Delamination in a Three Layers Laminated Beam Subjected to Thermal Gradient	
M. Oda, B.I. Anis Farhana and Y. Nakamura	367
Three-Dimensional Potential and Electric Field Distributions in HV Cable Insulation Containing Multiple Cavities	
N.A. Hadi, Z. Abdul-Malek, S.V. Mashak and A.R. Naderipour	372
Composition Modification of Electroplated Nickel Interlayer on Tungsten Carbide Substrate by Thermal Carburizing	
H.A. Wahab, M.Y. Noordin, S. Izman, Z. Kamdi and D. Kurniawan	378
A Novel Iterative Method for Simulating Patient-Specific Optimal Deformation and Fit of Fracture Fixation Plates	
H.H. Harith, J. Malekani, B. Schmutz, M. Schuetz and P.K.D.V. Yarlagadda	382
Modelling the Elastic Constants of Cubic Zirconia Using Molecular Dynamics Simulations	
I.D. Muhammad, M. Awang and O. Mamat	387
Electro Synthesized MoTe₂ Thin Films and their Semiconductor Studies towards Photoelectrochemical Cell	
T.J.S. Anand and N.H. Mazlan	392
Influence of Graphite Reinforcement on Mechanical Properties of Aluminum-Boron Carbide Composites	
C. Muthazhagan, A. Gnanavelbabu, G.B. Bhaskar and K. Rajkumar	398
Failure Analysis of Cementless Hip Joint Prosthesis	
N. Dhandapani, A. Gnanavelbabu and M. Sivasankar	403
Surface Modification of 2205 Duplex Stainless Steel by Low Temperature Thermochemical Hybrid Heat Treatment at 450° C	
M.S. Adenan, M.N. Berhan and E. Haruman	408
Influence of Fillers Surface Characteristics on Bound Rubber Properties of Filled Natural Rubber Compounds	
M.M. Kamal	412
Finite-Element Study on Effect of String Tension toward Coefficient of Restitution of a Badminton Racket String-Bed	
A.N. Fakhrizal, S. Ardiyansyah, M.N. Harun, M.R.A. Kadir and A.H. Omar	417
Visible-Light Photodegradation of Diisopropanolamine Using Bimetallic Cu-Fe/TiO₂ Photocatalyst	
R.M. Ramli, C.F. Kait and A.A. Omar	421
Microwave Hybrid Heating of Materials Using Susceptors - A Brief Review	
B. Yahaya, S. Izman, M. Konneh and N. Redzuan	426
Tensile Behaviour of Al5052 Alloy Sheets Annealed at Different Temperatures	
V. Mugendiran, A. Gnanavelbabu and R. Ramadoss	431
Influence of Bias Voltage on Corrosion Resistance of TiN Coated on Biomedical TiZrNb Alloy	
A. Shah, S. Izman, M.R. Abdul Kadir, H. Mas-Ayu, M. Anwar and A.B. Ma'aram	436
Analysis of Contamination Soil with Cu from Road Side by Using Laser Ablation Technique	
M. Arab and N. Bidin	441
Effect of CaO on Barium Zinc Tantalate (BZT) Dielectric Properties	
J. Hidayani	446
Nanoreinforcement of Pectin Film to Enhance its Functional Packaging Properties by Incorporating ZnO Nanoparticles	
N.E. Suyatma, Y. Ishikawa and H. Kitazawa	451

Preparation of Ni Loaded on Zeolite and its Application for Conversion of Glycerol to Hydrogen	
R. Mat, J. Buhari, M. Mohamed, A. Johari, T.A. Tuan Abdullah and A. Ali	457
Influence of Carbon Concentrations in Reducing Co and Cr Ions Release in Cobalt Based Implant: A Preliminary Report	
H. Mas-Ayu, S. Izman, M.R. Abdul Kadir, R. Daud, A. Shah, M.F.M. Yusoff, M.W. Shamsiah, T.M. Yong and T. Kamarul	462
Adhesion Strength of HFCVD Diamond Coating on WC Substrate Seeded with Diamond and Different Ratios of SiC Powders	
E.M. Nazim, S. Izman, A. Ourdjini, T. Abubakar and H. Mas-Ayu	467
Analysis of Building Materials for Indoor Thermal Performance and Thermal Comfort	
H. Djamila	472
Efficiency of Visible Light Assisted Fenton Oxidation of Diisopropanolamine (DIPA) of Natural Gas Industry Wastewater	
R.L.L. Zhi, M.A. Bustam, N. Riaz and M.S. Azmi	477
Short-Term Breakdown in Silicone Rubber Based Nanocomposites Caused by Electrical Treeing	
A.A.A. Jamil, M.H.B. Ahmad, M. Kamarol, M. Mariatti and M.A.M. Piah	482

II. Industrial Engineering

Recycling of Aluminium - Developing Design Criteria for Aluminium Cans Compressor	
T.O. Kowang, C.S. Long, A.B.M. Rasli, M.A. Bin Mohd Daril and I. Mustapha	489
The Utilization Potential of Rice Husk as an Alternative Energy Source for Power Plants in Indonesia	
M. Anshar, A.S. Abd Kader and F.N. Ani	494
Knowledge Spillover, Absorptive Ability and Performance of Firms in High-Tech Clusters	
Z.Z. Pan and Y.H. Liu	499
The Need of End-of-Life Vehicles Management System in Malaysia	
T.N.A.R. Mamat, M.Z.M. Saman and S. Sharif	505
Evaluating ARIMA-Neural Network Hybrid Model Performance in Forecasting Stationary Timeseries	
S.N. Seyedi, P. Rezvan, S. Akbarnatajbisheh and S.A. Helmi	510
Performance Measurement System for Sustainable Supply Chain Management	
M.E. Torabizadeh, M.Y. Noordin and M.S. Awaluddin	516
A Hybrid Fuzzy MCDM Approach for Sustainable Third-Party Reverse Logistics Provider Selection	
G. Tajik, A.H. Azadnia, A.B. Ma'aram and S.A.H.S. Hassan	521
Probabilistic Formulation for Emergency Facility Location in a Divided Area	
S.A. Mirzapour, K.Y. Wong, S.S. Hosseini and S. Shiripour	527
Multi-Floor Facility Layout Improvement Using Systematic Layout Planning	
S.S. Hosseini, K.Y. Wong, S.A. Mirzapour and R. Ahmadi	532
ANFIS Based Effluent pH Quality Prediction Model for an Activated Sludge Process	
M.S. Gaya, N.A. Wahab, Y.M. Sam and S.I. Samsuddin	538
Comparison of ANFIS and Neural Network Direct Inverse Control Applied to Wastewater Treatment System	
M.S. Gaya, N.A. Wahab, Y.M. Sam and S.I. Samsuddin	543
Technology Management: Developing an Innovation Model for Research Universities in Malaysia	
T.O. Kowang, T.M. Yee, C.S. Long, A.B.M. Rasli and F.A.A. Bakar	549
A Knowledge-Based Analytics System via Online Monitoring of Dissolved Gas in Power Transformer – A Conceptual Framework	
M.R.A. Rahman and M.I. Ridwan	554
A Hybrid Genetic Algorithm for Solving Job Shop Scheduling Problems	
H. Piroozfard, A. Hassan, A.M. Moghadam and A. Derakhshan Asl	559
Solving an Industrial Shop Scheduling Problem Using Genetic Algorithm	
A.M. Moghadam, K.Y. Wong, H. Piroozfard, A. Derakhshan Asl and T. Shanty Hutajulu	564

Solving a Capacitated p-Median Location Allocation Problem Using Genetic Algorithm: A Case Study	
A.M. Moghadam, H. Piroozfard, A.B. Ma'aram and S.A. Mirzapour	569
Recycler Selection Using Fuzzy AHP by Considering Sustainability	
G. Khodaei, K.Y. Wong and M.K. Tiwari	574
Fuzzy Logic Approach for Assessing Sustainability: Methodology Development for Hollow Fiber Membrane Module	
S. Mahmood, A.R. Hemdi, M.Z.M. Saman and M.Y. Noordin	579
Pattern Recognition Using Mahalanobis-Taguchi System on Connecting Rod through Remanufacturing Process: A Case Study	
M.Y. Abu, K.R. Jamaludin and F. Ramlie	584
Preliminary Framework of Sustainable Maintenance Performance Measurement Systems for Automotive Companies	
E. Sari, A.B.M. Shaharoun and A.B. Ma'aram	590
Modeling and Simulation of a Heat Recovery Steam Generator Using Partially Known Design Point Data	
M. G. Zewge, T.A. Lemma, A.A. Ibrahim and D. Sujan	596
A Review of Ergonomics and Simulation Modeling in Healthcare Delivery System	
A. Anjomshoe, A. Hassan and M.R. Abdul Rani	604
Considered Values for a Supplier Selection Case at an Automotive Company	
F. Guerhardt and R.M. Vanalle	609
Review of the Relationship between Reverse Logistics and Competitiveness	
R.P. Andrade, W.C. Lucato, R.M. Vanalle and M. Vieira Jr.	614
A Review of Inventory Management for Remanufacturing Environment	
V.A. Pourghadim, M.Y. Noordin and K.Y. Wong	618
A Conceptual Model of Work Productivity Associated with Work-Related Musculoskeletal Disorders in the Industrial Repetitive Task	
N. Mohd Nur, S.Z. Md Dawal and M. Dahari	623
Competencies of Work in Agricultural Research Units	
M.d.L.S. Luz and J.A. Camarotto	627
Size Optimization Using Normalized Radial Basis Function and Bat Algorithm	
T.A. Lemma and M.H. Fakhruddin	631
Taguchi Method Approach for Recycling Chip Waste from Machining Aluminum (AA6061) Using Hot Press Forging Process	
M.S. Shahrom, A.R. Yusoff and M.A. Lajis	637
A Survey on Lean Manufacturing Tools Implementation in Malaysian Food and Beverages Industry Using Rasch Model	
N.S. Khusaini, A. Jaffar and Y. Noriah	642
Semi-Quantitative Risk Assessment Matrix for Rotating Equipment	
M.A. bin Abd Majid, R.K. Wassan and A.A. Mokhtar	647
Low-Cost Strategy Factors in Airline Industry: The AirAsia Case	
A.R. Jeddi, N.G. Renani, A. Khademi, V. Shokri and M.Y. Noordin	652
Assessment of Human Factor Performance Using Bayesian Inference and Inherent Safety	
N.D.A. Wahab, R. Rusli, A. Mohd Shariff, A. Buang and N.A. Wahab	658
Researches on Mitigation of Risks of Logistics Finance Caused by Information Not Fully Shared	
X.H. Sun and X.J. Chu	663
Critical Success Factors for Lean Manufacturing: A Systematic Literature Review an International Comparison between Developing and Developed Countries	
S. Zargun and A. Al-Ashaab	668
Preliminary Work Towards Development of a Dynamic Job Shop Scheduling Model	
W.N.W. Hussin, A. Hassan, A.H. Halim and Z. Zakaria	682
Discovering Barriers of Lean Manufacturing System Implementation in Malaysian Automotive Industry	
E.N. Roslin, A. Shamsuddin and S.Z.M. Dawal	687
Conceptual Optimization Model of Inventory/Distribution Network with Multi Role Nodes	
N.M.H. Omar, M.M. Tap and N. Redzuan	692
A Conceptual Methodology for Recognition of Constrained Control Chart Patterns	
R. Haghighati and A. Hassan	696

III. Manufacturing Engineering

Towards the Integration of Mobile Augmented Reality within an Aluminium Process Fault Detection and Diagnosis System A.M.N. Aini and H. Arshad	703
Effect of Cutting Parameters on Surface Roughness in Turning of Bone P.Y.M.W. Ndaruhadi, S. Sharif, M.Y. Noordin and D. Kurniawan	708
Review on Methodology for Life Cycle Costing of Membrane System for Wastewater Filtration N.S. Jiran, S. Mahmood, M.Z.M. Saman and M.Y. Noordin	713
Experiment Investigation of Hole Accuracy and Surface Roughness in Femur Bone Drilling Using Different Parameters P.Y.M.W. Ndaruhadi, S. Sharif and D. Kurniawan	720
Determination of Parameters for Sustainability Assessment of Hollow Fiber Membrane Module Life Cycle S. Mahmood, N.S. Jiran, M.Z.M. Saman and M.Y. Noordin	724
Effect of Peak Current on Material Removal Rate for Electrical Discharge Machining of Non-Conductive Al₂O₃ Ceramic M.A. Moudood, A. Sabur, Y.A. Mohammad and I.H. Jaafar	730
Effects of On-Time on Microstructure and Corrosion Resistance of Pulse-Micro-Arc Oxidation Coatings Formed on Titanium Alloy Y.S. Chen and Y.Y. Tsai	735
Offline Programming to Control Robot Manipulator in Virtual Kinematic Learning Tool K.C. Yir, H. Arshad and E. Sundararajan	740
Texture Feature Analysis of Milled Components Using Vision System D.M. Shivanna, S.D. Kavitha and M.B. Kiran	745
Autonomous Mobile Robot Platform for On-the-Road Navigation M.A.H. Ali, M. Mailah, H.H. Tang and M.A.A. Rahim	750
Effect of Buffer Size Variation on Remanufacturing Environment V.A. Pourghadim, M.Y. Noordin and K.Y. Wong	755
Tool-Life of Wiper and Standard Cutting Tool in Finish Turning of SAE 4140 A.J. Souza and G.C. Rosa	760
Comparative Analysis on Wiper and Standard Tools in Dry Finish Turning of Martensitic Stainless Steel AISI 420 G.C. Rosa, A.J. Souza and F.J. Lorini	765
Comparison of Different Scenarios Using Computer Simulation to Improve the Manufacturing System Productivity: Case Study S.M. Zahraee, M. Hatami, J.M. Rohani, H. Mihanizadeh and M. Haghighi	770
Effect of Butt Joint on Mechanical Properties of Welded Low Carbon Steel T.T.B. Wardoyo, S. Izman and D. Kurniawan	775
A Review on Intelligence STEP-NC Data Model and Function Blocks CNC Machining Protocol S.B. Mohamed, A. Jameel and M. Minhat	779
Power Demand Calculations in Turning of Aluminum Alloy R. Nur, M.Y. Noordin, S. Izman and D. Kurniawan	786
Parametric Control of Oxyacetylene Flame Profile A.U. Alkali, T.L. Ginta and A.M. Abdul-Rani	790
Synthesis and Characterization of Polyaniline-Polypyrrole Composite A. Abdolahi, E. Hamzah, S. Hashim and Z. Ibrahim	795
The Effect of Cutting Parameters on Power Consumption during Turning Nickel Based Alloy R. Nur, M.Y. Noordin, S. Izman and D. Kurniawan	799
Estimation of Charge Mass for High Speed Forming of Circular Plates Using Energy Method R. Alipour, S. Izman and M.N. Tamin	803

Examining the Effect of Various Vegetable Oil-Based Cutting Fluids on Surface Integrity in Drilling Steel - A Review A.Z. Sultan, S. Sharif and D. Kurniawan	809
Sustainability Assessment Methodology for Concrete Manufacturing Process: A Fuzzy Inference System Approach P. Rezvan, A.H. Azadnia, M.Y. Noordin and S.N. Seyedi	814
Experimental Investigation the Drill Bit Curve Radius & Chisel Point on Effect of Induced Damage in Drilling Woven GFRP M.A. Hoseiny, R. Moghiseh-E, A. Alinaghizadeh, P. Soltani and V.M. Hachesoo	819
Theoretical Analysis of Velocity and Position Loop Behaviour of Nonlinear Cascade Feedforward Controller for Positioning of XY Table Ballscrew Drive System L. Abdullah, Z. Jamaludin, M.R. Salleh, B. Abu Bakar, J. Jamaludin, T.H. Chiew and N.A. Rafan	831
Glycerol as Plasticizer for Waste Polystyrene Based Metal Injection Molding (MIM) Binder N.N. Ismail, K.R. Jamaludin and N. Ahmad	837
An Application of Failure Mode and Effect Analysis to Cylinder Head during Dismantle of Remanufacturing Process: A Case Study M.Y. Abu, K.R. Jamaludin, A.S. Abdul Sani, T.A. Abdullah and D.A. Wahab	841
Development of Multi-Criteria Decision Analysis Methodology to Determine Product End-of-Life Treatment Options A. Ullah, M.Z.M. Saman and S. Mahmood	852
Investigation of Recast Layer of Non-Conductive Ceramic due to Micro-EDM A.R. Mohamed, B. Asfana and Y.A. Mohammad	857
Influence of Process Parameters on Surface Finish in Customized Bone Implant Using Selective Laser Sintering K.S. Lakshmi and G. Arumaikkannu	862
Manufacturing of MWNT Filled Carbon Fiber Reinforced Polypropylene with Gelatin J.U. Roh and W.I. Lee	868
Cleaner Production Associated with Financial and Environmental Benefits: A Case Study on Automotive Industry G.C.O. Neto, S.M. Souza and E.A. Baptista	873
Parametric Study of Powder Mixed Electrical Discharge Machining and Mathematical Modeling of SiSiC Using Copper Electrode A.A. Aliyu, M. Hamidon and J.M. Rohani	878
Application of Mahalanobis-Taguchi System on Crankshaft as Remanufacturing Automotive Part: A Case Study M.Y. Abu and K.R. Jamaludin	883
Effect of Cooling/Lubrication Using Cooled Air, MQL + Cooled Air, N₂ and CO₂ Gases on Tool Life and Surface Finish in Machining – A Review A.E.I. Elshwain and N. Redzuan	889
Effects of Friction Modifier Additives on HDD Substrate Defects and Surface Topography during CMP S. Sideq and S. Izman	894
Effect of Manufacturing Process on Free Vibration of Foam-Core Sandwich Plate B. Abdi, S. Azwan, A. Amran, R.A. Rahman and Y.M. Yazid	899
Current Situation in Cleaning Process of Remanufacturing in Malaysia: A Case Study M.Y. Abu, K.R. Jamaludin, A.S. Abdul Sani, T.A. Abdullah and D.A. Wahab	904
High-Speed Photographic Study of Chip Formation during End Milling of GFRP Composites A.I. Azmi, R.J.T. Lin and D. Bhattacharyya	915
Design and Fabrication of Customised Scaffold for Femur Bone Using 3D Printing V. Iramudi, S.R. Begum, G. Arumaikkannu and R. Narayanan	920
The Influence of Braiding Angle Variation in Braided-Twisted Fiber Scaffold Based Poly L-Lactic Acid for Anterior Cruciate Ligament Reconstruction Application Z. Mardina, N. Fitriana, R. Siswanto, O. Oktavina, N. Zahra, P. Widiyanti, D. Rudyarjo, E. Indarto and R. Langenati	925
Empirical Determination of Roughness Parameters Using Wiper Tool Inserts in Finish Turning of AISI 4140 M. Geier and A.J. Souza	929

Cutting Force and Temperature Variation in Bone Drilling - A Review T.L. Ginta and B. Ari-Wahjoedi	934
Influence of Waste Rubber on the Properties and Microstructure of Injection Moulded M2 High Speed Steel N.A. Wahab, M.A. Omar, N.A. Nordin, R. Sauti and M.D.K. Bahrin	939
Effect of Higher Peak Current and Pulse Duration on EWR of Copper Electrode when Electrical Discharge Machining (EDM) of Inconel 718 S. Ahmad and M.A. Lajis	945
Investigation of Process Performances and Cut Surface Characteristics in the Wire-EDMing of Silicon J. Punturat, V. Tangwarodomnukun and C. Dumkum	950
Oil Spills Hazard and Sustainable Mitigation Approach: A Review J. Idris, Z. Ahmad, G.D. Eyu and C.S. Chukwuekezie	955
Effects of Cutting Parameters on Hole Integrity when Drilling GFRP and HFRP Composites M.A. Maoinser, F. Ahmad and S. Sharif	960
Effect of Drill Point Angle on Surface Integrity when Drilling Titanium Alloy M.N. Murad, S. Sharif, E.A. Rahim and Rival	966
Manufacturing Process of Blended Delta-Shaped Wing Model S. Mat, I.S. Ishak, K. Zakaria and Z.A. Khan	971
TCP/IP-Based Control and Monitoring of Manufacturing System M. Abrishamkar, M. Hussein, K. Zakaria and H. Maleki	975
Micro-Electrode Fabrication Process Using EDM M. Hourmand and M.Y. Noordin	980
Effect of Electrospinning Parameters Setting towards Fiber Diameter N.H.A. Ngadiman, M.Y. Noordin, A. Idris and D. Kurniawan	985