

Table of Contents

Preface and Organizing Committee

Chapter 1: Material Science

| | |
|--|----|
| Tensile Shear Strength of Wood Adhesive from Recycled Polystyrene M.A.H. Mohd Jasri, M. Afendi, N.Z. Nik, B. Izzawati, S. Nurhashima, A. Nor, S. Yahud and N.A.M. Amin | 3 |
| Comparison of Dry and Cryogenic Machining on Chip Formation and Coefficient of Friction in Turning AISI 4340 Alloy Steel N.A. Raof, J.A. Ghani, J. Syarif, C.H. Che Haron and M.A. Hadi | 7 |
| Tribological Characterization of the Cutting Zone in Milling Nickel Based Alloy M.A. Hadi, J.A. Ghani, C.H.C. Haron and N.A. Raof | 12 |
| Effect of Salicylic Acid / Ethanol Treatment on Tensile Properties and Morphology Analysis of Recycled High Density Polyethylene / Wood Fiber Composites M.P.M. Hanif, A.G. Supri and Z. Firuz | 17 |
| Comparison on the Characteristics of Bio-Based Porous Carbons by Physical and Novel Chemical Activation J. Mohammed, N.S. Nasri, M.A.A. Zaini, U.H. Dadum and M.M. Ahmed | 22 |
| Effect of Nano-Clay and their Dispersion Techniques on Compressive Properties of Unsaturated Polyester Resin M.S. Fartini, M.S.A. Majid, M. Afendi, R. Daud and A. Mohamad | 27 |
| The Instability Improvement of the Shape Memory Alloy Composite Plates Subjected to In-Plane Parabolic Temperature Distribution Z.A. Rasid, R. Zahari and A.B. Ayob | 32 |
| A Review of Porous Concrete Pavement: Applications and Engineering Properties P.J. Ramadhansyah, M.Y. Mohd Ibrahim, M.R. Hainin and M.H. Wan Ibrahim | 37 |
| Natural-Synthetic Polymer Blend Composite Scaffold for Bone Tissue Engineering: Study of <i>In Vitro</i> Degradation and Protein Adsorption N. Sultana | 42 |
| The Effects of Nickel Underlayer and Solder Dipping as Tin Whisker Mitigations in Tin Surface Finishes H.P. Lim, A. Ourdjini and T.A. Abu Bakar | 47 |
| Fabrication and Characterization of Polycaprolactone (PCL)/Gelatin Electrospun Fibers M.M. Lim, N. Sultana and A. Bin Yahya | 52 |
| Polycaprolactone(PCL)/Gelati(Ge)-Based Electrospun Nanofibers for Tissue Engineering and Drug Delivery Application L.H. Chong, M.M. Lim and N. Sultana | 57 |
| Mechanical Properties of Polyamide 6 (Pa6) / Ethylene Vinyl Acetate (Eva) / Sepiolite Composite N.T.M. Fauzi and Z. Mohamad | 62 |
| The Study of Morphological Structure and Raman Spectra of 3C-SiC Membranes F.M.N. Nasir, P.W. Leech, G.K. Reeves, B.C. Johnson, P. Tanner and A.S. Holland | 66 |
| Effect of Epoxidation Level in Silica Filled Epoxidized Natural Rubber Compound on Cure, Rheological, Mechanical and Dynamic Properties A.A. Rohadi, A.R. Rahmat and M.M. Kamal | 71 |
| Preliminary Study on Bamboo as Sound Absorber F.A. Khair, A. Putra, M.J. Mohd Nor, N. Atiqah and M.Z. Selamat | 76 |
| Influence of Compatibilizer on Mechanical Properties of Polylactic Acid/Natural Rubber Blends N.N.B. Mohammad, A. Arsal, A.R. Rahmat, M.S. Talib and M.S.Z. Mad Desa | 81 |
| Preparation and Characterization of Polyvinyl Alcohol/Starch Blend Film Composite N.S. Lani and N. Ngadi | 86 |

| | |
|--|-----|
| Effect of Maleic Anhydride (MA) on Properties of Recycled High Density Polyethylene/Ethylene Vinyl Acetate/Egg Shell Powder (rHDPE/EVA/ESP) Composites | 91 |
| R.N. Farahana, A.G. Supri and P.L. Teh | |
| Synthesis of a Compatibilizer and the Effects of Monomer Concentrations | 96 |
| N.S. Abdullah Sani, A. Arsal and A.R. Rahmat | |
| Preparation of Epoxy-Novolac Resin Binder Using Phenolic Rich Fractions of Biomass Pyrolytic Oil as Partial Substitute of Phenol | 101 |
| M.M. Ahmed, N.S. Nasri, R. Mohsin, U.D. Hamza and J. Mohammed | |
| Performance of RHA Blended Cement Concrete under Sodium Chloride via Wetting and Drying | 106 |
| S.J. Dewi, P.J. Ramadhansyah, A.H. Norhidayah, A.A. Md. Maniruzzaman, M.R. Hainin and C.W. Che Norazman | |
| Porous Concrete Paving Blocks Using Coarse Aggregate | 111 |
| A.H. Nur Hidayah, M.N. Hasanan and P.J. Ramadhansyah | |
| The Using Fungi Treatment as Green and Environmentally Process for Surface Modification of Natural Fibres | 116 |
| S.M. Khoshnava, R. Rostami, M. Ismail and A. Valipour | |
| Effects of Stone Powder on Water Absorption and Biodegradability of Low Density Polyethylene/Palm Pressed Fibre Composite Film | 123 |
| N.F. Aris, R.A. Majid, W.H.W. Hassan, M.F. Abd Rahman and Y.M. Ng | |
| Double Layer Concrete Paving Blocks Using Waste Tyre Rubber as Aggregate Replacement | 128 |
| E. Jusli, H. Md Nor, P.J. Ramadhansyah and H. Zaiton | |
| Partial Discharge Characteristic of Low Density Polyethylene and Silica Nanocomposite | 133 |
| Aulia, Z. Abdul-Malek, Y.Z. Arief, M.A.M. Piah and M. Jaafar | |
| Effect of PEgMAH on Tensile Properties and Swelling Behaviour of Recycled High Density Polyethylene/Ethylene Vinyl Acetate/Waste Tyre Dust (r-HDPE/EVA/WTD) Composites | 137 |
| A.R.H. Fatimah, I.H. Abdul Aziz and A.G. Supri | |
| Effect of Polyethylene Grafted Maleic Anhydride (PEgMAH) on Tensile Properties and Swelling Behavior of Ethylene Vinyl Acetate (EVA)/ Natural Rubber (NR)/ Feldspar Composites | 141 |
| S.H. Ho, A.G. Supri and P.L. Teh | |
| Electrical Properties Investigation of Unsaturated Polyester Resin with Carbon Black as Fillers | 145 |
| R. Revati, S. Yahud and M.S.A. Majid | |
| The Performances of Intimately Mix and Layer Methods in Microwave Assisted Pyrolysis System | 150 |
| F. Mushtaq, R. Mat and F.N. Ani | |
| Investigation of the Electrical Resistivity of 20μm-Gap Gold-DNA-Gold Structure: Exploiting the Current-Voltage Characteristics under a Variable External Magnetic Field | 155 |
| N.M. Khatir, Z. Abdul-Malek and S.M. Banihashemian | |
| Stress Analysis of Adhesive Bonding of Urea Granulator Fluidization Bed | 160 |
| A. Nor Bakyah, M. Afendi, M.S. Abdul Majid, A.R. Abdullah and A.B. Shahriman | |
| Mechanical Properties of Vinyl Ester Resin/Epoxydized Plam Oil/Nanoclay Composite | 165 |
| A. Khalili, A.R. Rahmat, A. Fakhari and Z.S. Alsagayar | |
| Development of Mathematical Equation for Chip Serration Frequency in End Milling of Titanium Alloy (Ti6Al4V) under the Influence of Magnetic Field from Permanent Magnets | 170 |
| S.A. Sulaiman and A.N. Amin | |
| Optimization of Preparation of Microwave Irradiated Bio-Based Materials as Porous Carbons for VOCs Removal Using Response Surface Methodology | 175 |
| J. Mohammed, N.S. Nasri, M.A.A. Zaini, U.H. Dadum and M.M. Ahmed | |
| Effect of Low Current for Machining Pit Using Electrical Discharge Machine | 180 |
| S. Syahrullail, M.D. Razak, N. Sapawe, A. Yahya and N. Kartiko | |
| Effects of Silicone Surfactant on the Water Absorption and Surface Morphology of Rigid Palm Oil-Based Polyurethane Foam | 185 |
| S.M.A. Farhana, D. Mohd Haziq, N. Nurfatmah Pz and R.A. Majid | |
| Tensile Strength of Untreated Napier Grass Fibre Reinforced Unsaturated Polyester Composites | 189 |
| J.A. M. Haameem, M.S.A. Majid, E.A.H.E. Ubaidillah, M. Afendi, R. Daud and N.A.M. Amin | |

| | |
|---|-----|
| The Effect of Blending Ratio on Mechanical Properties of Polylactic Acid (PLA) / Ethylene Vinyl Acetate (EVA) | 194 |
| A.M. Siti Naijiah and Z. Mohamad | |
| Effect of Polypropylene Fiber on the Flexural Strength of Ferrocement | 199 |
| F. Usman, S. Shaharudin and M.F. Abd Ghani | |
| Effect of Rice Husk Ash Fineness on the Properties of Concrete | 203 |
| S.J. Dewi, P.J. Ramadhansyah, A.H. Norhidayah, A.A. Md. Maniruzzaman, M.R. Hainin and M.H. Wan Ibrahim | |
| Effects of Elevated Temperatures on the Compression Strength of Nanoclay Filled Unsaturated Polyester Resin | 208 |
| M.S. Fartini, M.S.A. Majid, M. Afendi, N.A.M. Amin and A. Mohamad | |
| Effect of Zinc Coating Thickness on Corrosion Performance of Mild Steel in Atmospheric and Seawater Environment | 213 |
| M.S.N. Idora, M.M. Rahman, M. Ismail and W.B.W. Nik | |
| The Influence of Seawater Velocity to the Corrosion Rate and Paint Degradation at Mild Steel Plate Immersed in Sea Water | 218 |
| M. Ferry, W.B. Wan Nik and C.W. Mohd Noor | |

Chapter 2: Thermo and Fluid Research

| | |
|--|-----|
| Computational Investigation of Film Cooling from Cylindrical and Row Trenched Cooling Holes near the Combustor End Wall | 225 |
| N.A. Che Sidik and K. Ehsan | |
| Application of the Lattice Boltzmann Method for Fluid Flow around Complex Geometry | 230 |
| L. Jahanshaloo, N.A. Che Sidik and E. Kermani | |
| Film-Cooling Techniques at the End of Combustor and Inlet of Turbine in a Gas Turbine Engine: A Review | 236 |
| N.A. Che Sidik and K. Ehsan | |
| COP Improvement of Thermoelectric Cooler through the Optimization of Heat Dissipation System | 241 |
| M.B.S. Hafis, M.J.M. Ridzuan, A.Z.A. Firdaus, S.M. Shahril, R.N. Farahana and C.K. Chong | |
| ANFIS Direct Inverse Control of Substrate in an Activated Sludge Wastewater Treatment System | 246 |
| M.G. Sani, N. Abdul Wahab, Y.M. Sam, S.I. Samsudin and I.W. Jamaludin | |
| The Effect of Water Hammer on Pressure Oscillation of Hydrogen Natural Gas Transient Flow | 251 |
| G.A. Baba and A. Norsarahaida | |
| Energy Savings on Automotive Air Conditioner Using Liquid-Suction Heat Exchanger Subcooler | 256 |
| B.M. Wahyu, K. Sumeru, A.A. Azhar and N. Henry | |
| Numerical Analysis of Modified Ejector Cycle on Ejector as an Expansion Device on Residential Air Conditioner | 261 |
| K. Sumeru, H. Nasution and F.N. Ani | |
| Bio-Oils Characteristic from Oil Palm Biomass from Different Fast Pyrolysis Techniques | 266 |
| F.N. Ani, A.A. Salema and I. Hasan | |
| Evaluation of the Prospects of Using Solar Thermal Air-Conditioning Systems in Saudi Arabia | 271 |
| I. Mazharul, R.A. Muhammad and F.N. Ani | |
| Potential Analysis of Rice Straw as an Alternative Energy Source for Substitute Coal in Indonesia | 276 |
| Makhrani | |
| The Oxidation Effect of Palm Oil Based Lubricant Using Four – Ball Tribotester | 281 |
| S. Syahrullail and P. Zulhanafi | |
| The Influence of Normal Load in Wear Resistance Characteristic of Palm Fatty Acid Distillate | 286 |
| S. Syahrullail, H.M. Norhakem, N. Sapawe and A. Khalid | |
| The Effect of Lubricant Viscosity in Cold Work Forward Extrusion | 291 |
| S. Syahrullail, S. Kamitani and K. Nakanishi | |

| | |
|---|-----|
| Simulation of Flow over a Cavity Using Multi-Relaxation Time Thermal Lattice Boltzmann Method | 296 |
| N.A. Che Sidik and A. Ali Khan | |
| Study of Effect of Thermal Diffusivity on Ground Temperature for Malaysian Climate | 301 |
| T.M. Yusof, S. Anuar and H. Ibrahim | |
| Microwave Assisted Pyrolysis of Waste Biomass Resources for Bio-Oil Production | 307 |
| F. Mushtaq, A.S. Channa, R. Mat and F.N. Ani | |
| Transient Removal of Contaminants in Cavity of Mixed Convection in a Channel by Constrained Interpolated Profile Method | 312 |
| N.A. Che Sidik, A.S. Ahmad Sofianuddin and K.Y. Ahmat Rajab | |
| Simulation Film Cooling in the Leading Edge Region of a Turbine Blade (Trench Effect on Film Effectiveness from Cylinder in Crossflow) | 317 |
| M.R. Bin Pairan, N. Binti Asmuin and H. bin Salleh | |
| Experimental Investigation on the Thermal Insulation Properties of Eic-Cellulose | 322 |
| S. Wuryanti, S. Poertadji, B. Soegijono and N. Henry | |
| Evaluation of Paraffinic Mineral Oil as Lubricant in Cold Work Extrusion Process | 327 |
| S. Syahrullail and M.A. Nurul Aini | |
| Phenolic Rich Components Identification of Heavy Oil Fractions of Biomass Pyrolytic Oil for Epoxy Resin Binder | 332 |
| M.M. Ahmed, N.S. Nasri, R. Mohsin, U.D. Hamza and J. Mohammed | |
| Control System of Fish Feeding Devices in Actual Pond | 337 |
| M.H. Bin Md Jamal and Y.M. Faiz | |

Chapter 3: Applied Mechanics

| | |
|--|-----|
| Finite Element and Experimental Study of Friction and Lubricants in Strip Drawing | 345 |
| M.B.S. Hafis, M.J.M. Ridzuan, A.R. Mohamed and R.N. Farahana | |
| Prototype of Compact Flexural Fatigue Testing Machine | 350 |
| M.A.H. Mohd Jasri, M. Afendi and A.H.M. Fauzi | |
| 3D Finite Element Stress Analysis of Butt Adhesively Bonded Dissimilar Joint: Effect of Bond Thickness on Strength | 355 |
| B. Izzawati, M. Afendi, M. Afif, S. Nurhashima, R. Daud, N.A.M. Amin and M.S.A. Majid | |
| Comparison of NARX Neural Network and Classical Modelling Approaches | 360 |
| M.G. Sani, N. Abdul Wahab, Y.M. Sam, S.I. Samsudin and I.W. Jamaludin | |
| Strength of Ductile Adhesive Butt Joint Bonded with Dissimilar Adherents: Effect of Surface Roughness | 366 |
| N. Atikah, M. Afendi, S. Hirmaliza, M.S. Abdul Majid, N. Amira and M. Mohd Noor | |
| Short-Term Test of ± 55 Filament Wound GRE Composite Pipes under Multiaxial Stress Ratios | 371 |
| K. Pranesh, M.S.A. Majid, M. Afendi, H. Marzuki and M.N.F. Mohd Kazim | |
| Multi Objective Optimization of Surface Roughness and Workpiece Surface Temperature in Turning Operation | 376 |
| A. Nooraziah and V.J. Tiagrajah | |
| Pressure Distribution around Mixing Blades in Biodiesel Reactor Using Computational Fluid Dynamics (CFD) | 381 |
| A. Sadikin, M.I. Md Noor, N.M. Isa, S.M. Basharie and A. Khalid | |
| A Study of Software Approach for Predicting Weld Bead Geometry in Shielded Metal Arc Welding (SMAW) Process | 386 |
| C.W.M. Noor, M. Ferry and W.B.W. Nik | |
| The Interlaminar Shear Strength Test of Helical Wound Glass Fibre Reinforced Epoxy Laminates Subjected to Hydrothermal Ageing | 391 |
| M.S.A. Majid, M. Afendi, R. Daud, N.A.M. Amin, A. Mohamad and M. Hekman | |
| Friction and Wear Performance of Double Fraction Palm Olein Lubricant Using Pin-on-Disk Tribometer | 396 |
| S. Syahrullail and N. Nuraliza | |
| Wear Characterization of Aluminum Lubricated with Palm Olein at Different Normal Load | 401 |
| S. Syahrullail, A.M. Azmi, N. Sapawe and A. Khalid | |

| | |
|---|-----|
| Strength of Three-Point-Bending Ductile Adhesive Joint with Dissimilar Adherents S. Nurhashima, M. Afendi, B. Izzawati, N.A.M. Amin, M.S.A. Majid and M. Taufik | 406 |
| Individual Stiffness of 3D Space Frame Thin Walled Structural Joint Considering Local Buckling Effect M.S. Yob, S. Mansor and R. Sulaiman | 411 |
| The Correlation between Applied Load and Sliding Speed on Wear Behaviour of Tamarind Wood under Dry Sliding Tests B.Y. Zamri and Y. Azmi | 416 |
| Shear Resistance of Trapezoidal Corrugated Web in Local Buckling F. Usman | 421 |
| Stress and Thermal Analysis of CubeSat Structure N. Athirah, M. Afendi, K. Hafizan, N.A.M. Amin and M.S.A. Majid | 426 |
| Predicting Surface Roughness in Turning Operation Using Extreme Learning Machine A. Nooraziah and V.J. Tiagrajah | 431 |

Chapter 4: Mechanical Engineering

| | |
|--|-----|
| Estimation of Threshold Fluence, Absorption Coefficient and Thermal Loading of Car Coated Substrate in Laser Paint Removal M.K.A. Abdul Razab, M.S. Jaafar, A.A. Rahman and S.A. Saidi | 439 |
| Performance Analysis of Hydrocarbon Mixture to Replace R134a in an Automotive Air Conditioning System I. Wellid, K. Sumeru, A.A. Azhar, N. Henry and A.M. Abioye | 444 |
| The Effects of Alkaline Catalysts in Used Frying Oil Biodiesel on the Diesel Engine Performances M. Zamberi, F.N. Ani and S.G. Herawan | 449 |
| Application of ANN to Predict S.I. Engine Performance and Emission Characteristics Fuelled Bioethanol S.K. Thangavelu, A. Saleh Ahmed and F.N. Ani | 454 |
| Optimization of Heavy Duty Truck Chassis Design by Considering Torsional Stiffness and Mass of the Structure O. Kurdi, R.A. Rahman and P.M. Samin | 459 |
| Performance Study of Electric Compressor in Non-Electric Vehicle A.D. Afiq, A. Haziqah Zulkifli, N. Henry, A.A. Azhar, M.R.M. Perang and H. Mohd Jamil | 464 |
| Energy Analysis and Compressor Performance of Refrigerator System Using Programmable Logic Control (PLC) N. Henry, W.G. Munan, A.A. Azhar, K. Sumeru and A.L. Zulkarnain | 469 |
| Optimizing the Ignition Timing of a Converted CNG Mono-Gas Engine M. Fawzi, M.N. Hashim, F.H. Zulkifli and S.H. Amirkordin | 474 |
| Effect of Air Movement to Spray Development of Rapeseed Oil in Diesel Engine A. Sapit, M. Azahari, M. Fawzi, A. Khalid and B. Manshoor | 479 |
| Design and Development of Light Weight Engine Mounting for UTeM Formula Varsity Race Car M.S. Rahmat, A. Fauzi, M.R. Mansor, A.K.M. Yamin and N. Tamaldin | 484 |
| Modeling and Validation of Quarter Vehicle Traction Model A. Fauzi, S.A. Mazlan and H. Zamzuri | 489 |
| Effects of Storage Duration on Biodiesel Properties Derived from Waste Cooking Oil A. Khalid, N. Azman, H. Zakaria, B. Manshoor, I.B. Zaman, A. Sapit and A.M. Leman | 494 |
| Heterogeneous Microwave Irradiation Biodiesel Processing of Jatropha Oil F.N. Ani and A. Bakheit Elhameed | 500 |
| Performance Comparison between Diesel Fuel and Biodiesel Using a Low Cost Single Cylinder Diesel Engine Dynamometer M.Z. Jamaludin, S.G. Herawan, M.A. Yusmady and A. Fauzi | 505 |
| Screening Efficiency and Entrepreneurship Potential in Automotive Suppliers Using DEA A.H. Moradi Deluyi, S. Sofian, A.B. Abdul Hamid and M. Kazemi | 510 |
| Modelling and Validation of Vehicle Ride Comfort Model S.A. Abu Bakar, P.M. Samin and A.A. Azhar | 515 |

| | | |
|--|-----|--|
| Effects of Biodiesel Derived by Waste Cooking Oil on Fuel Consumption and Performance of Diesel Engine | | |
| A. Khalid, A. Mudin, M. Jaat, N. Mustaffa, B. Manshoor, M. Fawzi, M.A. Razali and M.Z. Ngali | 520 | |
| Optimal Composite Nonlinear Feedback Controller for an Active Front Steering System | | |
| L. Ramli, Y.M. Sam, Z. Mohamed, M.K. Aripin and M.F. Ismail | 526 | |
| Arm Effect on Performance of Vertical Axis Current Turbine Using RANS Simulation | | |
| F. Behrouzi, A.M.A. Malik, M. Nakisa and Y.M. Ahmed | 531 | |
| Modeling and Numerical Simulation for the Newly Designed Four Cavity Blades Vertical Axis Wind Turbine | | |
| K. Hussein Suffer, R. Usubamatov, G.A. Quadir and K.A. Ismail | 536 | |
| Development of Computer-Aided EDM for Machining Micropits on Spherical Surface of Hip Implant | | |
| N. Kartiko, A. Yahya, S.H. Nor Liyana, S. Syahrullail and M.D. Razak | 541 | |
| Hybrid Model for Evaluation of Manufacturing Sustainability Using Axiomatic Design Principles: A Case of Machining Processes | | |
| L.G. Beng and B. Omar | 546 | |
| Implementation of Wheelchair Motion Control Based on Electrooculography Using Simulation and Experimental Performance Testing | | |
| N.M. Mohd Noor, S. Ahmad and S.N. Sidek | 551 | |
| How Hotelling's T² Control Chart Performed with the Autocorrelation Imposed when Controlled Correlation is Used | | |
| A. Umar Farouk, I. Mohamad and H. Idi | 556 | |
| Implementation of Wireless Thermal Camera Remote Control System | | |
| C.L. Wooi, Z. Abdul-Malek and S.V. Mashak | 561 | |
| Propeller Effect on 3D Flow at the Stern Hull of a LNG Carrier Using Finite Volume Method | | |
| M. Nakisa, A.M.A. Malik, Y.M. Ahmed, S. Steen, F. Behrouzi, R. Hassanzadeh and A. F. Sabki | 566 | |

Chapter 5: Electrical Research

| | | |
|--|-----|--|
| Effect of Ambient Temperature Zinc Oxide Surge Arrester Condition Monitoring | | |
| Z. Abdul-Maleka, A.H. Khavari, N.A. Hadi and S. Vahabi-Mashak | 573 | |
| Partial Discharge Detection and Localization in Power Transformer Windings | | |
| Z. Abdul-Malek, M.A.A. Aziz and A.S. Aziz | 578 | |
| Observation of Isolated Breakdown Lightning Flashes in a Tropical Region | | |
| K. Mehranzamir, Z. Abdul-Malek, B. Salimi and N.A. Ahmad | 583 | |
| Chemical Analysis on the Effect of Pulsed Electric Fields in Pineapple Juices Preservation | | |
| A.M. Dastgheib, Z. Buntat and M.A.B. Sidik | 588 | |
| The Effect of Magnitude and Shape of Applied Voltage on the Partial Discharge Behavior in Cylindrical Cavity within a Dielectric Material | | |
| N.A. Hadi, N. Hadi, Z. Abdul-Malek, S. Vahabi-Mashak and A.H. Khavari | 593 | |
| Correlation between Third Harmonic Leakage Current and Thermography Image of Zinc Oxide Surge Arrester for Fault Monitoring Using Artificial Neural Network | | |
| Y. Novizon, A.M. Zulkurnain and A.M. Zulkurnain | 598 | |
| The Impacts of Hybrid Connection Pumped Storage Hydropower and Wind Power in Iranian Grid | | |
| F. Mohammad and A.M. Zulkurnain | 603 | |
| Surge Arrester Leakage Current Analysis by Using Particle Swarm Optimization Technique | | |
| V.M. Saeed, Z. Abdul-Malek, N.A. Hadi, C.L. Wooi and A.H. Khavari | 608 | |
| Model of Pulse Power Generator in Electrical Discharge Machining (EDM) System | | |
| M.A. Erawan, A. Yahya, K. Nor Hisham, A.S. Samosir, M.A.A. Rahim, A. Trias and J.P.N. Kartiko | 613 | |
| Return Strokes Measurements of Electric Field Produced by Lightning Discharges in Malaysia | | |
| K. Mehranzamir, Z. Abdul-Malek, B. Salimi and N.A. Ahmad | 618 | |
| Study on the Vertical Component of Lightning Electric Field during Monsoon Period in Malaysia | | |
| B. Salimi, Z. Abdul-Malek, K. Mehranzamir and N.A. Ahmad | 623 | |

| | |
|--|-----|
| The Effect of Grounding Electrode Parameters on Soil Ionization and Transient Grounding Resistance Using Electromagnetic Field Approach | 628 |
| M. Mokhatri and Z. Abdul-Malek | |
| Supply Chain Performance in Electronics Manufacturing Industry | 633 |
| H. Balfaqih and B. Yunus | |
| Power Generator of Electrical Discharge Machining (EDM) System | 638 |
| M.A. Erawan, A. Yahya, K. Nor Hisham, S. Syahrullail, A.B. Zurkarmawan and A. Trias | |
| Control Strategy for Electrical Discharge Machining (EDM) Pulse Power Generator | 643 |
| M.A. Erawan, K. Nor Hisham, A. Yahya, A. Trias, J.P.N. Kartiko, S.H. Nor Liyana, M. Nazriah and M.D. Razak | |
| Gap Response of Linear and Non-Linear Discharge Model in Electrical Discharge Machining System | 648 |
| A. Trias, A. Yahya and K. Nor Hisham | |

Chapter 6: Air Engineering

| | |
|---|-----|
| Numerical Simulation of Wind Flow Structures and Pollutant Dispersion within Street Canyon under Thermally Unstable Atmospheric Conditions | 655 |
| A.M.Y. Witri, N.A. Che Sidik and S. Mohamed Salim | |
| Position Tracking Controllers for Two Wheeled Inverted Pendulum Robot | 660 |
| A.A. Bature, S. Buyamin, M.N. Ahmad and M. Muhammad | |
| Numerical Simulation of High Reynolds Number Flow Structure in a Lid-Driven Cavity Using MRT-LES | 665 |
| L. Jahanshaloo and N.A. Che Sidik | |
| Validate of Local Exhaust Ventilation (LEV) Performance through Analytical, Experimental and Computational Fluid Dynamic (CFD): A Case Study Model | 670 |
| N.H. Hasan, M.R. bin Said, A.M. Leman and N. Binti Asmuin | |
| Two-Sided Lid-Driven Cavity Flow at Different Speed Ratio by Lattice Boltzmann Method | 675 |
| N.A. Che Sidik and S.A. Razali | |
| Numerical Prediction of Thermal Effect on Flow Field around a High-Rise Building Model | 680 |
| F. Behrouzi, A.M.A. Malik, N.A. Che Sidik, M. Nakisa and A.M.Y. Witri | |
| Measurement of Thermophoretic Velocity in Surrounding Gas of Nitrogen or Carbon Dioxide | 686 |
| M. Azahari, A. Sapit, M. Fawzi, A. Khalid and A. Mohammed | |
| Simulation of the Airflow Characteristics inside Hard Disk Drive | 691 |
| W.C. Tan, T.W. Lee and E.A. Lim | |
| A Verification and Validation Study of CFD Simulation of Wind-Induced Ventilation on Building with Single-Sided Opening | 696 |
| N.F.M. Kasim, S.A. Zaki, M.S. Mat Ali, A.F. Mohammad and A. Abd Razak | |
| Derivation of Effective Ratio of Acoustic Impedance for Impacting Viscoelastic Slug (Standard Linear Solid Model) and Elastic Rod | 701 |
| A.B. Musa | |
| Acoustic Energy Harvesting Using Flexible Panel and PVDF Films: A Preliminary Study | 712 |
| S. Sidik, A. Putra, S.L. Kok, M.Z. Nuawi and A.A.J. Nawal | |
| Survey on the Indirect Methods of Potential Flow Used for the Optimization of Airships Profile | 717 |
| R.A. Hassanzadeh, S. Shariatmadari, A. Chegeni, S.A. Ghazanfari and M. Nakisa | |
| Prediction of Wind Flow around High-Rise Buildings Using RANS Models | 724 |
| F. Behrouzi, N.A.C. Sidik, A.M.A. Malik and M. Nakisa | |