

1. Record Nr.	UNINA9910760284303321
Titolo	Advances in Material Science and Engineering : Selected Articles from ICMMPPE 2022 // edited by Mokhtar Awang, Hussain H. Al-Kayiem, Ton C. Bor, Seyed Sattar Emamian
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2024
ISBN	981-9953-18-9
Edizione	[1st ed. 2024.]
Descrizione fisica	1 online resource (398 pages)
Collana	Proceedings in Technology Transfer, , 2948-233X
Disciplina	605
Soggetti	Industrial engineering Production engineering Materials science Industrial and Production Engineering Materials Science
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Intro -- Preface -- Contents -- Analysis on the Efficiency of Logistics Companies in Malaysia Using Data Envelopment Analysis Model -- 1 Introduction -- 2 Data and Methodology -- 3 Result and Discussion -- 4 Conclusion -- References -- Evaluation of the Preference of Online Food Delivery Providers in Supply Chain Management with AHP Model -- 1 Introduction -- 2 Data and Methodology -- 3 Result and Discussion -- 4 Conclusion -- References -- Performance Analysis of Courier Service Providers in Transportation Using TOPSIS Model -- 1 Introduction -- 2 Data and Methodology -- 3 Result and Discussion -- 4 Conclusion -- References -- A Fast Initial Response Double EWMA Chart for Process Mean -- 1 Introduction -- 2 The Properties of the FDEWMA Chart -- 3 Computation and Comparisons of Run Lengths -- 4 Conclusion -- References -- Microstructural and Compositional Analyses of Resin Matrix Composites -- 1 Introduction -- 2 Experimental Procedure -- 3 Results and Discussion -- 4 Conclusion -- References -- Stability Characteristics of Water/Diesel and Biodiesel Emulsions Under the Influence of Water Dosages -- 1 Introduction -- 2 Materials and Methods -- 2.1 Principle

of Emulsions Preparation -- 2.2 Optical Microscope System -- 2.3 Digital Image Processing -- 3 Results and Discussion -- 4 Conclusions -- References -- Prediction of a Diffusion Flame Characteristics with the Influence of Repulsive Electromagnetic Fields -- 1 Introduction -- 2 Experimental Implementation -- 2.1 Principle of Electromagnetic Induction System -- 2.2 Methodology and Experimental setup -- 3 Results and Discussion -- 4 Conclusions -- References -- Design and Fabrication of a Livestock's Fodder Crusher -- 1 Introduction -- 2 Design Methodology -- 2.1 Conceptual Design -- 2.2 Design Calculations and Simulation -- 3 Conclusion -- References.

Design of a Solar PV Water Pumping System for Small-Scale Farming Along the Calueque-Oshakati Canal in Namibia -- 1 Introduction -- 2 Design Methodology -- 2.1 Weather Data of the Area Using PVGIS -- 3 Results and Discussions -- 3.1 Determining the Module Full Load Rated Energy (kWh) -- 3.2 Designed Solar PV System Output Quantities -- 3.3 Solar Panel Optimum Tilt Angle -- 4 Conclusion -- References -- Effect of Cobalt Oxide Nanoparticles Additives to Water Hyacinth-Diesel Mixture Biofuel on the Performance and Emissions of Single CI Engine -- 1 Introduction -- 2 Experimental Setup -- 2.1 Preparation of Test Samples Blends -- 2.2 Engine Specifications and Apparatus -- 2.3 Uncertainty Analysis -- 3 Results and Discussion -- 4 Conclusions -- References -- Design and Fabrication of a Solar-Powered Lawn Mower -- 1 Introduction -- 2 Design Concepts -- 2.1 Principle of Operation and 3D Model -- 3 Prototype Testing -- 4 Conclusion -- References -- Prediction of Surge/Swab Pressure in the Oil & Gas Industry: Effect of Process Parameters and Significance of Modeling -- 1 Introduction -- 2 Literature Review -- 2.1 Parameters Affecting Surge/Swab Pressure -- 2.2 Drilling Design Parameters -- 2.3 Existing Theoretical and Experimental Study on Surge/Swab Pressure -- 2.4 Laboratory Scale Experimental Studies -- 3 Conclusion -- References -- Study the Behaviour of Chest Freezer Working with R134a and R600a Under Pull Down and Loading States -- 1 Introduction -- 2 Experimental Implementation -- 2.1 Test Apparatus -- 2.2 Measurement System -- 3 The Results and Discussion -- 4 Conclusions -- References -- Effects of Arc Welding Current on the Mechanical Properties of Aluminium Plate Weldments -- 1 Introduction -- 2 Experimental Procedure -- 3 Results and Discussion -- 4 Conclusion -- References -- Design of a Passive Dust Suppression System for the Coal Staithes. 1 Introduction -- 2 Materials and Methods -- 3 Design Parameters -- 3.1 Pipe Plan and Schematic Diagram -- 3.2 Spray Nozzle Selection -- 3.3 Pipe Sizing and Selection -- 3.4 Pump Sizing and Selection -- 3.5 Semi-Automation -- 4 Results and Discussion -- 5 Conclusion -- References -- Design and Fabrication of a Hand Operated Sweeping Machine -- 1 Introduction -- 2 Design Process and Selection -- 2.1 Design Concepts -- 3 Design Modelling -- 4 Design Calculations and Analysis -- 5 Conclusion -- References -- Study on Silica Content of Peat Soil and Concrete Reinforced Aluminium AA7075 Chips by Cold Compaction Method: Hardness and Physical Properties -- 1 Introduction -- 2 Experimental Material and Procedure -- 2.1 Materials -- 2.2 Preparation of Samples -- 2.3 Analysis of Samples -- 3 Results and Discussion -- 3.1 Hardness -- 3.2 Physical Properties -- 4 Conclusions -- References -- Numerical Modeling of an Open-Flow PV/T Cooling Collector -- 1 Introduction -- 2 CFD Simulation of Open-flow Cooling Collector -- 3 Results and Discussion -- 4 Conclusions -- References -- Impact Strength of Bio-Fibrous Concrete -- 1 Introduction -- 2 Experimental Materials and Method -- 2.1 Aggregates and Cement -- 2.2 Microorganisms -- 2.3 Kenaf Fibre --

2.4 Mix Proportion and Test Specimens -- 2.5 Impact Test -- 3 Results -- 3.1 Effect of W/C on Impact Strength -- 3.2 Effect of Kenaf Fibre on Impact Strength -- 4 Conclusions -- References -- Dynamic Analysis of Floating Offshore Wind Turbine Subjected to Combined Deepwater Environmental Loads -- 1 Introduction -- 2 Theoretical Background -- 2.1 Wave Spectrum -- 3 Methodology -- 3.1 Model Properties -- 4 Results and Discussions -- 4.1 SET 1: Extreme Condition Return Period (RP) -- 4.2 Data Collection -- 4.3 Data Analysis -- 5 Conclusions -- References -- Continuum Modelling of Carbon Nanotube Composites: A Review. 1 Introduction -- 2 The Continuum Modelling Approach -- 2.1 The Representative Volume Element -- 3 Modelling the Two-Phase CNT Composite -- 3.1 Predicting the Effective Properties -- 3.2 The Effect of CNT Characteristics -- 4 The Continuum Approach in Multiscale Modelling with interphase -- 4.1 The A-A-C model -- 4.2 The A-C-C Model -- 4.3 The C-C-C Model -- 5 The Mesoscale Modelling of CNT Composites -- 5.1 The Effect of CNT Randomness -- 5.2 The Effect of CNT Agglomerations -- 5.3 The Stochastic Modelling of CNT Composites -- 5.4 The Multiscale Modelling with Fuzzy CNT-Matrix -- 6 Concluding Remarks and Future Perspectives -- References -- Investigation of Interfacial Behavior of SN100C and SN97C Solders with HASL Surface Finish Using Microwave Energy -- 1 Introduction -- 2 Materials and Method -- 3 Results and Discussion -- 3.1 Intermetallic Compound Formation -- 3.2 Solderability Analysis -- 4 Conclusion -- References -- Potential Utilization of Acetylene as an Alternative Fuel in Petrol Engine -- 1 Introduction -- 1.1 Sequence of Production -- 2 Materials and Methods -- 2.1 Calcium Carbonate -- 2.2 Calcium Oxide -- 2.3 Acetylene Production -- 2.4 Internal Combustion (IC) Engine -- 3 Results and Discussions -- 3.1 Production Reaction -- 3.2 Characterization of the Acetylene Gas -- 4 Conclusion -- References -- Development of a Filter-Based Fruit Preservation System via Refrigerating System -- 1 Introduction -- 1.1 Ethylene and Ethylene Control -- 1.2 Ethylene Measurement -- 1.3 Ethylene Removal - Ventilation with Air -- 2 Methodology -- 2.1 Design Specifications -- 2.2 Material Selection -- 2.3 Cooling Load Calculations -- 3 Results and Discussions -- 3.1 Transmission Load -- 3.2 Air Infiltration Load -- 3.3 Product Load -- 3.4 Heat of Respiration -- 3.5 Safety Factor -- 3.6 Performance Evaluation of the Developed Fresh Fruit Preservation System. 3.7 Physiological Weight Loss of Fruits -- 3.8 Percentage Weight Loss -- 4 Conclusion -- References -- Agro-Based Nano Coolant for Car Engines: Synthesis and Evaluation -- 1 Introduction -- 2 Materials and Methods -- 2.1 Materials -- 2.2 Equipment -- 2.3 Experimental Procedure: Nanoparticle Preparation -- 2.4 Characterization of RHA and SiO₂ Nanoparticles -- 2.5 Cooling Fluid Preparation -- 2.6 Construction of an Experimental Rig -- 3 Results and Discussions -- 3.1 Spectroscopic Testing -- 3.2 Microstructural Testing -- 3.3 Pour Point -- 3.4 Flash Point -- 3.5 Viscosity Test -- References -- Developing a Finite Element Model for Analysing Dissimilar Friction Stir Welding (FSW) of Al/Mg Alloys -- 1 Introduction -- 2 Methodology -- 2.1 Friction Model -- 2.2 Numerical Model Description -- 3 Results and Discussion -- References -- Vortex Induced Vibration of Free Span Pipeline - CFD Simulation -- 1 Introduction -- 2 Theoretical Background -- 2.1 Overview of Pipeline Diameter -- 3 Project Methodology -- 3.1 CFD Simulation -- 4 Results and Discussions -- 4.1 Effects of Pipe Diameter -- 4.2 Effects of Span Length on VIV -- 5 Conclusions -- References -- Material Flow and Temperatures Prediction in Friction Stir Extrusion Process Using Smoothed Particle

Hydrodynamics -- 1 Introduction -- 2 Methodology -- 2.1 Geometry -- 2.2 Material and Material Model -- 2.3 Mesh, Contact, and Boundary Conditions -- 3 Results and Discussion -- 4 Conclusions -- References -- Comparative Study of an Evacuated Tube with a Copper Heat Tube and a New Receiver for Air Heating by a Parabolic Trough Collector -- 1 Introduction -- 2 Experimental Setup -- 2.1 Modification Made in the Evacuated Tube Receiver (case 1) -- 2.2 Straight Hierarchical Square Receiver Design (Case 2) -- 3 Thermal Performance Analysis of PTAC -- 4 Experimental Results and Discussion -- 5 Conclusions. References.

Sommario/riassunto

This book highlights the recent research works on mechanical, manufacturing and plant engineering presented during the 8th International Conference on Mechanical, Manufacturing and Plant Engineering (ICMMPE 2022) held on November 24, 2022 in Kuala Lumpur, Malaysia. It highlights the latest advances in the emerging areas, brings together researchers and professionals in the field and provides a valuable platform for exchanging ideas and fostering collaboration. Addressing real-world problems concerning joining technologies that are at the heart of various manufacturing sectors, the respective papers present the outcomes of the latest experimental and numerical work on problems in soldering, arc welding and solid-state joining technologies.
