

1. Record Nr.	UNINA9910733713703321
Titolo	Innovations in mechanical engineering II / / edited by Jose Machado
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2022] ©2022
ISBN	3-031-09382-8
Descrizione fisica	1 online resource (364 pages)
Collana	Lecture Notes in Mechanical Engineering
Disciplina	621
Soggetti	Mechanical engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	<p>Intro -- Preface -- Contents -- Development of Guidelines for the Design of Functionally Integrated Molds for a Novel Vacuum Assisted Resin Infusion Process -- 1 Introduction and State of the Art -- 2 Experimental Determination of the Optimum Flow Channel Geometry -- 2.1 Experimental Setup and Parameters -- 2.2 Execution and Evaluation of Experiments -- 2.3 Experimental Validation of Flow Channel Geometry on Complex Application Examples -- 3 Summary and Outlook -- References -- Challenges and Opportunities of Industry 4.0 at Mold Production Engineering and Management -- 1 Introduction -- 2 Mold Production Engineering and Management -- 3 Technological Platforms Applied to the Mold Industry -- 3.1 Functionality and Components Required -- 3.2 Network for Mold Industries -- 3.3 Conceptual Model -- 4 Conclusion -- References -- Influence of Mechanical Processing on the Durability of Parts in Additive Manufacturing Conditions -- 1 Introduction -- 2 Literature Review -- 3 Research Methodology -- 3.1 Basic Classification of Additive Manufacturing Processes -- 3.2 Three-Dimensional Study of Molecular Electrostatics of Materials -- 4 Results -- 4.1 Microstructural Analysis -- 4.2 Mechanism of Shear of Structurally Inhomogeneous Materials Under Additive Manufacturing Conditions -- 4.3 Microhardness of the Surface Layer of High-Speed Steel Grade Materials P6M5 -- 4.4 Microhardness Research for Various Types of Parts -- 5 Conclusions -- References -- ISO 2631 Vibration Analysis in Portuguese Alfa Pendular Trains -- 1 Introduction -- 1.1 WBV Evaluation - ISO 2631 -- 2</p>

Materials and Methods -- 2.1 Equipment -- 3 Results -- 3.1 Measurement Results for Car 1 -- 3.2 Measurement Results for Car 4 -- 3.3 Measurement Results for Car 6 -- 4 Discussion -- 5 Conclusion -- References -- Noise Attenuation Analysis of a Multilayer Wall -- 1 Introduction.

2 General Considerations -- 3 Determination of Noise Attenuation by Measurement -- 4 Determination of Noise Attenuation by Calculation -- 5 Conclusions -- References -- Improving Procedures for Production and Maintenance Control Towards Industry 4.0 Implementation -- 1 Introduction -- 2 Methodology -- 3 Discussion and Results -- 4 Conclusion -- References -- Industry 4.0 Technologies for Maintenance Management - An Overview -- 1 Introduction -- 2 Industry 4.0 Technologies -- 2.1 Autonomous/Collaborative Robots (A/CR) -- 2.2 Big Data (BD) -- 2.3 Cloud Computing (CC) -- 2.4 Internet of Things (IoT) -- 2.5 Horizontal and Vertical System Integration (HVI) -- 2.6 Simulation and Digital Twin (S and DT) -- 2.7 Virtual and Augmented Reality (VAR) -- 2.8 Additive Manufacturing (AM) -- 2.9 Cyber-Security (CS) -- 3 I4.0 Technologies Applications in Maintenance Management -- 4 Conclusions -- References -- Design Concept of a Non-invasive Tagging Device for Blue Sharks -- 1 Introduction -- 2 Design Requirements and Equipment Selection -- 2.1 Product's Requirements Identification -- 2.2 Equipment Selection -- 2.3 Materials Selection -- 3 Conceptual Design -- 3.1 Approach for Concept Generation -- 3.2 Concept Creation -- 4 Conclusions -- References -- Aspects Regarding Subtractive and Additive CAD-CAM Processes Applied in Prosthetic Dentistry -- 1 Introduction -- 2 Materials and Methods -- 3 CAD-CAM Approaches in Prosthetic Dentistry -- 4 Conclusions -- References -- Design and Performance Assessment of a Double-Screen Trommel for MSW Separation -- 1 Introduction -- 2 Separation Process and System Modelling -- 2.1 Facility Description -- 2.2 Trommel Operating Principals -- 2.3 Mathematical Modelling -- 3 Proposed Design for the Double-Screened Trommel -- 4 Trommel Performance Assessment -- 5 Final Considerations -- References.

A Comparative Study of Weld Bead Geometry of AISI 1023 with Varying Plate Width Using SAW and ASAW -- 1 Introduction -- 2 Materials and Methods -- 2.1 Taguchi Method -- 2.2 Multiple Regression Analysis -- 3 Results and Discussion -- 3.1 Effect of Input Variables on Penetration -- 3.2 Effect of Input Variables on Weld Bead Width -- 3.3 Effect of Input Variables on Reinforcement Height -- 3.4 Effect of Input Variables on Percentage Dilution -- 3.5 Effect of Input Variables on HAZ -- 4 Comparative Study of Bead Geometry on Varying Plate Width -- 4.1 Effect of Plate Width on Penetration -- 4.2 Influence of Width of Plate on Bead Width -- 4.3 Effect of Plate Width on Reinforcement Height -- 4.4 Effect of Plate Width on % Dilution -- 4.5 Effect of Plate Width on HAZ -- 5 Conclusions -- References -- Ecofriendly Technologies of Fish Oils and Collagen Extraction from Fishery Waste - A Review -- 1 Introduction -- 1.1 Fishery in Portugal -- 1.2 Fish Oil and Collagen Extracted from Fish Waste -- 2 Green Extraction Methods -- 2.1 Ultrasound Extraction -- 2.2 Supercritical Fluid - Assisted Extraction -- 2.3 Microwave-Assisted Extraction -- 2.4 Enzymatic - Assisted Extraction -- 3 Ecotoxicology -- 4 Conclusions -- References -- Study Concerning the Correspondence Between Optical Materials and Optical Coatings Using Matlab -- 1 Introduction -- 1.1 How to Choose a Coating -- 1.2 Coatings Characteristics -- 2 Optical Coating Technology -- 3 Optical Coating Materials -- 4 Optical Materials and Coatings Selection Guide -- 5 Conclusions -- References -- Bat Algorithm for Discrete Optimization

Problems: An Analysis -- 1 Introduction -- 1.1 A Subsection Sample -- 2 Literature Review -- 2.1 Heuristics and Metaheuristics -- 2.2 Local Search (LS) -- 2.3 Simulated Annealing (SA) -- 2.4 Discrete Bat Algorithm (DBA) -- 2.5 Palmer and Campbell, Dudek and Smith (CDS). 2.6 Parameters -- 3 Case Study -- 3.1 Problem -- 3.2 Methodology -- 3.3 Parameterization -- 3.4 Detailed Instance Analysis -- 3.5 30 Instances Results -- 4 Conclusions -- References -- Geometrical Metrology in Food Product Measurements -- 1 Introduction -- 2 Measurement Technique -- 3 Application of Coordinate Measurement Technique -- 4 Application of Machine Vision -- 5 Conclusions -- References -- Analysis and Validation of a CFD Simulation of the Wind Through a Horizontal Axis Wind Turbine as an Actuator Disc with a Porous Jump Condition -- 1 Introduction -- 2 Numerical Model -- 2.1 Turbulence Modelling -- 2.2 Neutral Atmospheric Boundary Layer Modelling -- 2.3 Rotor Modelling -- 3 Set Up Data -- 3.1 Wind Turbine V42-600 kW -- 3.2 Computational Domain and Boundary Conditions -- 3.3 Solver and Discretization -- 4 Results and Discussion -- 4.1 Mesh -- 4.2 Velocity Variation -- 4.3 Pressure Field -- 4.4 Turbulent Kinetic Energy -- 4.5 Validation Procedure -- 5 Conclusions -- References -- Eutectic Modification of Al-Si Alloys by Using AISr10 -- 1 Introduction -- 2 Experiment and Results -- 2.1 Experimental Material -- 2.2 Alloy Modification -- 2.3 Microscopic Analysis -- 2.4 Scanning Electron Microscopy and EDS Analysis -- 3 Conclusion -- References -- Flow Visualizations in a PDMS Cerebral Aneurysm Biomodel -- 1 Introduction -- 2 Materials and Methods -- 2.1 Geometry and Manufacturing Process -- 2.2 In VitroPDMS Aneurysm Biomodel -- 2.3 Flow Visualizations Setup -- 3 Results and Discussion -- 4 Conclusion -- References -- What Times Should Be Used for fNIRS and EEG Protocol? -- 1 Introduction -- 2 Methodology -- 3 Results -- 4 Results Analysis -- 5 Conclusion -- References -- Inclusive Platform: GUS for Social Inclusion and Competencies Development in Cerebral Palsy -- 1 Introduction -- 1.1 Cerebral Palsy -- 1.2 Rehabilitation -- 1.3 Games.

2 GUS Platform Architecture -- 2.1 Design Objectives -- 2.2 Logical Platform Architecture -- 3 Platform Implementation -- 3.1 Interface Unit -- 3.2 Cloud Unit -- 3.3 Tangible Unit -- 3.4 Data Information -- 4 Conclusion and Future Work -- References -- Kinematic Analysis from Solar Panel Tracking System -- 1 Introduction -- 1.1 Solar Panels -- 2 Kinematic Analysis -- 2.1 Analysis of a Joint -- 2.2 Kinematic Analysis from Solar Panel Tracking System of Movement by Operating Both Motors -- 3 Conclusion -- References -- Continuous Improvement of Logistics Processes in a Production Line of Electric Buses Chassis -- 1 Introduction -- 2 Literature Review -- 3 Case Study Development -- 3.1 Current Status Mapping -- 3.2 Solutions Implemented -- 4 Conclusions -- References -- 3D Print Technology Used in High Technical Education -- 1 Introduction -- 2 Preparation of a Project -- 2.1 Partial Steps of Implementation -- 3 Design and Realization of 3D Printer Construction -- 4 Realization of a Project -- 4.1 Creating a 3D Model -- 4.2 Printing Process on a 3D Printer -- 5 Results and Discussion -- 6 Conclusions -- References -- Is Critical Thinking a Skill or a Way to Develop Skills? An Overview in Engineering Education -- 1 Introduction -- 2 Methodology -- 3 Findings and Discussion -- 3.1 Search 1 -- 3.2 Search 2 -- 3.3 Search 3 -- 4 Final Remarks -- References -- Solving Manufacturing Orders Scheduling Problem Using Annealing Simulation -- 1 Introduction -- 2 Research Methodology -- 2.1 Case Study -- 3 Optimization Methods -- 3.1 Greedy Algorithm -- 3.2 Neighborhood's Alteration and Heuristics -- 3.3 Tabu Search Algorithm -- 3.4 Simulated Annealing -- 4

Algorithms' Calculation Results -- 5 Comparison of Methods -- 6
Conclusion -- References -- Dynamic Sectorization -
Conceptualization and Application -- 1 Introduction -- 2 Literature
Review.
3 Problem Definition and Criteria.
