1. Record Nr. UNINA9910366610303321

Titolo	Current Methods of Construction Design : Proceedings of the ICMD 2018 / / edited by Štefan Medvecký, Slavomír Hrek, Róbert Kohár, František Brumerík, Viera Konstantová
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2020
ISBN	3-030-33146-6
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (589 pages)
Collana	Lecture Notes in Mechanical Engineering, , 2195-4356
Disciplina	621.815
Soggetti	Machinery Control engineering Robotics Mechatronics Vibration Dynamical systems Dynamics Machinery and Machine Elements Control, Robotics, Mechatronics Vibration, Dynamical Systems, Control
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Part I: Machine Design and Optimization -- Design Optimalization of the Octavia SK37x Driver's Seat - DFMA Principles Application -- Description of the Methodology of the Automated Optimization Process -- Innovation of the Cutting Tools of the Modular Production Line for the Production of Sophisticated Adhesive Wound Covers -- Mobile Positioning Device Powered by an Electromotor -- Development of a New Measuring System for Verifying the Float Level Gauge -- The Experimental Methods and Devices for the Identification of the Properties of Pneumatic Dual Mass Flywheel -- Innovation of Device for Production of Core Yarn with Nanofibers -- Bearing Test Rig - Setting Up and Lesson Learnt -- Reverse Engineering of the Gearbox Case -- Optimization of Driving Comfort of Golf Cart -- Creation of

Computational 2D Model of Harmonic Gearbox -- Trend of Increasing Dynamicity in the Design of Flood Protection Systems -- The Gearing Temperature Shock Oscillation -- The device for Measuring the Stiffness of the Bearings -- Comments on ISO 6336 – 2 -- Contact Patterns During a Mesh of a Helical Gear Pair -- Explanation of New Specifications Used in Geometric Dimensioning Model -- Creation of 3D Calculation Model of Slewing Bearing -- Design Optimization of Micro Hydro Power Plant -- The Loading of the Crew Protection Structure of the ROPS According to Different World Standards -- Design and Manufacturing of Multipurpose Steering Wheel -- Sealing Technology for Vacuum Applications Working by Increased Temperatures -- Contactless Measuring Device for Flexible Shaft Coupling Twist Angle -- Profile Design of Groove Cam with Roller Follower -- Geometric Specification of Complex Spatially - Oriented and Compliant Components II -- Part II: Engineering Analyses -- Unconventional Carbon Springs -- Impact of the Spin Cycle on the Acoustic Power Level of a Washing Machine -- Sensor for In-time Identification of Deep Core Drilling Parameters -- The Energy Assist for the Electric Car Edison -- Contact Analysis of Selected the Toothed Contact of the Two-stage Front Gear-box -- Evaluation of the Energy Balance on Test Bench with Open Power Flow and Closed Power Flow for Testing of Transmission -- Dynamic Analysis of Vibrating Sorter and Description of Optical Methods for Experimental Verification -- Modelling of Cornea Applanation when Measuring Eye Pressure -- Screw Connections with Application of Modern Insurance Sealants and Adhesives Analysis -- Measuring Mass Moment of Inertia of a Rotor -- The Influence Long-term Operating Load to the Riveted Join -- Monitoring of the Measurement Process Capability by Using Capability Indices -- The Digital Twin of a Measuring Process within the Industry 4.0 Concept -- FE Analysis of Load Distribution in Clinched Joints Array -- Transmission Mechanical Vibrations in the Car Seat in the Laboratory Conditions -- Safety Models of Systems in the Engine Room with Renewable Elements -- Low Speed Bearings Diagnostic Equipment -- Calculating Strength of Truck Trailer Frames by Using Software MSC Adams and the Finite Element Method -- Solution of Damped Oscillations by Coulomb Friction at the Karakuri Mechanism Using MAPLE Software -- The Procedure for Reduction of the Acoustic Performance Level of the Spinning Cycle in the Washing Machine -- Load Analysis of Ship Generating Sets during the Maneuvers of the Vessel -- Measurement of Torque and Axial Force on Cardan Shaft -- AHP - Based Evaluation of Vertical Gardens Design -- Examining the Modal Characteristics of the Pre-stressed Gearbox -- Effect of Temperature on Bolt Working Load of Pressure Vessels -- Part III: Tribology and Nanotechnology -- Scuffing Resistance of 16MnCr5 HCR TiAlCN Coated Gears -- Analysis of Tribological Properties of Composite Materials for the Production of Bearing Cage -- Investigation of the Tribological Properties of the Nitride Layer on Heat Treated Steel 100Cr6 -- Experimental Verification of Tribological Properties of Thin Coating for Artificial Human Joints -- Part IV: Additive Technologies -- Optimizing Setting of Open Source Fused Deposition Modeling 3D Printer -- The Comparison of Selected Strength Indicators of Manufactured Prototypes Produced by Metal Additive Manufacturing (3D printing) System -- Modular 3D Printer Concept -- Study of EDMS for Additive Technology in a Smart City -- Development of Process Parameters for SLM Processing of AlSi7Mg Aluminum Alloy -- Part V: Hydraulics and Fluid Mechanisms -- Control System for the Testing Device of Flood Barriers -- Numerical Simulation of Flow through Porous Media -- Part VI: Modern Material and

Technology -- Principles of Winding Elbows from Pre-impregnated Carbon Fibres -- Principles of Increasing the Winding Effectivity of Composite Prepregs to Construction Application -- Boiling Heat Flux of Multilayer Mesh Microstructures -- Properties of Steel Welded With CO2 Laser -- Determination of Mechanical Properties of FRP by Bending Test -- Design of Belt Wheels Using the 3D Printing Method -- Part VII: Biomechanics, Biomimicry and Innovation -- Performance of a Manually Fed Pelleting Machine with a Horizontal Rotating Matrix -- Innovation of Device for Nanofibers Production using TRIZ.

Sommario/riassunto

This conference proceeding presents contributions to the 59th International Conference of Machine Design (ICMD 2018), organized by the University of Žilina, Faculty of Mechanical Engineering, Department of Design and Mechanical Elements. Discussing innovative solutions applied in engineering, the latest research and developments, and guidance on improving the quality of university teaching, it covers a range of topics, including: machine design and optimization engineering analysis tribology and nanotechnology additive technologies hydraulics and fluid mechanisms modern materials and technology biomechanics biomimicry; and innovation.