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Note generali	"[...] which was planned to be held in Guangzhou, China, during August 20-22, 2021, was changed to be held online through Zoom software." -- Preface
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	High-speed short-stroke displacement calibration method based on pull-wire sensor -- Fine Guidance Sensor Attitude Determination System of the High Accuracy Satellite Mission -- Research on OFDR Pressure Sensor Based on PDMS -- Space-domain fiber cavity ring- down magnetic field sensor using D-shaped fiber coated with magnetic fluid -- Research on Unsaturated Magnetization MFL Detection of Gouge in Oil and Gas Pipeline -- The Infusion Monitor System based

on Single Chip Micryo Density Prediction Model and Characterization Method of Density variation Rate in Finished Tobacco Box Based on Microwave Signal Value -- Research on Fault Detection Technology of Primary and Secondary Circuit of Switchgear -- Research on FPGA Hardware Acceleration for Real-time Detection of Mobile Phone Lens Defects -- An improved phase unwrapping method based on geometric constraints -- Research on the Influence of Electromagnetic Interference Test Signal on Networked Vehicle Detection Equipment -- Geometric Error Modeling of A Special NC Process Device for Precision Two-dimensional Optical Drum -- Analysis and Control of Measurement Accuracy of Super High-rise Building Engineering -- Multimedia Monitoring System for Gas Pressure Regulating Station -- Two-position Initial Alignment Method under Large Misalignment Angle Based on Adaptive Cubature Kalman Filter -- Rapid detection and measurement method of pixel-level crack size based on convolutional neural network -- Uncertainty Analysis of Efficiency Test of Drive Motor System for Electric Vehicle -- Fluorescence Characteristics of DAST in Methanol Solutions -- Research on Deflection Quality Assessment of Assembly Car Body Based on Deflection Measurement and Improved Principal Component Analysis Method -- Random-optimal Differential Evolution Neural Network Model for Inverse Calculation of Demolition Robot -- Analysis and Performance Evaluation on Mechanical Property of Nuclear Pumps Liquid Annular Seals Research on Eddy Current Inspection Test for Defects of Aluminum Alloy Type Components in High-speed train Car Body A simple fire extinguishing demonstration system based on Single Chip Micryo -- LC-MS/MS determination of 25-hydroxyvitamin D in human serum based on covalent organic frameworks magnetic solid phase extraction materials -- Research on car locking device to prevent the car from moving accidentally -- Design of optical system for laser dazzle simulation human eye test target Effects of Cooperative Target on Laser Range Finder's Ranging Performance -- Analysis and study of target ball error accuracy for the laser tracker -- Drowning person target intelligent recognition method based on fusion of visible light and infrared thermal imaging Integrated laser in situ auxiliary device -- A In-Motion Alignment Method for Laser Doppler Velocimeter-Aided Strapdown Inertial Navigation System -- Imaging and focusing through scattering medium based on reflection matrix optical coherence tomography Application of terahertz spectroscopy in the detection of carbohydrate isomers -- Detection of Gas Raman Spectra based on double cladding fiber laser -- All-fiber-based miniaturized transportable ultra-stable laser at 1550 nm -- Research on dynamic condition test of power battery simulation based on principal component analysis -- Research on the Application of UAV Remote Sensing Technology in Surveying and Mapping Engineering Survey -- Analysis of influence factors on image quality of lensless fourier transform hologram reconstruction -- Error Characteristic Analysis of Tri-axis Rotating Optical Gyro Inertial Navigation System Based on Inertial Frame Calculation of the photon speed and photon energy discussions -- Research on Simulation of Space-based Optical Space Debris Images Study on Image Processing of Bridge Cable Surface Defect Detection System -- Study on the Structural Performance Degradation of Rigid Airfield Pavements Using HWD -- Research on Integrated Navigation and Positioning Technology of Inertial Navigation System and Odometer Based on Factor Graph -- Research on Influencing Factors and Evaluation Accuracy of Diffuse Reflector Deception Airspace -- A novel Type-sensitive PageRank algorithm for Importance ranking of heterogeneous network nodes Trapping and storing photons via a dynamically-formed nanocavity -- Breaking the

delay-bandwidth limit in a dynamically-tuned nanocavity -- Investigation about large capacity optical transmission system based on wavelength division multiplexing and multiplexing division multiplexing -- Manipulating photons with a dynamic nanocavity -- Pig pose recognition method based on Openpose -- Research on Data Management Technology of Construction Project Planning Completion Survey -- Research on active Suspension System of Heavy Commercial Vehicle controlled by PID controller based on Genetic Algorithm -- Health condition assessment of hydraulic system based on cloud model and Dempster-Shafer evidence theory -- Design of CAN Communication Network for Tandem hybrid Tractor -- Research on testability fault diagnosis based on deep learning.

Sommario/riassunto

This book highlights the new technologies and applications presented at the 2021 International Conference on Precision Instruments and Optical Engineering held in Chengdu, China from 25 to 27 August 2021. The conference aimed to provide a platform for researchers and professionals to share research findings, discuss cutting-edge technologies, promote collaborations and fuel the industrial transition of new technologies. The invited and contributed papers covered recent developments in optoelectronic devices, nanophotonic research, optoelectronic materials, precision instruments, intelligent instruments, laser technology, optical spectroscopy and other optical engineering topics. The book is intended for researchers, engineers and advanced students interested in precision instruments and optical engineering and their applications in diverse fields.
