1. Record Nr. UNINA9910483871303321

Titolo	International Youth Conference on Electronics, Telecommunications and Information Technologies : Proceedings of the YETI 2020, St. Petersburg, Russia / / edited by Elena Velichko, Maksim Vinnichenko, Victoria Kapralova, Yevgeni Koucheryavy
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2021
ISBN	3-030-58868-8
Edizione	[1st ed. 2021.]
Descrizione fisica	1 online resource (XVII, 775 p. 387 illus., 241 illus. in color.)
Collana	Springer Proceedings in Physics, , 1867-4941 ; ; 255
Disciplina	621.381
Soggetti	Lasers Nanoscience Signal processing Optical materials Laser Nanophysics Signal, Speech and Image Processing Optical Materials
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Part 1: Electronics and Nanotechnologies -- Integrated Ultra-Low Power RF-DC Converter for Wireless Passive Microdevices -- Multistage Depressed Collector with Azimuthal Magnetic Field for the DEMO Prototype Gyrotron -- Improvement of the Microwave Strip Devices Prototyping Technology -- Peculiar Properties of Nuclear Magnetic Resonance in Dispersed Magnetically Ordered Nanostructures and Requirements for Radiospectroscopic Equipment for its Observation -- The Statistical Description of de Haas – van Alphen Oscillations in Silicon Nanosandwich -- Infralow Frequency Dielectric Spectroscopy of PMN Relaxor -- Plasma Thrusters for in Space Propulsion; New Trends and Physical Limitations -- Optical Absorption and Photoluminescence of Cylindrical Quantum Dot with modified Pöschl-Teller and Morse Confining Potentials -- The Band Gap Controllability of Boron Nitride

Nanotube with Carbon Atoms -- Investigation of Selectivity and Reproducibility Characteristics of Gas Capacitive MIS Sensors -- Printed Miniaturized Platinum Heater on Ultra-Thin Ceramic Membrane for MOX Gas Sensors -- SOI Based Micro-Bead Catalytic Gas Sensor -- Precision Spectrometric Search Dosimeter-Radiometer Based on a Matrix SiPM, Designed to Restore the Geometry of Ionizing Radiation Sources -- Flexible Piezoelectric Nanogenerator: PVDF-CsPbBr3 Nanocomposite -- Formation of Functional Conductive Carbon Coating on Si by C60 Ion Beam -- Degradation of GaN Conductivity under Irradiation with Swift Ions -- Impact of Chemical Effects on Topography and Thickness of Modified GaN Surface Layers Bombarded by F and Ne Ions -- A Symmetrical Design of a Microstrip Tunable Bandpass Filter -- Implementation of Moshinsky Atom Model for Electron Gas in Quantum Dots -- Characterization of Nitride Silicon Layers SiN:x Enriched in Silicon at Different Stoichiometries by Photocurrent Spectroscopy Method -- Temperature Dependence of Acousto-Optic Polarization Mode Conversion Peak Frequency and Efficiency -- Linear and Nonlinear Optical Properties of Strongly Oblate Ellipsoidal Quantum Dot in the presence of Electric Field -- Research on Transition between Substrate Integrated Waveguide and Microstrip Line -- Part 2: Photonics and Optical Information -- Visible Light Communication System with Changing Lighting Color -- Chromatic Dispersion in Subcarrier Wave Quantum Cryptography -- Development of a Method for Assessing of the Oxygen Supply of Tissues Based on a Multi-Channel Spectrum Analyzer -- Possibilities of Using Optical Solitons in High-Speed Systems -- Fluorescence Quenching of Tetraphenylporphyrin-Fullerene Molecular Complexes -- Gold Nanoparticle Array Formation by Low-Temperature Annealing -- Computer Modeling of Fiber Optic Current Sensor -- Photometry Setup for Dynamic Dye Concentration Measurement -- Estimation of Nanoparticles Sizes by Laser Correlation Spectroscopy Methods -- Experimental Study of Frequency Modulation in Single-Frequency Lasers -- Temperature Dependence of Acousto-Optic Polarization Mode Conversion Peak Frequency and Efficiency -- Intermodal Fiber Interferometer with Scanning Laser and Correlation Signal Processing: an Experimental Study -- Development of a Monitoring System the Flow of Charged Particles for Analysis of the Nanosatellite Flight Path -- The UV-Vis Transmission Spectra of Ferromagnetic Fluids -- Calculation of parameters of positive column in laser tubes of variable diameter -- Radiation Power of He-Ne Laser with Different Geometry of the Tube Cross Section -- Laser System for the Average Volume-Surface Diameter of Aerosol Particles Measuring -- The Compensation of Radiation-Induced Losses in the Fiber Optic Communication Line in its Operation Mode -- Part 3: Information Technologies and Signal Processing -- Object Classification Based on Channel State Information Using Machine Learning -- Implementation of a Broadband Horn Antenna with High Level of Cross-Polarization Discrimination in Microwave Inspection Systems -- Machine Learning Methods Application for the Avionics Systems Health Analysis and Faults Localization Challenges -- Research on FBMC/OQAM Spectral and Energy Characteristics for Different Prototype Filters -- Multiple Object Tracking Using Convolutional Neural Network on Aerial Imagery Sequences -- Application of a Convolutional Neural Network for Detection of Ignition Sources and Smoke -- ROM-Based Encoder with Bubble Error Correction -- Performance Analysis for Massive MIMO Systems Based on Quadriga Channel Model -- CPU-based FPGA Algorithm Model of Fiber Optic Current Sensor Demodulator -- Configuring the Interval Target in a Multilayer Feedforward Neural

Network on the Example of the Problem of Medical Diagnostics -- Investigation of the Effectof ADC Imperfections on the Amplitude Spectrum Measurement Error for a Quadrature Demodulator Technique -- Analysis of the Possibility of Correcting the Shape of the Average Cardiac Complex in the Presence of Synchronization Errors During Accumulation -- Glucose Variability in Gestational Diabetes Patients with Different Glycemic Goals -- Application of Simulink for Research of a Frequency Measurement Method Based on Quadrature Demodulation Technique -- A Model of the Cross-Correlation Method for Processing Unknown-Form Signals in a Passive Multi-Position Radar System -- Transmission Errors in Screen-Camera Link System -- Visualization of Three-Dimensional Light Bullets Propagation in Nanotubes Taking into account the Mechanical Tension and Magnetic Field using Graphics Processor -- Receiver for m-ary radio communication system between motile objects in the microwave range -- Justification of the Choice of Signal Processing Method and its Implementationin the Digital Part of the Receiver for Radar Stations -- Features of Signal Processing in the Study of Defects in Metallic Mediums using an Electromagnetic Acoustic Wave -- Assessment of Baroreflex Mechanism by Joint Analysis of Arterial Blood Pressure and Heart Rate -- The Performance of Active-Contour and Region Growing Methods Against Noises in Computed-Tomography Scans -- Method of Fetal Movement Registration for Remote Monitoring Systems -- Determination of the Structures Contours Parameters in Biological Films for the Development of the Cuneiform Dehydration Method -- Part 4: Telecommunications and Navigation Systems.-Simulation of a Half-Duplex Protocol in a Meteor Radio Communication System to Estimate Message Delivery Time -- Experimental Studies of the Wideband VCO's Tuning Characteristics Linearization Using an Active Diode Converter -- Ultra-Low-Noise Reference Oscillator Based on a Dielectric Resonator with Mechanical and ElectricalFrequency Tuning -- Interactive Application for the Synthesis of Communication Lines with Antenna Arrays -- Model of integrated radio access and wireless backhaul for 5th generation network -- Optical Signal Processing Method of the Rubidium-87 Quantum Frequency Standard -- Comparison of Channel Estimation Methods for Underwater Acoustic Channel -- Comparison of PAPR Reduction Techniques for OFDM Transmission over Underwater Acoustic Channel -- Design of Airborne Dual-Band Low-Profile Antenna Array -- Preamble Signals for Detection Timing and Doppler Synchronization in Underwater Acoustic Communications -- Analysis of the Capacity of an LTE Carrier Based on Simulation and Experimentation -- Beamforming and Spatial Multiplexing Performance Evaluation in 5G Ultra-Dense Networks -- Blind Synchronous Reception Algorithm for UWB Signals -- Direct TDOA Based Positioning in Satellite Geolocation -- Solution of the Dynamic System of Quantum Kinetic Equations for Hot Atomic Gas Interacting with Laser Radiation -- Experimental Investigation of Radiation Characteristics of the Controlled Slot Antenna Array -- Wireless Wi-Fi Module Testing Procedure in Gigabyte Passive Optical Network to Optical Network Terminal of Equipment -- The Orbits Shape Influence of the Navigation Satellite Systems on Positioning Accuracy.

Sommario/riassunto

This volume presents peer reviewed and selected papers of the International Youth Conference on Electronics, Telecommunications and Information Technologies (YETI-2020), held in Peter the Great St. Petersburg Polytechnic University, St. Petersburg on July 10–11, 2020. It discusses current trends and major advances in electronics, telecommunications, optical and information technologies, focusing, in particular, on theoretical and practical aspects of developing novel

devices and materials, improving data processing methods and technologies. The conference brings together young researchers and early-career scientists participating in a series of lectures and presentations, establishing contacts with potential partners, sharing new project ideas and starting new collaborations.