

2022 International Conference on Information, Control, and Communication Technologies (ICCT 2022)

**Astrakhan, Russia
3 – 7 October 2022**



**IEEE Catalog Number: CFP22DB6-POD
ISBN: 978-1-6654-9368-0**

**Copyright © 2022 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP22DB6-POD
ISBN (Print-On-Demand):	978-1-6654-9368-0
ISBN (Online):	978-1-6654-9367-3

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

AUTHORS	ARTICLE TITLE	ARTICLE IDENTIFIER	The title of the paper	Pages
	Title		Title	1
	Preface		Preface	2
Nikolay A. Mostakov; Vladislav S. Bakaev; Konstantin A. Kulagin; Andrey N. Migachev; Aleksey V. Grafenkov	UAV-based Drowning Rescue System	412435	2022220604.pdf	3-6
M. V. Marunin; N. V. Polikarpova	Two-dimensional phononic crystal based on fused silica with hexagonal symmetry	412448	2022219541.pdf	7-10
Nataliya V. Polikarpova; Vitold E. Pozhar	Frequency Range of Operation of the Piezoelectric Transducer of the Acousto-Optic Filter	412368	2022215709.pdf	11-14
Mikhail Mazur; Vitold Pozhar; Yuri Suddenok	Consideration of acoustic anisotropy in acoustooptical modulators designing	412425	2022197365.pdf	15-17
Vitold Pozhar	Acousto-optics as a modern optical technology	412432	2022197348.pdf	18-20
Natalia S. Konnova; Pavel V. Mizinov	Simulation Of Biometric System Performance Under Spoofing Attack	412423	2022233786.pdf	21-24
Anastasia Guryleva; Valeriya Gresis; Denis Fomin; Anastasia Zolotukhina; Dmitrii Fomin; Valeriya Bukova	Grains Impurity Assessment by Imaging Spectroscopy Means	412437	2022212589.pdf	25-30
Dmitry S. Kukunin; Aleksandr A. Berezkin; Ruslan V. Kirichek	Asynchronous Address System Using Code Division Based on Maximum Length Sequences	412367	2022211424.pdf	31-37
Aleksandr Berezkin; Dmitry Kukunin; Ruslan Kirichek	Neural network coding in data compression systems in communication channels	412366	2022213593.pdf	38-42
Daharnis; Zadrian Ardi; Abdul Halim Ade	The Mobile-Based Model of Cooperation between School Personnel and Parents for Optimising the Post-Global Pandemic Learning Process	412648	2022230650.pdf	43-50
Anastasia Guryleva; Alexander Machikhin; Valery Svistushkin; Alexey Toldanov; Valeriya Bukova; Yevgenia Kulikova	Microcirculatory Perfusion Imaging of the Soft Palate and Tonsils	412436	2022212566.pdf	51-53
Aleksei Khitrovo	Positional Turbine Pneumatic Actuator with Jet Control System	412446	2022201749.pdf	54-56
Aleksei Khitrovo	Possibilities of Using Piezoelectric Converters to Produce "Green" Energy	412445	2022211666.pdf	57-61
Leonid Korolev	Analysis of algorithms for filtering the orientation parameters of unmanned aerial vehicles under changing external conditions	412420	2022202391.pdf	62-66
A.G. Cherevko; A.S. Krygin; R.A. Soots; I.V. Antonova	Flexible, Eco-Friendly Graphene Resistive Dipole for G5 Standard with J Shaped Balancing System	412449	2022234543.pdf	67-71
Alexander Ivchenko; Pavel Izyumov	AGMV Approach for Reduce Complexity of Classification Tasks	412442	2022197245.pdf	72-79
Alexander S. Sovlukov; Victoria V. Yatsenko; Alexander V. Kaychenov	Radiofrequency Resonator Methods for Measurement of a Liquid Level in a Reservoir	412444	2022197940.pdf	80-85
Alexander S. Sovlukov	Microwave Method for Measurement of Water Content in a Dielectric Liquid independently on its Dielectric Permittivity	412443	2022197898.pdf	86-89

Oleg M. Protalinsky; Anna A. Khanova; Irina O. Bondareva; Evgeniya T. Nesterova	Control of the Organizational System Configuration in the Context of Digital Transformation	412438	2022215719.pdf	90-94
Ildus Sh. Khasanov, Sergey A. Lobastov, Aleksandr V. Anisimov	Optical characterization of diffusion transition layers in thin films using surface plasmon resonance multiwavelength measurements	412441	2022208784.pdf	95-97
Blagova V. Tatyana, Ildus Sh. Khasanov	Influence of the angular and temporal spectrum of a pseudo-thermal light source on the quality of ghost imaging	412440	2022234565.pdf	98-101
Aleksandr V. Anisimov; Ildus Sh. Khasanov	Determination of the complex refractive index profile of the thin gradient layer by surface plasmon resonance	412439	2022212901.pdf	102-105
Nikolay L. Menshikh; Sergey A. Fedorov; Ruslan V. Gilmudinov	Application of Antenna – Lens System for Measurement of Bistatic Parameters of Materials	412447	2022198088.pdf	106-109
Nikita N. Trufanov; Maria A. Dolmatova; Dobroslav P. Egorov; Ivan M. Chernenky; Dmitry V. Churikov; Oleg V. Kravchenko	A Machine Learning Approach for EEG Brain Signal Classification	412434	2022228927.pdf	110-112
Mredula K. Pyarelal; Oleg V. Kravchenko; Dmitry V. Churikov; Bankim M. Shah	Finite Volume Simulation for Evolution of Amphibian Embryo Model	412433	2022228935.pdf	113-116
Vilmen Abramian; Andrey Larionov	Numerical Research of the Probability of Radio Frequency Identification of Tags Using aUAV-mounted RFID Reader	412431	2022202540.pdf	117-121
Balakin Dmitry	Analysis of electrocardiographic signals using a new method based on the principles of wavelet processing and Gauss-Hermit functions	412422	2022197119.pdf	122-125
Oleg Kolganov; Roman Egorov; Alexander Ilyinsky; Alexander Khoshev; Igor Kinzhagulov; Alexey Fedorov	Development of the Design of the Sensor and the Elements of Software Data Processing of the Dynamic Indentation Device	412424	2022201784.pdf	126-130
Vladimir M. Vishnevsky; Konstantin A. Vytovtov; Elizaveta A. Barabanova; Sergey A. Frolov; Vladislav E. Buzdin; Nikita S. Kalmykov	Modelling of UAV Simulator for Local Navigation System of Tethered High-Altitude Platforms	412430	2022234104.pdf	131-134
Elizaveta A. Barabanova; Konstantin A. Vytovtov; Anastasia N. Fedorovskaya; Georgii K. Vytovtov	Analysis of Insertion Loss and Crosstalk in Multistage Photonic Switches	412369	2022233390.pdf	135-137
Stanislav A. Yamashkin; Ekaterina O. Yamashkina; Anatoliy A. Yamashkin	Integration of Neural Network Models in Spatial Data Analysis Systems	412421	2022198367.pdf	138-141
Ya.A. Eliovich; V.A. Barat; V.V. Bardakov; A.Yu. Marchenkov; D.D. Khokhlov; D.A. Zhgut	Predictive Analysis of Structural Changes in Paratellurite Crystals Using the Acoustic Emission Method	412419	2022198950.pdf	142-146
Rakesh Kumar; Bhavneet Singh Soodan	Modelling and Analysis of Cloud Computing Systems using Queuing Models with Correlated Arrivals and Correlated Reneging	411115	2022231482.pdf	147-151
Dmitry A. Skorobogatchenko; Alexander A. Sokolov; Alexander I. Frolovichev; Julia M. Vlasova	Simulation of Facilities that Ensure Adaptive Functioning of Urban Street and Road Network	410784	2022220373.pdf	152-156
Andrey N. Serov; Alexander A. Shatokhin; Nikolay A. Serov	Application of the "Worst Case" Method to Assess the Effect of ADC Nonlinearity on the RMS Measurement Error	410785	2022200005.pdf	157-161
Sergey Yu. Krasnoborodko; Yury E. Vysokikh; Vladislav V. Paramonov; Boris K. Medvedev; Nikolay A. Filippov; Alexey V. Andreev	The Study of Deposition Process of the TiN coating for Atomic Force Microscopy Cantilevers	410864	2022211882.pdf	162-165

Konstantin A. Kulagin; Andrey N. Migachev; Nikolay A. Mostakov; Tatiana Y. Gladkikh	UAV Group Operator Decision Support System	410852	2022220603.pdf	166-169
Alexey Vladimirovich Rybakov; Vladimir Gennadievich Ilyichev; Ravil Garipolaevich Dzhambekov; Pavel Igorevich Tamkov; Akim Vladimirovich Pavlov;	Providing Energy Weapons for a Marine Unmanned Multi-purpose Platform with Catamaran and Trimaran Type Hull	410788	2022218996.pdf	170-173
Vladislav S. Bakaev; Nikolay V. Goloburdin; Konstantin A. Kulagin; Rodion O. Anisimov	Trajectory Planning of a Manipulator Robot in Joints Space	410828	2022220597.pdf	174-178
Jose Luis Ordóñez-Avila; Eduardo Rene Torres Maldonado; Islam Magomedov	Water Generation Based on Condensation Controlled by Gray Scale and Artificial Vision	410850	2022222106.pdf	179-183
Petr N. Shkatov	Measurement of Changes in Electrical Resistivity of Flat Samples Under Uniaxial Tension	410867	2022198238.pdf	184-187
Mazahir Mahammad Isayev; Mehriban Bakhtiyar Mammadova; Natavan Mammad Khasayeva	Evaluation of the Accuracy of The Information and Measurement System Under Test	411116	2022228909.pdf	188-192
E. A. Likhobabin; A. A. Ovinnikov; R. S. Goriushkin; P. B. Nikishkin; E. I. Khokhryakov	High Throughput FPGA Implementation of LDPC Decoder Architecture for DVB-S2X Standard	410862	2022185133.pdf	193-196
Kirill V. Cherkasov; Sergey A. Meshkov; Mstislav O. Makeev	Research of resonant-tunneling diodes' spacer layers' thickness impact on their functional parameters and functional parameters of balanced frequency mixer based on these diodes	410848	2022219513.pdf	197-200
Vladimir A. Bogatyrev; Stanislav V. Bogatyrev; Anatoly V. Bogatyrev	Control of Multipath Transmissions in the Nodes of Switching Segments of Reserved Paths	410807	2022218370.pdf	201-205
Vladimir A. Bogatyrev; Stanislav V. Bogatyrev; Anatoly V. Bogatyrev	Reliability and Timeliness of Servicing Requests in Infocommunication Systems, Taking into Account the Physical and Information Recovery of Redundant Storage Devices	410809	2022200235.pdf	206-209
Maxim I. Kupreychik; Vladimir I. Balakshy; Vitold E. Pozhar	Spatial Filtering of Optical Images in Acousto-Optic Cells Based on Biaxial Crystal	410825	2022199075.pdf	210-216
Vladimir A. Bogatyrev; Stanislav V. Bogatyrev; Anatoly V. Bogatyrev	Choosing the Discipline of Restoring Computer Systems with Acceptable Degradation with Consolidation of Node Resources Saved After Failures	410808	2022200138.pdf	217-220
Zheng Wang; Yuhao Cong	Output feedback stabilization of linear systems with multiple delays using model reduction methods	410776	2022211818.pdf	221-225
Aleksandr Sokolov, Andrey Larionov, Amir Mukhtarov, Ivan Fedotov	Architecture of a Distributed Parallel Computing System Using Docker Cluster	410836	2022213816.pdf	226-232
V.M. Vishnevsky; R.N. Minnikhanov; I.V. Barsky; A.A. Larionov	Development of a hybrid vehicle identification system based on video recognition and RFID	410854	2022198062.pdf	233-239
Yuhao Cong; Shan Wu	Estimating parameters of permanent magnet synchronous motor via finite element methods	410821	2022211394.pdf	240-243
Andrey V. Balabanov; Asim M. Kasimov; Anastasia A. Mamontova; Alexander A. Sukhorukov; Vasilii S. Bezmenov; Aleksey A. Khitrovo; Valery Y. Fateev	Development of Test Generator for Investigating Performances of Microfluidic Bistable Elements	410781	2022215920.pdf	244-247

Alexander S. Bugaev; Vadim M. Agafonov; Anna S. Shabalina	Mathematical Model of the Hydrodynamic Noise in the Electrochemical Microsystems	410786	2022214358.pdf	248-252
Sergey A. Kargin; Adel D. Ibadullaev; Pavel A. Dorokhov	Method for Calculating Thermodynamic Processes in the Organization of a Gas-steam Cycle in an Internal Combustion Engine	410857	2022212041.pdf	253-256
Daniil Yu. Matveev; Andrei V. Abrashkin	The Surface Structure and Magnetic Properties of Amorphous and Nanocrystalline Microwires Based on an Iron Alloy of Multicomponent Composition	410823	2022210751.pdf	257-261
Vyacheslav V. Konyashov; Alexey S. Sergeev; Alexey V. Fedorov	Development of an Algorithm for Searching for a Mark, Determining its Center and Shift from the Initial Position for Software and Hardware for Processing Signals for Video Inspection of a Vision System	410833	2022198063.pdf	262-266
Iliia Peshkov; Natalia Fortunova; Irina Zaitseva	Determining the optimal geometry of planar antenna arrays for joint estimating the coordinates of two signal sources on azimuth	410865	2022228815.pdf	267-271
Fedor Pashchenko; Sergey Gulyaev; Alexander Pashchenko; Lada Khizhinskaya	Simulation of the Gas Production Process at the Field under Restrictions on the Flow Rate	410826	2022218366.pdf	272-274
M. P. Farkhadov; O. D. Kuprikov; D. V. Komanich	Hydroacoustic Signal Characteristics Researching for an Underwater Communication Channel Development	410846	2022197999.pdf	275-281
Olga M. Vokhnik; Pavel V. Korolenko; Vladimir I. Odintsov; Vladimir I. Mokhov	Coherent Properties of Dispersed Laser Beams with a Wide Spectrum	410822	2022206605.pdf	282-285
Pavel V. Korolenko; Alexei M. Zotov	Influence of statistical characteristics of speckle-like wave fields on their optical properties	410824	2022219403.pdf	286-288
Yana A. Kupriyanova; Galina V. Zhikhareva; Anastasia I. Bobrovskaya; Igor V. Andreev	Approbation of the Algorithm of Physiological Interpretation of the Results of Solving the Inverse Problem of Electrocardiography Using the Model of the Electrical Activity of the Heart	410810	2022222457.pdf	289-294
Yana A. Kupriyanova; Galina V. Zhikhareva; Tatiana B. Mishenina; Anastasia I. Bobrovskaya; Igor V. Andreev	Selection of the Regularization Coefficient in Solving the Inverse Problem of Electrocardiography by High-Frequency Low Amplitude Components of ECG Signals	410789	2022222461.pdf	295-298
Andrey I. Semenikhin; Diana V. Semenikhina; Yury V. Yukhanov	Anisotropic 2-bit Low-RCS Meta-coatings with Improved Diffusion Scattering	410814	2022205615.pdf	299-302
Andrey I. Semenikhin; Diana V. Semenikhina; Yury V. Yukhanov	Formation of Multilobe Bistatic Scattering Diagrams of Cylindrical Coding Anisotropic Metasurfaces	410813	2022197141.pdf	303-306
Alexander S. Sipin	Random Walk on Balls for the Neumann Boundary Value Problem	410839	2022199207.pdf	307-312
Alexander Dubelschikov; Tatyana Tsoy; Yang Bai; Mikhail Svinin; Evgeni Magid	Intelligent System Concept of an IoT Cameras Network Application for an Unmanned Aerial Vehicle Control via a Graphical User Interface	410843	2022203768.pdf	313-316
Mikhail M. Shusharin; Ilya E. Mogilevsky; Aleksandr N. Bogolyubov	Study of the singularity of the electromagnetic field in an ogival waveguide with reentrant edges	410863	2022197327.pdf	317-321

Dinir Imameev; AUFAR Zakiev; Evgeni Magid; Edgar Martinez-Garcia; Hongbing Li	Modelling autonomous perpendicular parking procedure for car-like robot Aurora Unior in Gazebo simulator	410818	2022202154.pdf	322-325
Vladimir Vishnevsky; Dharmaraja Selvamuthu; Vladimir Rykov; Dmitry Kozyrev; Nika Ivanova	Reliability modeling of a flight module of a tethered high-altitude telecommunication platform	410811	2022171456.pdf	326-331
Ivan Fanyaev; Ihar Faniayeu; Sergei Khakhomov	Switchable cylindrical hyperlens for THz range	410817	2022199116.pdf	332-335
Alexander Zeifman; Yacov Satin; Ivan Kovalev; Anastasia Kryukova; Galina Shilova; Ilya Usov	On the Study of Forward Kolmogorov System: the Corresponding Problems and Bounds for Inhomogeneous Continuous-Time Markov Chains and Models	410883	2022206069.pdf	336-341
Alexander V. Andryushin; Edik K. Arakelyan; Fedor F. Pashchenko; Alexey V. Neklyudov; Julia Y. Yagupova; Nina S. Dolbikova	Selection of the Composition of the Included Generating Equipment Considering the Reliability Factor	410830	2022234752.pdf	342-347
Valeriy V. Malyy; Alexandr S. Kostyukhin; Alexey V. Fedorov; Igor Y. Kinzhagulov	Development of Technology for Automated Non-Destructive Quality Testing of Soldered Joints of Heat Exchangers	410847	2022197710.pdf	348-351
Rodion O. Anisimov; Nikolay V. Goloburdin; Konstantin A. Kulagin; Tatiana Ya. Gladkikh; Yuri D. Vorobiev	Visual Localization System Algorithm for UAV	410827	2022220609.pdf	352-356
M.A. Vaganov; V.I. Kazakov; V.V. Kitaev; A.S. Paraskun	Emission Spectra of Metals Experimental Study by Contactless Optical Spectroscopy Methods	410878	2022219533.pdf	357-361
Igor V. Bogachkov; Nicolay I. Gorlov; Tatiana I. Monastyrskaya	Types and Applications of Fiber-Optic Sensors Based on the Mandelstam – Brillouin Scattering Principle	410874	2022214394.pdf	362-365
Guang-Da; HuXin Jin	Feedback stabilization for velocity regulation of permanent magnet synchronous motors	410806	2022211961.pdf	366-368
Guriy A. Kushner	Implementation of Software for Technical Diagnostics of Shafts Based on Vibration Analysis	410802	2022197822.pdf	369-372
Xin Jin; Guang-Da Hu	A numerical algorithm for estimating the region of attraction of nonlinear systems with applications in power systems	410805	2022211637.pdf	373-376
Vladimir M. Vishnevsky; Konstantin A. Vytovtov; Elizaveta A. Barabanova; Evgeniy A. Lesiv; Sergey A. Frolov; Vladislav E. Buzdin; Nikita S. Kalmykov	Physical Foundation of Hybrid Navigation System For Tethered High-Altitude Unmanned Platforms	410876	2022234101.pdf	377-381
Konstantin A. Vytovtov; Elizaveta A. Barabanova; Mikhail G. Ivanov; Elena V. Shalimova	Optical Antenna with Controlled Pattern for Atmospheric Link of Mobile Air Object	410782	2022234096.pdf	382-386
Yuhao Cong; Menglin Li	A numerical method for feedback stabilization of linear delay systems with applications	410780	2022211372.pdf	387-391
Oleg M. Demidenko	Techniques of Adapting a Calculating Process to Operating Load of a Local Area Network	410831	2022197765.pdf	392-397
Konstantin A. Vytovtov; Elizaveta A. Barabanova; Tatiana Ya. Gladkikh; Anastasia L. Kulina; Georgii K. Vytovtov	Remote Monitoring of Water Pollution With Oil Products in the Visible Range by Using UAV Multispectral Camera	410800	2022234089.pdf	398-402
Oleg M. Demidenko; Natallia A. Aksionova; Andrei V. Varuyeu	Identification of students' faces in a video stream using the Viola-Jones method	410816	2022217460.pdf	403-407

Yahui Liu; Xingfen Wang; Shijie Wang; Zhulu Xu	Short-term Power Load Forecasting Based on Temporal Convolutional Network	410834	2022211294.pdf	408-411
Dmitriy Kuzivanov; Kseniya Stepanova; Alexey Fedorov; Igor Kinzhagulov; Anastasia Kovalevich	Acoustic Emission Control of Fatigue Destruction of Thin Aluminium Alloy Structures	410778	2022218886.pdf	412-415
Yulia V. Mantrova; Pavel V. Zinin; Kamil M. Bulatov; Igor B. Kutuza; Alexey A. Bykov	Measurement of the Emissivity and Temperature Distributions of Graphite-Like Structures Laser Heated in a Diamond Anvil Cell	410856	2022231001.pdf	416-419
Sergey A. Titov; Yulia S. Petronyuk; Vadim M. Levin; Alexey N. Bogachenkov	Formation of Ultrasonic Signals in Layered Objects with Abrupt Changes in Acoustic Impedance	410840	2022199063.pdf	420-423
Nikita Yu. Sivov; Vladislav V. Pinchukov; Anton Yu. Poroykov; Ekaterina V. Shmatko	Computer Simulation of the Intrinsic Parameters Decalibration for the Stereo System of Video Cameras	410829	2022234882.pdf	424-427
Sergey A. Titov; Alexander B. Burlakov; Lydia A. Zykova; Chih C. Huang	Estimation of Blood Flow Velocity in the Heart of the Danio rerio Embryo Using Correlation of Ultrasonic Signals	410851	2022199057.pdf	428-431
Nikolai I. Petrov; Galina N. Petrova	Physical Mechanisms of Generation of Microwave and THz Radiation in Lightning Discharge	410820	2022213750.pdf	432-436
Nikolai I. Petrov; Yuri M. Sokolov; Vladimir V. Stoiakin; Viktor A. Danilov; Vladimir V. Popov; Boris A. Usievich	Goos-Hanchen Shift in Subwavelength Gratings Enhanced by Surface Plasmon Resonance in the Infrared Range	410819	2022213746.pdf	437-441
Vyacheslav E. Antsiperov; Vladislav A. Kershner	A Model for Identifying Objects in Images Based on the Concept of a Receptive Field of Neurons	410842	2022226489.pdf	442-447
Sergey V. Muravyov; Duc C. Nguyen	Weld Defects Automatic Visual Recognition by Combined Application of Canny Edge Detector and Interval Fusion with Preference Aggregation	410832	2022197837.pdf	448-451
Pavel A. Nikitin	Determining the Optimal Parameters of a Terahertz Radiation Acousto-Optic Deflector Using a Sectioned Ultrasound Transducer	410801	2022197196.pdf	452-455
Olga V. Blinova; Mais P. Farkhadov	Development of a portal to help organize temporary wireless networks	410849	2022201895.pdf	456-460
Alifanova Irina; Fedorov Alexey; Bychenok Vladimir; Berkutov Igor	Acoustoelasticity Method with Thermo-optical Generation of Ultrasonic Vibrations for Control of Residual Stresses in Special Pipes	410872	2022213609.pdf	461-465