

**XXVII International Conference
WECONF-2024**

**«2024 WAVE ELECTRONICS AND ITS
APPLICATION IN INFORMATION
AND TELECOMMUNICATION SYSTEMS»**

(IEEE Conference Record #61770)

03 - 07 June 2024

CONFERENCE PROGRAM

**St-Petersburg
2024**

CONFERENCE ORGANIZERS

SAINT PETERSBURG STATE UNIVERSITY OF AEROSPACE INSTRUMENTATION (ST. PETERSBURG, RUSSIA)

IEEE – INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS

INSTITUTE OF RADIO AND INFORMATION SYSTEMS – IRIS (VIENNA, AUSTRIA)

INSTITUTE OF RADIOENGINEERING AND ELECTRONICS OF RUSSIAN ACADEMY OF SCIENCES (MOSCOW, RUSSIA)

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CONFERENCE SECTIONS*

CHAPTER 1-2. Acoustooptics & Acoustoelectronics

(Акустооптика и Акустоэлектроника)

CHAPTER 3. Methods and devices of information processing

(Методы и устройства обработки информации)

CHAPTER 4. Data processing and transmission in information and telecommunication systems

(Обработка и передача информации в инфокоммуникационных системах)

CHAPTER 5. Round table «Advanced on-board computing networks»

(Круглый стол «Перспективные бортовые вычислительные сети»)

CHAPTER 6. Electromechanics and control systems

(Электромеханика и системы управления. Встроенные микроэлектронные системы)

CHAPTER 7. Microelectronic Embedded Systems

(Встроенные микроэлектронные системы)

CHAPTER 8. Modeling and situational quality management in electronics and instrumentation

(Моделирование и ситуационное управление качеством в электронике и приборостроении)

CHAPTER 9. Instrumentation and Intelligent Transportation Systems

(Контрольно-измерительные приборы и интеллектуальные транспортные системы)

CHAPTER 10. Quantum telecommunications

(Квантовые телекоммуникации)

*Доклады в программе внутри секций перечислены в алфавитном порядке по фамилии первого автора. По согласованию с председателем секции порядок следования докладов может быть изменен.

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CONFERENCE REGULATIONS

JUNE 03
(10:00 – 14:00)

10:00 – 11:30

REGISTRATION & CONFERENCE OPENING CEREMONY

11:30 – 14:00

PLENARY SESSION

JUNE 04
(10:00 – 17:00)

10:00 – 13:30

CHAPTER 1-2. Acoustooptics & Acoustoelectronics (Session 1)

10:00 – 17:00

CHAPTER 4. Data processing and transmission in information and telecommunication systems

10:00 – 13:00

CHAPTER 9. Instrumentation and Intelligent Transportation Systems

11:00 – 13:00

CHAPTER 5. Round table «Advanced on-board computing networks»

14:00 – 17:00

CHAPTER 7. Microelectronic Embedded Systems

14:00 – 17:00

CHAPTER 8. Modeling and situational quality management in electronics and instrumentation (Microelectronic Embedded Systems)

JUNE 05
(10:00 – 17:00)

10:00 – 13:30

CHAPTER 1-2. Acoustooptics & Acoustoelectronics (Session 2)

10:00 – 17:00

CHAPTER 3. Methods and devices of information processing

10:00 – 13:00

CHAPTER 6. Electromechanics and control systems

14:00 – 16:00

CHAPTER 10. Quantum telecommunications

JUNE 06

CULTURAL PROGRAM

JUNE 07

(11:00 – 12:00)

CLOSING OF THE CONFERENCE

Session 1. JUNE 04 (10:00 – 13:30)

Session 2. JUNE 05 (10:00 – 13:30)

**CHAPTER 1-2
ACOUSTOOPTICS & ACOUSTOELECTRONICS**

I.A. Balandin, M.P. Poliakov, A.A. Zolotukhina, G.V. Nesterov, V.E. Pozhar
STC UI RAS, Moscow, Russia
SMALL-SIZED ACOUSTO-OPTIC IMAGING SPECTROMETER

A. S. Beliaeva
Scientific and Technological Centre of Unique Instrumentation of the Russian Academy of Sciences Moscow, Russia;
St. Petersburg State University of Aerospace Instrumentation, St. Petersburg, Russia

O. V. Polschikova
Scientific and Technological Centre of Unique Instrumentation of the Russian Academy of Sciences Moscow, Russia

A. A. Sudarev
Scientific and Technological Centre of Unique Instrumentation of the Russian Academy of Sciences Moscow, Russia;
Bauman Moscow State Technical University, Moscow, Russia

**OPTICAL SYSTEM DESIGN OF A VISUAL COLORIMETER BASED ON
ACOUSTO-OPTICAL TUNABLE FILTER**

V.N. Belyi, N.A. Khilo, A.M. Varanetskii, P.I. Ropot, A.V. Agashkov
Institute of Physics of the NAS of Belarus, Minsk, Republic of Belarus

P.A. Khilo
Sukhoi State Technical University of Gomel, Gomel, Republic of Belarus
**ACOUSTO-OPTIC CONTROL OF BESSEL-LIKE BEAM PARAMETERS
IN THE FAR ZONE WITH THE USE OF UNIAXIAL TeO₂ AND NaBi(MoO₄)₂
CRYSTALS**

E.A. Djakonov, N.V. Polikarpova
Lomonosov Moscow State University, Moscow, Russia
**ACOUSTO-OPTIC METHODS FOR MULTISPECTRAL SCANNING
OF THE MULTI-LAYER IMAGE IN THE FIELD OF ART HISTORY**

K.N. Klimov

Moscow Aviation Institute (National Research University), Moscow, Russia

ANALYTICAL SOLUTION TO THE PROBLEM OF HYPERBOLOID INTERSECTION FOR THE DIRECTION FINDING OF RADIATION SOURCES

E.I. Kostyleva, S.N. Mantsevich

M.V. Lomonosov Moscow State University, Moscow, Russia

ACOUSTIC FIELD STRUCTURE STUDY IN TELLURIUM DIOXIDE QUASI-COLLINEAR ACOUSTO-OPTIC CELLS

G. V. Kulak

Mozyr State Pedagogical University named after I.P. Shamyakin, Mozyr, Belarus

P. I. Ropot

Institute of Physics of the NAS of Belarus, Minsk, Belarus

V. I. Kazakov, S.V. Kulakov, O.V. Shakin

Saint-Petersburg State University of Aerospace Instrumentation (SUAI), St. Petersburg, Russia

DIFFRACTION OF ANNULAR LIGHT BEAMS BY ULTRASOUND IN PARATELLURITE CRYSTALS

M.I. Kupreychik, V.I. Balakshy

Lomonosov Moscow State University, Moscow, Russia

OPTICAL FREQUENCY COMB WITH BROADLY TUNABLE SPACING GENERATION WITH ACHROMATIC WIDE-ANGLE ACOUSTO-OPTIC DIFFRACTION IN $\text{LiNa}_5\text{Mo}_9\text{O}_{30}$ BIAXIAL CRYSTAL

S.N. Kurilkina, V.N. Belyi, N.A. Khilo

B.I. Stepanov Institute of Physics of National Academy of Sciences of Belarus, Minsk, Belarus

S.V. Kulakov

St. Petersburg State University of Aerospace Instrumentation, St.-Petersburg, Russia

FORMATION OF BESSEL TYPE ACOUSTIC BEAMS FOR UNDERWATER COMMUNICATIONS

S.N. Mantsevich, V.I. Balakshy

M.V. Lomonosov Moscow State University, Moscow, Russia

MULTISTABILITY OBSERVATION IN ACOUSTO-OPTIC GENERATOR

P.A. Nikitin

*Scientific and Technological Center of Unique Instrumentation of the RAS;
National Research University "Moscow Power Engineering Institute", Moscow, Russia*

**ACOUSTO-OPTICAL DIFFRACTION OF TERAHERTZ RADIATION
USING A SECTIONED ULTRASOUND TRANSDUCER**

M.P. Poliakov

*Scientific and Technological Center of Unique Instrumentation Russian Academy of
Sciences, Moscow, Russia*

A.Y. Kacharava, V.V. Glazkov

Bauman Moscow State Technical University, Moscow, Russia

**ACOUSTO-OPTIC LUMINESCENT IMAGING SPECTROMETER OF THE
UV SPECTRAL RANGE**

S.A. Titov, L.A. Zykova

Scientific and Technological Center of Unique Instrumentation of RAS, Moscow, Russia

**ESTIMATION OF PARTICLE FLOW VELOCITY IN A LIQUID FROM
PULSE ECHO SIGNALS OF AN ULTRASONIC FOCUSING TRANSDUCER**

T.N. Ulaeva, N.M. Zhilin, N.A. Chirikov, V.I. Strunin

Omsk Scientific Center SB RAS, Omsk, Russia

**A STUDY OF A TEMPERATURE EFFECT ON CHARACTERISTICS OF A
SOLIDLY MOUNTED RESONATOR BASED ON AIN, Al, Mo AND Ti THIN
FILMS**

N.M. Zhilin, T.N. Ulaeva, N.A. Chirikov

Omsk Scientific Center SB RAS, Omsk, Russia

A.G. Kozlov

Omsk State Technical University, Omsk, Russia

**AN INFLUENCE OF AN ELECTRODE CONFIGURATION ON ELECTRICAL
PARAMETERS OF A MICROELECTRONIC BULK ACOUSTIC WAVE
RESONATOR WITH A BRAGG REFLECTOR**

L.A. Zykova, A.B. Burlakov, S.A. Titov, A.N. Bogachenkov

Scientific and Technological Center of Unique, Instrumentation of RAS, Moscow, Russia

**STUDY OF THE MOVEMENT OF THE DANIO RERIO HEART WALLS
USING A MULTIMODAL SETUP**

JUNE 05 (10:00 – 17:00)

CHAPTER 3.

METHODS AND DEVICES OF INFORMATION PROCESSING

V.-A. V. Badakova, V.V. Filatov, D.A. Yudin

State University of Management, Moscow, Russia

I.S. Nefelov

Moscow Automobile and Road University, Moscow, Russia

**3D SCANNERS APPLICATION FOR CREATION OF AGRICULTURAL
MACHINE PARTS DIGITAL TWINS**

D.V. Eremin, A.Yu. Poroykov, O.V. Pechinskaya, E.V. Shmatko, I.A. Shashkova

National Research University “Moscow Power Engineering Institute”, Moscow, Russia

**EXPERIMENTAL ESTIMATION OF THE CALIBRATION ACCURACY
OF INTRINSIC PARAMETERS FOR DIGITAL VIDEO CAMERAS**

V.V. Filatov, V.I. Gvozdarev, D.V. Rybakov, M.Yu. Karelina

State University of Management, Moscow, Russia

**A SYSTEMATIC APPROACH TO SOLVING ISSUES OF DEVELOPMENT
OF THE UNMANNED AIRCRAFT SYSTEMS INDUSTRY BASED
ON DIGITAL MODELING**

G.S. Grishkin

St. Petersburg State University of Aerospace Instrumentation (SUAI), Saint Petersburg, Russia

LLC NordLase, Saint Petersburg, Russia

Y.A. Ryvkina, V.I. Kazakov

St. Petersburg State University of Aerospace Instrumentation (SUAI), Saint Petersburg, Russia

**STUDY OF THE OPERATING MODES OF A SINGLE-FREQUENCY RING
FIBER LASER WITH MODIFIED SCHEME PARAMETERS**

V.I. Kazakov, A.S. Paraskun, Y.A. Ryvkina, G.S. Grishkin

St. Petersburg State University of Aerospace Instrumentation (SUAI), Saint Petersburg, Russia

**SPATIAL-DYNAMIC CHARACTERISTICS RESEARCH OF A LASER
BEAM AT INTERACTING WITH THERMAL CONVECTION FLOW**

V.P. Kulagin

Moscow Technical University of Communications and Informatics, Moscow, Russia

N.D. Muraviev

MIREA – Russian Technological University, Moscow, Russia

**SOFTWARE FOR MODELING DISTRIBUTED SYSTEMS USING THE PETRI
NET APPARATUS**

T.K. Komarova, D.S. Martyakhin, A.V. Kostsov, P.I. Pospelov

North Caucasian Mining and Metallurgical Institute;

Moscow State Automobile and Road Technical University (MADI), Moscow, Russia

S.S. Mordvin

Moscow State Automobile and Road Technical University (MADI), Moscow, Russia

**CONDUCTING A SURVEY TO DEVELOP A TECHNIQUE FOR ASSESSING
THE USER-PERCEIVED QUALITY OF TRANSPORT SERVICES**

A.S. Machikhin, A.V. Guryleva, V.I. Bukova,

*Scientific and Technological Centre of Unique Instrumentation, Russian Academy of
Sciences, Moscow, Russia*

D.S. Fomina, G.V. Andrenova

Moscow State Scientific and Practical Center for Allergology and Immunology;

Moscow City Clinical Hospital №52; Sechenov University, Moscow, Russia

**PHOTOPLETHYSMOGRAPHY AS A NEW TOOL FOR DERMOGRAPHISM
QUANTITIVE EVALUATION**

R.O. Malashin

Saint-Petersburg State University of Aerospace Instrumentation;

Pavlov Institute of Physiology, Russian Academy of Sciences, Saint Petersburg, Russia

M.A. Mikhalkova

Pavlov Institute of Physiology, Russian Academy of Sciences, Saint Petersburg, Russia

AVOIDING CATASTROPHIC FORGETTING VIA NEURONAL DECAY

D.S. Martyakhin, A.V. Kostsov, P.I. Pospelov

North Caucasian Mining and Metallurgical Institute;

Moscow State Automobile and Road Technical University (MADI), Moscow, Russia

A.V. Kabanova, Ya.V. Nikitina

Moscow State Automobile and Road Technical University (MADI), Moscow, Russia

**FIELD STUDIES WHILE DEVELOPING A TECHNIQUE FOR ASSESSING
THE QUALITY OF TRANSPORT SERVICE CONSIDERING THE OPINIONS
OF PRIVATE CAR USERS**

S.A. Nenashev, A.A. Sentsov, V.A. Nenashev

St.-Petersburg State University of Aerospace Instrumentation, Saint-Petersburg, Russia

**FEATURES OF THE IMPLEMENTATION OF A STREAMING DATA
EXCHANGE SYSTEM IN A SPATIALLY DISTRIBUTED SYSTEM
OF SMALL-SIZED RADAR STATIONS**

V.A. Nenashev, I.G. Khanykov

St.-Petersburg State University of Aerospace Instrumentation, Saint-Petersburg, Russia

METHODOLOGY FOR CLASSIFYING TYPES OF UNDERLYING SURFACES USING RADAR FRAMES IN A SPATIALLY DISTRIBUTED SYSTEM OF SMALL-SIZED RADAR STATIONS

Yu.A. Novikova, M.B. Ryzhikov, V.G. Svanidze

St.-Petersburg State University of Aerospace Instrumentation, Saint-Petersburg, Russia

SELECTION OF THE PROBING SIGNAL AND PRIMARY PROCESSING OF THE REFLECTED SIGNAL IN ON-BOARD RADARS FOR MAPPING THE ARCTIC SURFACE AND ANALYZING THE ICE SITUATION

O.V. Opalikhina, M.G. Deruzhev

St.-Petersburg State University of Aerospace Instrumentation, Saint-Petersburg, Russia

APPLICATION OF BINARY INVERSION IN IMPLEMENTATION OF ADAPTIVE FAST FOURIER TRANSFORM ALGORITHM

M.B. Ryzhikov

St.-Petersburg State University of Aerospace Instrumentation, Saint-Petersburg, Russia

INVESTIGATION OF CONDITIONS FOR REDUCING THE NUMBER OF FALSE WIND SHEAR DETECTIONS IN THE ONBOARD Ka-BAND RADAR FOR POLAR LATITUDES

N.Yu. Sivov, A.Yu. Poroykov, E.V. Shmatko

National Research University "Moscow Power Engineering Institute", Moscow, Russia

ESTIMATING THE ERROR IN LOCATING FIDUCIAL MARKERS IN SPACE USING PHYSICAL SIMULATION

Arina Starceva, Vladislav Tuchin, Vladimir Shumigai, Polina Moreva, Anton Teykin

ITMO University, Saint-Petersburg, Russia

APPLICATION OF YOLO AND R-CNN METHODS FOR ADAPTED SELECTION OF ILLUMINATION PATTERNS IN THE GHOST POLARIMETRY

V.Yu. Volkov

Saint-Petersburg State University of Aerospace Instrumentation;

Saint-Petersburg State Electrotechnical University (LETI), Saint-Petersburg, Russia

INVESTIGATION OF THE CHARACTERISTICS OF A FREQUENCY DIVERSITY ANTENNA SYSTEM

JUNE 04 (10:00 – 17:00)

**CHAPTER 4.
DATA PROCESSING AND TRANSMISSION IN INFORMATION
AND TELECOMMUNICATION SYSTEMS**

Olesya Bolkhovskaya, Alexander Maltsev

Lobachevsky University, Nizhny Novgorod, Russia

**ANALYSIS OF THE ACCURACY OF ESTIMATING THE ANGLE
OF ARRIVAL OF A SIGNAL IN AN INHOMOGENEOUS SPARSE
ANTENNA ARRAY**

Alexander Bugrov, Olesya Bolkhovskaya, Dmitry Semenov, Alexander Maltsev

Lobachevsky University, Nizhny Novgorod, Russia

**INVESTIGATION OF THE IMPACT OF RADAR INTERFERENCE
ON THE CHARACTERISTICS OF A RADIO RELAY LINES**

I.G. Buzhin, V.M. Antonova, V.S. Gnezdilov, Yu.B. Mironov, E.A. Gayfutdinov

Moscow Technical University of Communications and Informatics, Moscow, Russia

A WAY TO IMPLEMENT NETWORK SERVICES IN A DATA CENTER

Ivan Chekanov, Sergey Bobrovskiy

Russian State Social University, Moscow, Russia

**SYSTEMATIC APPROACH TO STRUCTURING INFORMATION SUPPORT
SYSTEMS**

T.V. Chernysheva, O.B. Popov, K.V. Orlov, D.A. Volchkov

Moscow Technical University of Communications and Informatics, Moscow, Russia

CEPSTRAL ESTIMATION OF AUDIO BROADCASTING SIGNAL

Tuan Phuong Dang, Adnan F. Alhaj Hasan, Talgat R. Gazizov

Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia

**ANALYZING THE WIRE SCATTERER USING THE METHOD
OF MOMENTS WITH THE STEP BASIS FUNCTIONS**

Grigoriy Fokin, Ilya Grishin

*The Bonch-Bruевич Saint Petersburg State University of Telecommunications,
Saint Petersburg, Russia*

Alexander Sinilnikov

*Federal State Budgetary Institution Order of the Red Banner of Labor Radio Research
and Development Institute named after M.I. Krivosheev, Saint Petersburg, Russia*

Vladimir Sevidov

S.M. Budyonny VAS, Saint Petersburg, Russia

**PERFORMANCE ANALYSIS OF THE 2D-UNITARY ESPRIT ALGORITHM
FOR 5G MMWAVE NETWORKS**

S.G. Fomicheva, A.A. Bardovsky

Saint Petersburg University of Aerospace Instrumentations, Saint Petersburg, Russia

**A LIGHTWEIGHT SMART AGENT FOR DETECTING ATTACKS
IN DISTRIBUTED MACHINE LEARNING**

L.V. Gaival, E.A. Skorodumova

Moscow Technical University of Communications and Informatics, Moscow, Russia

**DETERMINATION OF THE CHARACTERISTIC FEATURES OF THE
APPEARANCE FOR PERSONALITY TYPES IN THE MYERS-BRIGGS
TYPE INDICATOR CLASSIFICATION**

B.G. Ibrahimov, Z. A. Ismaylov

Azerbaijan Technical University, Baku, Azerbaijan

**RESEARCH QUALITY OF FUNCTIONING MULTISERVICE CONVERGED
COMMUNICATION NETWORKS**

A.A. Ivanov, V.I. Artem'ev, O.G. Morozov (*Senior IEEE member*),

A.S. Belov, R.Sh. Misbakhov

*Kazan National Research Technical University named after A.N. Tupolev-KAI, Kazan,
Russia*

**ADDRESSED PHOTONIC DIFFERENTIATOR BASED ON FIBER BRAGG
AND MOIRÉ GRATINGS STRUCTURE**

D.V. Ivanov, A.S. Elchaninova, N.A. Konkin

Volga State University of Technology, Yoshkar-Ola, Russia

**PREDICTION OF TRENDS OF IONOSPHERIC AND TRANSIONOSPHERIC
COMMUNICATION CHANNEL CHARACTERISTICS BY XGBOOST
METHOD**

V.A. Ivanov, D.V. Ivanov, N.V. Ryabova, R.R. Belgibaev

Volga State University of Technology, Yoshkar-Ola, Russia

**DEVELOPMENT OF METHODS FOR SPECTRAL MONITORING
OF HF INTERFERENCE TO DETERMINE THE AVAILABILITY
OF IONOSPHERIC RADIO CHANNELS**

O.G. Morozov (Senior IEEE member), A.A. Ivanov, A.A. Nureeva,

R.Sh. Misbakhov, R.Sh. Misbakhov

*Kazan National Research Technical University named after A.N. Tupolev-KAI,
Kazan, Russia*

**STRUCTURAL MINIMIZATION AND MICROMINIATURIZATION OF
MICROWAVE PHOTONIC MEANS FOR MODULATION AND FORMING
OF PROBING RADIATIONS**

Manh Tuan Nguyen, Adnan F. Alhaj Hasan, Talgat R. Gazizov

Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia

SPARSE WIRE GRID 3D PRINTED PATCH ANTENNA

O.B. Popov, T.V. Chernysheva, P.S. Sapronov, K.V. Orlov

Moscow Technical University of Communications and Informatics, Moscow, Russia

**CHANGING STATISTICAL PARAMETERS OF SOUND BROADCASTING
SIGNALS PREFERRED BY THE LISTENER**

Konstantin Ryutin, Grigoriy Fokin

*The Bonch-Bruевич Saint Petersburg State University of Telecommunications,
Saint Petersburg, Russia*

Vladimir Grigoriev, Vladimir Aksenov

*Limited Liability Company, "Laboratory of Infocommunication Networks",
Saint Petersburg, Russia*

**SOFTWARE-DEFINED RADIO NETWORK POSITIONING TECHNOLOGY
DESIGN. NAVIGATION DATA TRANSCEIVER**

N.V. Ryabova, A.S. Elchaninova, N.A. Konkin

Volga State University of Technology, Yoshkar-Ola, Russian

**STUDY OF APPLICABILITY OF LSTM NEURAL NETWORKS
FOR PREDICTING THE CHARACTERISTICS OF SHORT-WAVE
COMMUNICATION CHANNELS**

D.D. Savelyeva, T.M. Tatarnikova

*Saint Petersburg State University of Aerospace Instrumentation "SUAI",
Saint-Petersburg, Russia*

**HYBRID SYSTEM FOR MONITORING THE TRAFFIC CONSUMPTION
OF IOT DEVICES**

Nikita Sheremet, Grigory Fokin

*The Bonch-Bruевич Saint Petersburg State University of Telecommunications, Saint
Petersburg, Russia*

**SOFTWARE-DEFINED RADIO WIRELESS COMMUNICATION
TECHNOLOGY DESIGN. LTE MIMO MODE VALIDATION**

D.I. Sukhoplyuev

MIREA, Russian Technology University, Moscow, Russia

A.N. Nazarov

*Federal Research Center Computer Science and Control of Russian Academy
of Sciences, Moscow, Russia*

**STOCHASTIC ANALYSIS OF CYBER THREATS IN INFORMATION
SYSTEMS**

T.M. Tatarnikova, D.D. Savelyeva

*Saint Petersburg State University of Aerospace Instrumentation "SUAI",
Saint-Petersburg, Russia*

**MACHINE LEARNING METHODS AND OTHER METHODS
FOR DETECTING NETWORK THREATS TO IOT DEVICES**

L.A. Tremasova, K.A. Panteleeva, V.M. Korovushkina, D.V. Gadasin

Moscow Technical University of Communications and Informatics, Moscow, Russia

**DISTRIBUTED INFORMATION SYSTEM SOFTWARE CODE RELIABILITY
EVALUATION**

Vardges Vardanyan, Anatolij Sychuk, Artem Maksimov

SibSUTIS, Novosibirsk, Russia

**ESTIMATION OF THE THROUGHPUT CAPACITY OF A COHERENT
FIBER-OPTIC TRANSMISSION SYSTEM FOR QPSK-OFDM SIGNALS**

A.M. Veresova, M.N. Isaeva, A.A. Ovchinnikov

Saint-Petersburg State University of Aerospace Instrumentation, Saint-Petersburg, Russia

THE COMPARATIVE ANALYSIS OF SINGLE ERROR BURSTS DECODERS FOR LINEAR CODES

V.O. Yachnaya

Saint-Petersburg State University of Aerospace Instrumentation; Pavlov Institute of Physiology, Russian Academy of Sciences, Saint Petersburg, Russia

M.A. Mikhalkova

Pavlov Institute of Physiology, Russian Academy of Sciences, Saint Petersburg, Russia

METHODS OF INCREASING TRAINING DATA FOR A 3D NEURAL NETWORK FOR ALZHEIMER'S DISEASE DIAGNOSIS

G. Zhemelev

SPbPU, Saint-Petersburg, Russia

PARAMETERIZED 3D REPRESENTATION OF GAS TURBINE BLADES FOR MACHINE LEARNING APPLICATIONS

JUNE 04 (14:00 – 17:00)

**CHAPTER 7.
MICROELECTRONIC EMBEDDED SYSTEMS**

**N.V. Butyrlagin, M.A. Sergeenko, D.V. Kuznetsov, N.N. Prokopenko,
A.V. Bugakova**

Don State Technical University, Rostov-on-Don, Russia

**MICROPOWER HIGH-SPEED OPERATIONAL AMPLIFIER WITH CJFet
(OR CMOS) INPUT FETs**

V.E. Chumakov, D.V. Kleimenkin, A.V. Bugakova

Don State Technical University, Rostov-on-Don, Russia

**ARSENIDE-GALLIUM OPERATIONAL AMPLIFIER WITH INCREASED
GAIN AND LOW LEVEL OF SYSTEMATIC COMPONENT OF ZERO
OFFSET VOLTAGE**

Darya Denisenko

Don State Technical University;

Southern Federal University, Rostov-on-Don, Russia

Nikolay Butyrlagin, Alexey Zhuk

Don State Technical University, Rostov-on-Don, Russia

Alexey Titov

Southern Federal University, Rostov-on-Don, Russia

**RESEARCH OF A FILTER ON SWITCHABLE CAPACITORS
WITH THREE-PHASE CONTROL OF ELECTRONIC KEYS**

D.V. Kleimenkin, M.A. Sergeenko, A.A. Zhuk, N.N. Prokopenko

Don State Technical University, Rostov-on-Don, Russia

**CLASS AB DIFFERENTIAL STAGE ON COMPLEMENTARY FIELD-
EFFECT TRANSISTORS (CJFET, CCMOS) AND INCLUSION SCHEMES
IN MICRO-POWER HIGH-SPEED OPERATIONAL AMPLIFIERS**

D.V. Kuznetsov, I.A. Alferova, D.V. Kleimenkin, A.V. Bugakova

Don State Technical University, Rostov-on-Don, Russia

**HIGH-SPEED CBJT OPERATIONAL AMPLIFIER WITH AB CLASS
INPUT STAGE**

D.A. Luzhaitsev, A.O. Turov, Yu.A. Miller, D.S. Hohol

*Tomsk State University of Control System and Radioelectronics;
JCS RPC Micran, Tomsk, Russia*

Pavel E. Troyan

Tomsk State University of Control System and Radioelectronics, Tomsk, Russia

DESIGN COMPARING OF KU-BAND POWER AMPLIFIER MMIC

Elena Suvorova

Saint-Petersburg State University of Aerospace Instrumentation, Saint Petersburg, Russia

ALGORITHMS FOR STATIC AND DYNAMIC PLACEMENT OF NETWORK ADMINISTRATORS IN SPACEFIBRE NETWORKS WITH DYNAMIC RECONFIGURATION

A.E. Titov

Southern Federal University, Rostov-on-Don, Russia

D.Y. Denisenko

Don State Technical University; Southern Federal University, Rostov-on-Don, Russia

D.V. Kuznetsov, I.A. Alferova

Don State Technical University, Rostov-on-Don, Russia

HIGH-SPEED CBJT OPERATIONAL AMPLIFIER BASED ON “FOLDED” CASCODE WITH A DIFFERENTIATING TRANSIENT CORRECTION CIRCUIT

A.O. Turov, D.A. Luzhaitsev, Yu.A. Miller, D.S. Hohol

*Tomsk State University of Control System and Radioelectronics;
JSC RPC Micran, Tomsk, Russia*

P.E. Troyan

Tomsk State University of Control System and Radioelectronics, Tomsk, Russia

BUILDING A LIBRARY OF COMPONENTS FOR THE DEVELOPMENT OF MICROWAVE INTEGRATED CIRCUIT SYSTEMS BASED ON 0.5 MICROMETER GALLIUM ARSENIDE TECHNOLOGY

Alexey Vinogradov, Elena Suvorova

Saint-Petersburg State University of Aerospace Instrumentation, Saint Petersburg, Russia

ARCHITECTURES AND DATA TRANSMISSION PROTOCOL FOR SPACEFIBRE – PCIE BRIDGES

A.A. Zhuk, M.A. Sergeenko, E.N. Makarenko, N.N. Prokopenko

Don State Technical University, Rostov-on-Don, Russia

THE METHOD FOR IMPROVING THE HIGH-SPEED OF CLASSICAL AND HIGH-TEMPERATURE OPERATIONAL AMPLIFIERS WITH CURRENT NEGATIVE FEEDBACK

JUNE 04 (10:00 – 13:00)

CHAPTER 9.

INSTRUMENTATION AND INTELLIGENT TRANSPORTATION SYSTEMS

Mikhail Gorodnichev, Grach Mkrtchian, Marina Moseva, Andrey Timchuk

Moscow Technical University of Communications and Informatics, Moscow, Russia

**RESEARCH AND DEVELOPMENT OF A SOUND PATTERN CLASSIFIER
IN COMPLEX URBAN ACOUSTIC ENVIRONMENTS**

A.S. Kostin, N.N. Maiorov

*Saint-Petersburg State University of Aerospace Instrumentation, Saint-Petersburg,
Russia*

**FEATURES OF NAVIGATION OF UNMANNED SYSTEMS IN A CLOSED
WAREHOUSE TO SOLUTION THE MONITORING PROBLEM**

S.V. Kozlov, A.P. Shabanov

*Federal Research Center “Computer Science and Control” Russian Academy
of Sciences, Moscow, Russia*

A.N. Kubankov

Moscow Technical University of Communications and Informatics, Moscow, Russia

**DYNAMIC LINE MANAGEMENT AND CONTROL MODEL IN TRANSPORT
LOGISTICS**

Anastasiia Lipatova, Marina Moseva, Kamil Kharrasov, Mikhail Gorodnichev

Moscow Technical University of Communications and Informatics, Moscow, Russia

**RESEARCHING EFFECTIVE SYSTEMS AND METHODS FOR DETECTING
DROWSINESS**

N.N. Maiorov, M.R. Yazvenko

Saint-Petersburg State University of Aerospace Instrumentation, Saint-Petersburg, Russia

**RESEARCH AND DEVELOPMENT OF AN ALGORITHM FOR MULTI-
PRIORITY FLOWS IN TRANSPORTATION SYSTEMS**

Marina Moseva, Vladimir Lipatov

Moscow Technical University of Communications and Informatics, Moscow, Russia

**RESEARCH AND DEVELOPMENT OF ALGORITHMS FOR IMPROVING
FAULT TOLERANCE IN SDN NETWORKS BASED ON ARTIFICIAL
INTELLIGENCE**

I.S. Nefelov

Moscow Automobile and Road University, Moscow, Russia

V.V. Filatov, V.-A. V. Badakova, D.A. Yudin

State University of Management, Moscow, Russia

INTELLIGENT ADDITIVE TECHNOLOGIES FOR USE IN THE LIFE CYCLE OF AGRICULTURAL MACHINERY

A.M. Valuev

Mechanical Engineering Research Institute named after A.A.Blagonravov of RAS, Moscow, Russia

SOME WAYS OF INFORMATIONAL INSTRUMENTATION FOR ADAPTIVE URBAN TRAFFIC CONTROL BY MONITORING DATA TREATMENT

E.A. Voznesenskii, A.S. Kostin

Saint-Petersburg State University of Aerospace Instrumentation, Saint-Petersburg, Russia

OPTICAL DETERMINATION OF THE POSITION AND ORIENTATION OF VARIOUS OBJECTS IN THREE-DIMENSIONAL SPACE

JUNE 05 (14:00 – 16:00)

**CHAPTER 10.
QUANTUM TELECOMMUNICATIONS**

Roman Shakhovoy

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NTI Center for Quantum Communications, NUST MISIS, Moscow, Russia*

PASSIVE STATE PREPARATION FOR QUANTUM KEY DISTRIBUTION WITH PHASE ENCODING