

**TOMSK STATE UNIVERSITY  
OF CONTROL SYSTEMS AND  
RADIOELECTRONICS  
(TUSUR University)**



**PROGRAM OF THE SIXTEENTH  
INTERNATIONAL  
CONFERENCE ON  
  
ELECTRONIC DEVICES  
AND CONTROL SYSTEMS**

**Tomsk  
November 18 – 20, 2020**

*Dear colleagues!*

The Organizing Committee is pleased to invite you to join the **16th International Conference on Electronic Devices and Control Systems**.

**The 16th International Conference on Electronic Devices and Control Systems** is held on November 18-20, 2020.

All sections will be held online via a video conferencing service. Links to section rooms and start time can be found in the Conference program.

No pre-registration is required. Rooms will open on the day and at the time specified in the Conference program.

Please find all latest information about the Conference at <https://tusur.ru/ru/nauka-i-innovatsii/nauchnye-meropriyatiya-tusura/mezhdunarodnaya-nauchno-prakticheskaya-konferentsiya-elektronnye-sredstva-i-sistemy-upravleniya>

Time limits:

- paper presentation – 10 minutes;
- questions, discussion – 10 minutes.

**We wish you a pleasant and fruitful time at the Conference!**

*Vice-Rector for Research and Innovation,  
Candidate of Sciences in Engineering,  
Associate Professor  
Anton Loschilov*

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## CONFERENCE SECTIONS

<b>N</b>	<b>Name of section</b>	<b>Room URL</b>	<b>Start (Tomsk time)</b>
<b>1</b>	Plenary session	<a href="#">room URL</a>	18-November 20
<b>2</b>	Radio engineering and telecommunication systems	<a href="https://webinar.tusur.ru/b/j7k-tcn-3wm">https://webinar.tusur.ru/b/j7k-tcn-3wm</a>	November 19 (THU) start at 13:00
<b>3</b>	Microwave nanoelectronics. Intelligent design systems, automation of design of electronic devices and systems	<a href="https://webinar.tusur.ru/b/kky-xe4-rku">https://webinar.tusur.ru/b/kky-xe4-rku</a>	November 19 (THU) start at 13:00
<b>4</b>	Nanotechnology in electronics	<a href="https://webinar.tusur.ru/b/vg4-jzk-w97">https://webinar.tusur.ru/b/vg4-jzk-w97</a>	November 19 (THU) start at 11:00
<b>5</b>	Antennas and microwave devices	<a href="https://webinar.tusur.ru/b/ale-4cg-y97">https://webinar.tusur.ru/b/ale-4cg-y97</a>	November 19 (THU) start at 10:00
<b>6</b>	Control devices and methods	<a href="https://webinar.tusur.ru/b/rum-znt-vd2">https://webinar.tusur.ru/b/rum-znt-vd2</a>	November 19 (THU) start at 10:00
<b>7</b>	Nonlinear optics	<a href="https://webinar.tusur.ru/b/vg4-jzk-w97">https://webinar.tusur.ru/b/vg4-jzk-w97</a>	November 19 (THU) start at 11:00
<b>8</b>	Intelligent power electronics and converter equipment	<a href="https://webinar.tusur.ru/b/67n-99n-k2d">https://webinar.tusur.ru/b/67n-99n-k2d</a>	November 19 (THU) start at 10:00
<b>9</b>	Plasma electronics	<a href="https://webinar.tusur.ru/b/9fe-wed-me9">https://webinar.tusur.ru/b/9fe-wed-me9</a>	November 19 (THU) start at 10:00
<b>10</b>	Microwave radiophotonics systems and devices	<a href="https://webinar.tusur.ru/b/vg4-jzk-w97">https://webinar.tusur.ru/b/vg4-jzk-w97</a>	November 19 (THU) start at 11:00
<b>11</b>	Organic and inorganic semiconductor lighting engineering	<a href="https://webinar.tusur.ru/b/cyv-hjp-cfc">https://webinar.tusur.ru/b/cyv-hjp-cfc</a>	November 19 (THU) start at 10:00
<b>12</b>	Electromagnetic compatibility	<a href="https://webinar.tusur.ru/b/2wt-prr-xdm">https://webinar.tusur.ru/b/2wt-prr-xdm</a>	November 18 (WED) c 09:00
<b>13</b>	Automation and optimization of control and information processing systems	<a href="https://webinar.tusur.ru/b/g3n-xyy-p3h">https://webinar.tusur.ru/b/g3n-xyy-p3h</a>	November 19 (THU) c 12:00
<b>14</b>	Information security	<a href="https://bbb2.fb.tusur.ru/b/rnf-3vg-wg4">https://bbb2.fb.tusur.ru/b/rnf-3vg-wg4</a>	November 19 (THU) c 14:00
<b>15</b>	Information technologies in management and decision-making	<a href="https://webinar.tusur.ru/b/zv2-rjv-trm">https://webinar.tusur.ru/b/zv2-rjv-trm</a>	November 19 (THU) start at 10:00
<b>16</b>	Information technologies in education	<a href="https://webinar.tusur.ru/b/zv2-rjv-trm">https://webinar.tusur.ru/b/zv2-rjv-trm</a>	November 19 (THU) start at 10:00
<b>17</b>	Video information technologies and	<a href="https://webinar.tusur.ru">https://webinar.tusur.ru</a>	November 19

	digital television	<a href="#">/b/gfg-wmj-hvn</a>	(THU) start at 10:00
18	Robotics and mechatronics	<a href="https://webinar.tusur.ru/b/7qt-2ne-cww">https://webinar.tusur.ru/b/7qt-2ne-cww</a>	November 18 (WED) c 15:00
19	Design and engineering of web systems and mobile apps	<a href="https://webinar.tusur.ru/b/4ed-6v3-jdv">https://webinar.tusur.ru/b/4ed-6v3-jdv</a>	November 20 (FRI) start at 10:00
20	E-government: business and administration	<a href="https://webinar.tusur.ru/b/zv2-rjv-trm">https://webinar.tusur.ru/b/zv2-rjv-trm</a>	November 19 (THU) start at 10:00
21	Results of Postgraduate and Master Students' Research in the Sphere of Electronics and Control Systems	<a href="https://webinar.tusur.ru/b/uay-fav-4wq">https://webinar.tusur.ru/b/uay-fav-4wq</a>	November 20 (FRI) start at 13:00

### ORGANIZERS

- Ministry of Science and Higher Education of the Russian Federation
- Tomsk State University of Control Systems and Radioelectronics
- Administration of Tomsk region
- Administration of Tomsk
- Tomsk group and student branch of the IEEE
- TUSUR Research Institute of Automatics and Electromechanics
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### PROGRAM COMMITTEE

- Andronov, E. V. – Head of Siberia Office, Agilent Technologies Ltd.;
- Babak, L. I. – Professor, TUSUR Department of Computer Control and Design Systems, Doctor of Sciences in Engineering;
- Belyaev, B. A. – Head of Laboratory of Electrodynamics and Microwave Electronics, Institute of Physics Siberian Branch of the RAS (Krasnoyarsk), Honored Inventor of the Russian Federation, Doctor of Sciences in Engineering, Professor;
- Borovskoy, I. G. – Head of TUSUR Department of Economic Mathematics, Informatics and Statistics, Doctor of Sciences in Physics and Mathematics, Professor;
- Bukreyev, V. G. – Professor, Division for Power and Electrical Engineering, School of Energy & Power Engineering, Tomsk Polytechnic University, Doctor of Sciences in Engineering, Associate Professor;
- Voloshilov, V. B. – Associate Professor, Department of Physics of Vibrations, Faculty of Physics, Moscow State University, Moscow, Candidate of Sciences in Physics and Mathematics;

- Goshin, G. G. – Professor, TUSUR Department of Microwave and Quantum Radio Engineering, Doctor of Sciences in Physics and Mathematics;
- Gazizov T. R. – Head of TUSUR Department of Television and Control, Doctor of Sciences in Engineering, Associate Professor;
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- Zadorin A. S. – Professor of TUSUR Department of Radioelectronics and Data Protection, Doctor of Sciences in Physics and Mathematics, Professor;
- Zarikovskaya, N. V. – Associate Professor of TUSUR Department of Data Processing Automation, Candidate of Sciences in Physics and Mathematics, Associate Professor;
- Kobzev, G. A. – Vice-Rector for International Cooperation of TUSUR University, Candidate of Sciences in Engineering;
- Korikov, A. M. – Professor of TUSUR Department of Automated Control Systems, Doctor of Sciences in Engineering, Professor;
- Kulchin, Yu. N. – Academician of the Russian Academy of Sciences, Corresponding Member of the RAS, Doctor of Sciences in Physics and Mathematics, Professor;
- Malyutin, N. D. – Chief Research Officer of Research Institute of Electrical Communications, Professor of TUSUR Department of Design of Units and Components for Radioelectronic Systems, Doctor of Sciences in Engineering, Professor;
- Melikhov S. V. – Head of the TUSUR Department of Radio Engineering Systems, Doctor of Sciences in Engineering, Professor;
- Noskov V. Ya. – Professor of Department of Radioelectronics and Telecommunications, Institute of Radioelectronics and Information Technology, Ural Federal University (Yekaterinburg), Doctor of Sciences in Engineering;
- Oks, E. M. – Head of TUSUR Department of Physics, Doctor of Sciences in Engineering, Professor;
- Pokrovskaya, E. M. – Head of TUSUR Department of Foreign Languages, Candidate of Sciences in Philosophy, Associate Professor;
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- Senchenko, P. V. – Vice-Rector for Academic Affairs of TUSUR University, Associate Professor of Department of Data Processing Automation, Candidate of Sciences in Engineering, Associate Professor;
- Sidorov, A. A. – Head of TUSUR Department of Data Processing Automation, Candidate of Sciences in Engineering, Associate Professor;
- Sokolov, I. A. – Ioffe Physical-Technical Institute of the RAS (Saint Petersburg), Doctor of Sciences in Physics and Mathematics;
- Sychev A. N. – Professor at the TUSUR Department of Computer Control and Design Systems, Doctor of Sciences in Engineering;
- Titov, V. S – Head of Department of Computer Engineering, South-Western State University, Doctor of Sciences in Engineering, Professor, Honored Researcher of the Russian Federation, Academician of the International Academy of Sciences for Higher Education;
- Tolstik, A. L. – Head of Department of Laser Physics and Spectroscopy, Belarus State University (Belarus), Doctor of Sciences in Physics and Mathematics;
- Troyan, P. E. – Head of TUSUR Department of Physical Electronics, Doctor of Sciences in Engineering, Professor;
- Tuev, V. I. – Head of TUSUR Department of Radioelectronic Technologies and Environmental Monitoring, Doctor of Sciences in Engineering, Professor;
- Cheremoshentsev, S. F. – Head of Department of Automated Design, Kazan National Research Technical University, Doctor of Sciences in Engineering;

- Shandarov, S. M. – Head of TUSUR Department of Electronic Devices, Doctor of Sciences in Physics and Mathematics, Professor;
- Shelupanov A. A. – President of TUSUR University, Director of Institute of System Integration and Security, Chairman of Tomsk Professorate Assembly, Doctor of Sciences in Engineering, Professor;
- Shepelevich, V. V. – Head of Department of Theoretical Physics, Mozyr State Pedagogical University (Belarus), Doctor of Sciences in Physics and Mathematics, Professor;
- Shurygin, Yu. A. – Director of Directorate for Administration and Strategic Development at TUSUR University, Head of TUSUR Department of Computer Control and Design Systems, Doctor of Sciences in Engineering, Professor;
- Hsin-Chin Liu – PhD, Assistant Professor, Department of electrical Engineering. National Taiwan University of Science and Technology (Taiwan).

#### **ORGANIZING COMMITTEE**

- Loschilov, A. G. – Chairman of the Organizing Committee, Vice-Rector for Research and Innovation at TUSUR University, Head of TUSUR Department of Design of Units and Components for Radioelectronic Systems, Candidate of Sciences in Engineering, Associate Professor;
- Medovnik, A. V. – Vice-Chairman of the Organizing Committee, Head of TUSUR Research Administration, Candidate of Sciences in Engineering, Associate Professor;
- Bober, Yu. N. – Engineer at TUSUR Division of Postgraduate Studies;
- Klimov A. S. – Professor at TUSUR Department of Physics, Senior Research Associate at the Laboratory of Plasma Electronics, Doctor of Sciences in Engineering;
- Korotina, T. Yu. – Head of TUSUR Division of Postgraduate Studies, Candidate of Sciences in Engineering;
- Pokrovskaya, E. M. – Head of TUSUR Department of Foreign Languages, Candidate of Sciences in Philosophy, Associate Professor;
- Yurchenkova, E. A. – Leading Engineer at TUSUR Division of Postgraduate Studies, Candidate of Sciences in Chemistry;
- Yarymova I. A. – Head of Division of Publication Activity Development, Candidate of Sciences in Biology.

#### **OBJECTIVES**

- To facilitate exchange of information about high-priority cutting-edge R&D.
- To discuss the contemporary issues of radioelectronics, and theory and practice of control systems.
- To identify the up-and-coming research trends for industries.
- To present new devices, engineering solutions, software products and systems.
- To bring together academic research and industry for development of high-tech products.

### Section 1. Plenary session

room URL <https://tusun.ru/ru/nauka-i-innovatsii/nauchnye-meropriyatiya-tusura/mezhdunarodnaya-nauchno-prakticheskaya-konferentsiya-elektronnye-sredstva-i-sistemy-upravleniya>

1. **Victor Rulevskiy**, Candidate of Sciences in Engineering, Rector of TUSUR University. Welcome address.
2. **Alexander Shovgenin**, Head of Research and Education Programs at Keysight Technologies. Welcome address.

### Section 2. Radio engineering and telecommunication systems.

**Moderators: Sergey Melikhov**, Head of the Department of Radio Engineering Systems, Doctor of Sciences in Engineering. Professor; **Aleksey Anikin**, Associate Professor at the Department of Radio Engineering Systems, Candidate of Sciences in Engineering

November 19 (THU) start at 13:00,

room URL <https://webinar.tusun.ru/b/j7k-tn-3wm>

1. **N. V. Duplishcheva**, Postgraduate student at the Department of Telecommunications and Basic Principles of Radio Engineering, **E. V. Rogozhnikov**, Associate Professor at the Department of Telecommunications and Basic Principles of Radio Engineering, Candidate of Sciences in Engineering, **E. M. Dmitriyev**, Postgraduate student at the Department of Telecommunications and Basic Principles of Radio Engineering, TUSUR University. Digital compensation of a full-duplex data transmission system over power lines.
2. **I. Kanatbekuli**, Master student at the Department of Radio Engineering Systems, **A.S. Kvashnina**, Master student at the Department of Telecommunications and Basic Principles of Radio Engineering, **D.A. Pokamestov**, Associate Professor at the Department of Telecommunications and Basic Principles of Radio Engineering, TUSUR University. Model of a downlink channel in a MIMO-SCMA communication system.
3. **S.V. Kulygin**, Student at the Department 408 "Infocommunications" Moscow Aviation Institute (National Research University), **A.A. Kochkarov**, Chief Specialist at JSC "RTI", Associate Professor at Financial University under the Government of the Russian Federation, Candidate of Sciences in Physics and Mathematics, **V.O. Kazachkov**, Associate Professor at the Department 408 "Infocommunications" MAI, Candidate of Sciences in Engineering, Moscow. Use of MANET and FANET networks for organizing information interaction between unmanned aerial vehicles.
4. **A.S. Kvashnina**, Master student at the Department of Telecommunications and Basic Principles of Radio Engineering, **I. Kanatbekuli**, Master student at the Department of Radio Engineering Systems, **Ya.V. Kryukov**, Associate Professor at the Department of Telecommunications and Basic Principles of Radio Engineering, Candidate of Sciences in Engineering, **D.A. Pokamestov**, Associate Professor at the Department of Telecommunications and Basic Principles of Radio Engineering, Candidate of Sciences in Engineering. 5G NR downlink reference signal generation model.
5. **S. M. Muhamadiev**, Student at the Department of Telecommunications and Basic Principles of Radio Engineering, **E. V. Rogozhnikov**, Associate Professor at the Department of Telecommunications and Basic Principles of Radio Engineering,

*Candidate of Sciences in Engineering, E. M. Dmitriyev, Postgraduate student at the Department of Telecommunications and Basic Principles of Radio Engineering, TUSUR University. Research of the noise immunity of a communication system using chirp spread spectrum modulation.*

6. **K.E. Gaipov**, *Research Associate of. Research Laboratory of the Informatics and Telecommunications Institute, Candidate of Sciences in Engineering, N.A. Shepeta*, *Senior Researcher of Research Laboratory of the Informatics and Telecommunications Institute, Candidate of Sciences in Engineering, G.G. Nazarov*, *Associate Professor, Senior Researcher of Research Laboratory of the Informatics and Telecommunications Institute, Candidate of Sciences in Engineering, Reshetnev Siberian State University of Science and Technology, Krasnoyarsk. Mathematical model for controlling the frequency resource of wireless networks.*

7. **D.O. Balandin**, **A.S. Kvashnina**, *Master students at the Department of Telecommunications and Basic Principles of Radio Engineering, Ya.V. Kryukov*, *Associate Professor at the Department of Telecommunications and Basic Principles of Radio Engineering, Candidate of Sciences in Engineering, D.A. Pokamestov*, *Associate Professor at the Department of Telecommunications and Basic Principles of Radio Engineering, Candidate of Sciences in Engineering, TUSUR University. Modeling of a multiple communication channel using PD-NOMA.*

8. **R.G. Tarasov**, *General Director, V.V. Poselyanov*, *Deputy Chief Engineer, A.S. Vanyutin*, *Lead Process Engineer, Zavod Iskra, Ulyanovsk. Design and manufacture of components and units of radar systems with an internal cooling system using diffusion welding technology.*

9. **S.V. Melikhov**, *Head of the Department of Radio Engineering Systems, Doctor of Sciences in Engineering, Professor, TUSUR University. On the laws and features of the formation of an OFDM radio signal.*

10. **A.S. Anikin**, *Associate Professor at the Department of Radio Engineering Systems, Candidate of Sciences in Engineering, TUSUR University. Error of approximation of the amplitude radiation pattern by the Kotelnikov series.*



**Section 3. Microwave nanoelectronics. Intelligent design systems, automation of design of electronic devices and systems**

**Moderators: Leonid Babak, Professor at the Department of Computer Control and Design Systems, Doctor of Sciences in Engineering, Mikhail Cherkashin, Dean of the Faculty of Computer Systems, Associate Professor at the Department of Computer Control and Design Systems, Candidate of Sciences in Engineering.**

**November 19 (THU) start at 13:00,**

**room URL <https://webinar.tusur.ru/b/kky-xe4-rku>**

1. **E.A. Fedorov**, Postgraduate student at the Department of Computer Control and Design Systems, **F.I. Sheerman**, Head of the Laboratory of Intelligent Computer Systems, Associate Professor at the Department of Computer Control and Design Systems, Candidate of Sciences in Engineering, **A.V. Pomazanov**, Postgraduate student at the Department of Computer Control and Design Systems, **A.A. Kokolov**, Senior Research Associate at the Laboratory of Intelligent Computer Systems, Associate Professor at the Department of Computer Control and Design Systems, TUSUR University. Application of genetic algorithm for calibration of a 6-bit X-band vector-sum MMIC phase shifter with auxiliary correcting DACs based on 0,25  $\mu\text{m}$  SiGe BiCMOS technology.
2. **E.A. Shutov**, **A.V. Pomazanov**, Postgraduate students at the Department of Computer Control and Design Systems, **A.A. Kokolov**, Senior Research Associate at the Laboratory of Intelligent Computer Systems, Associate Professor at the Department of Computer Control and Design Systems, **L.I. Babak**, Professor at the Department of Computer Control and Design Systems, Doctor of Sciences in Engineering, TUSUR University. Development and experimental study of a digital attenuator based on the domestic 0.09  $\mu\text{m}$  CMOS technology.
3. **A.S. Koryakovtsev**, **A.V. Pomazanov**, Postgraduate students at the Department of Computer Control and Design Systems, **A.A. Kokolov**, Senior Research Associate at the Laboratory of Intelligent Computer Systems, Associate Professor at the Department of Computer Control and Design Systems, **E.A. Shutov**, Postgraduate student at the Department of Computer Control and Design Systems, **L.I. Babak**, Professor at the Department of Computer Control and Design Systems, Doctor of Sciences in Engineering, TUSUR University. Experimental study of X-band integrated silicon buffer amplifier based on domestic 90nm CMOS technology.
4. **A.A. Kulakova**, Junior Research Scientist of Engineering Center of Instrument Making, Radio- and Microelectronics, Candidate of Sciences in Engineering, **E.B. Lukyanenko**, Associate Professor, Southern Federal University, Candidate of Sciences in Engineering, Taganrog. Physical models of digital memristor's elements 2NAND, 2NOR.
5. **A.V. Pomazanov**, **A.S. Koryakovtsev**, Postgraduate students at the Department of Computer Control and Design Systems, **A.A. Kokolov**, Senior Research Associate at the Laboratory of Intelligent Computer Systems, Associate Professor at the Department of Computer Control and Design Systems, **E.A. Shutov**, Postgraduate student at the Department of Computer Control and Design Systems, **L.I. Babak**, Professor at the Department of Computer Control and Design Systems, Doctor of Sciences in Engineering, TUSUR University. Design and analysis of X-band 6-bit phase shifter based on domestic 90 nm CMOS.
6. **A.A. Metel**, Student at the Department of Physical Electronics, **A.E. Goryainov**, Associate Professor at the Department of Computer Control and Design Sys-

tems, Candidate of Sciences in Engineering, **I.M. Dobush**, Associate Professor at the Department of Computer Control and Design Systems, Candidate of Sciences in Engineering, **A.S. Salnikov**, Associate Professor at the Department of Physical Electronics, Candidate of Sciences in Engineering, TUSUR University. A simulation algorithm development for monolithic microwave distributed amplifiers in linear mode.

7. **A.E. Goryainov**, Associate Professor at the Department of Computer Control and Design Systems, Candidate of Sciences in Engineering, **T.N. Fayl**, **Yu.A. Novichkova**, Master students at the Department of Computer Control and Design Systems, **A.A. Kalentyev**, Associate Professor at the Department of Computer Control and Design Systems, Candidate of Sciences in Engineering, **A.S. Salnikov**, Associate Professor at the Department of Computer Control and Design Systems, Candidate of Sciences in Engineering, TUSUR University. Use of the genetic algorithm for synthesis of linear integrated microwave amplifiers with distributed amplification.

8. **E.A. Fedorov**, Postgraduate student at the Department of Computer Control and Design Systems, **F.I. Sheerman**, Head of the Laboratory of Intelligent Computer Systems, Associate Professor at the Department of Computer Control and Design Systems, Candidate of Sciences in Engineering, TUSUR University. Polynomial approximation of transmission coefficient and amplitude characteristics of non-linear microwave devices for automation of system calculations.

**Section 4. Nanotechnology in electronics.**

**Section 7. Nonlinear optics.**

**Section 10. Microwave radiophotonics systems and devices.**

**Moderators Pavel Troyan, Head of the Department of Physical Electronics, Doctor of Sciences in Engineering, Professor; Stanislav Shandarov, Head of the Department of Electronic Devices, Doctor of Sciences in Physics and Mathematics, Professor; Anatoliy Zadorin, Professor at the Radioelectronics and Communication Systems, Doctor of Sciences in Physics and Mathematics, Professor**  
**November 19 (THU) start at 11:00,**  
**room URL <https://webinar.tusur.ru/b/vg4-jzk-w97>**

1. **D.V. Bilevich**, Junior Research Associate at the 50ohm Lab, Postgraduate student at the Department of Physical Electronics, **A.S. Salnikov**, Head of the 50ohm Lab, Associate Professor at the Department of Physical Electronics, Candidate of Sciences in Engineering, **A.E. Goryainov**, Associate Professor at the Department of Computer Control and Design Systems, Candidate of Sciences in Engineering, TUSUR University. GaAs HEMT modeling for digital application.
2. **I.E. Lysenko**, Chief Researcher, Doctor of Sciences in Engineering, **N. F. Kidyaev**, Postgraduate student, Researcher, **O. A. Ezhova**, Senior Researcher, Candidate of Sciences in Engineering, Southern Federal University, Taganrog. Calculation of the stiffness of the cross-shaped element of the gyroscope-accelerometer.
3. **E.S. Polyntsev**, Master student, Junior Research Associate at the Laboratory of Integrated Optics and Radio Photonics, **E.V. Erofeev**, Principle Constructor at the Microelectronics Department, Micran (Tomsk), Head of the Laboratory of Integrated Optics and Radiophotonics, Candidate of Sciences in Engineering, TUSUR University. Optical Y-splitters manufacturing process design using optical lithography and sidewall spacer.
4. **I.E. Lysenko**, Chief Researcher, **D.Yu. Sevostyanov**, Postgraduate student, Southern Federal University, Taganrog. Development of mathematical model of the MEMS-accelerometer.
5. **VI. Stepanov**, Student at the Department of Physical Electronics, **A.A. Popov**, Junior Research Associate at the 50ohm Lab, Postgraduate student at the Department of Physical Electronics, **A.S. Salnikov**, Head of the 50ohm Lab, Associate Professor at the Department of Physical Electronics, Candidate of Sciences in Engineering, TUSUR University. An extraction algorithm for GaAs pHEMT nonlinear current source model parameters.
6. **V.N. Davydov**, Professor at the Department of Electronic Devices, Doctor of Sciences in Physics and Mathematics, **O.F. Zadorozhny**, Postgraduate student at the Department of Electronic Devices, TUSUR University. Energy spectrum of LED heterostructures with quantum wells and combined profile.
7. **V.N. Davydov**, Professor at the Department of Electronic Devices, Doctor of Sciences in Physics and Mathematics, **O.F. Zadorozhny**, Postgraduate student at the Department of Electronic Devices, TUSUR University. A series-parallel equivalent scheme of a heterostructure with quantum wells.
8. **V.N. Davydov**, Professor at the Department of Electronic Devices, Doctor of Sciences in Physics and Mathematics, **O.F. Zadorozhny**, Postgraduate student at the Department of Electronic Devices, TUSUR University. Resistive profiling as a method for studying heterostructures with QW.

9. **I.V. Laptev**, Junior Research Associate at the Laboratory of Integrated Optics and Radio Photonics at the Department of Physical Electronics, **V.V. Shadrin**, Master student at the Department of Physical Electronics, **Yu.S. Prikhodko**, Master student at the Department of Physical Electronics, **Yu.S. Zhidik**, Research Associate at the Laboratory of Integrated Optics and Radiophotonics, TUSUR University. Contact device for measuring microwave beam components.
10. **S.A. Sanko**, Postgraduate student at the Department of Physical Electronics, **D.D. Karimbaev**, Head of laboratory No 2 of JSC NIIPP Tomsk, **Yu.S. Zhidik**, Research Associate at the Laboratory of Integrated Optics and Radio Photonics, TUSUR University. Investigation of the spectral sensitivity of a GaAs-based heterostructure photodiode.
11. **A.I. Kazimirov**, Junior Research Associate at The Institute of Atmospheric Optics SB RAS, **I.V. Kulnich**, Candidate of Sciences in Engineering, Research Associate at The Institute of Atmospheric Optics SB RAS, **A.A. Sogomonyants**, Master student at the Department of Electronic Devices, **P.E. Troyan**, Lead Research Associate at the Laboratory of Integrated Optics and Radiophotonics, the Department of Physical Electronics, Head of the Department of Physical Electronics, Doctor of Sciences in Engineering, TUSUR University. Properties of Silicide Tungsten Thin Films Obtained by Magnetron Sputtering of Composite Target.
12. **K.P. Melnik**, Teaching Assistant at the Department of Electronic Devices, TUSUR University, **A.A. Tik**, Chief Technologist LLC "Crystal T", **GI. Shvarzhman**, Technologist LLC "Crystal T", Candidate of Sciences in Engineering, Tomsk. Measurement and formation of the temperature field during the growth of oxide single crystals from solutions-melts.
13. **K.V. Korotkova**, Postgraduate student at the Department of Physical Electronics, **S.V. Smirnov**, Professor, Lead Research Associate at the Laboratory of Integrated Optics and Radio Photonics, the Department of Physical Electronics, TUSUR University. Surface plasmon resonance in nanosized titanium films on sapphire substrates.
14. **A.S. Zadorin**, Professor at the Department of Radioelectronics and Communication Systems, **E.N. Ivanov**, Student at the Department of Radioelectronics and Communication Systems, TUSUR University. Dynamic chaos mode in an optoelectronic microwave oscillator with delayed feedback based on optical fiber.
15. **A.S. Zadorin**, Professor at the Department of Radioelectronics and Communication Systems, **A.O. Kirnos**, Student at the Department of Radioelectronics and Communication Systems, TUSUR University. Quantum key distribution system based on superconducting qubits in quantum computers of the open project IBM Quantum Experience.
16. **O.V. Tertishnaya**, Engineer at the Radiophotonics Laboratory, **I.V. Kulnich**, Research Associate, Candidate of Sciences in Engineering, **A.A. Gulyaeva**, Postgraduate student, **I.I. Kazimirov**, Junior Research Associate, **E.V. Shesterikov**, Head of the Radiophotonics Laboratory, Candidate of Sciences in Engineering, The Institute of Atmospheric Optics SB RAS, Tomsk. Methods for introducing light into waveguide structures.

#### **Section 5. Antennas and microwave devices.**

**Moderators: Gennady Goshin, Professor at the Department of Microwave and Quantum Radio Engineering, Doctor of Sciences in Physics and Mathematics,**

**Professor, Alexander Sychev, Professor at the Department of Computer Control and Design Systems, Doctor of Sciences in Engineering.**

**November 19 (THU) start at 10:00,**

**room URL <https://webinar.tusur.ru/b/ale-4cg-y97>**

1. **V.V. Fisanov**, Lead Research Associate at the Siberian Physico-Technical Institute, Professor at the Department of Radiophysics, National Research Tomsk State University, Doctor of Sciences in Physics and Mathematics, Professor, Tomsk. Principles of limiting absorption and damping in relation to waves in isotropic media and metamaterials.
2. **I.V. Govorun**, Researcher, Research Laboratory of the Institute of Informatics and Telecommunications, Candidate of Sciences in Engineering, **A.M. Serzhantov**, Leading Researcher, Research Laboratory of the Institute of Informatics and Telecommunications, Doctor of Sciences in Engineering, **S.A. Khodenkov**, Leading Researcher, Research Laboratory of the Institute of Informatics and Telecommunications, Reshetnev Siberian State University of Science and Technology, Krasnoyarsk. New construction of the high selectivity strip high pass monolithic filter.
3. **D.V. Fedosov**, General Director, HF Communication, Candidate of Sciences in Engineering, **A.V. Kolesnikov**, Antenna Equipment Engineer, HF Communication, **A.V. Nikolaev**, Head of the Department of Technical Electrodynamics and Antennas (Tedia) of Moscow Technical University of Communications and Informatics (MTUCI), Doctor of Sciences in Engineering, Moscow. Existing and future antenna designs for communication in underground mine workings.
4. **A.N. Sychev**, Professor at the Department of Computer Control and Design Systems, Doctor of Sciences in Engineering, **A.I. Stepanyuga**, **V.A. Bondar**, **K.B.-B. Dagba**, **V.V. Anisimov**, Students at the Department of Computer Control and Design Systems, TUSUR University. RF distributed component design tool for novel radio electronic systems.
5. **A.V. Badin**, Associate Professor at Department of Radioelectronics, Candidate of Sciences in Physics and Mathematics, **V.D. Moskalenko**, Master student at The Department of Radioelectronics, **D.A. Pidotova**, Student at The Department of Radioelectronics, National Research Tomsk State University, Tomsk. Electrophysical Characteristics of Sub-THz Diode with Schottky Barriere.
6. **S.A. Khodenkov**, Leading Researcher, Research Laboratory of the Institute of Informatics and Telecommunications, Candidate of Sciences in Engineering, Associate Professor, **N.A. Shepeta**, Senior Researcher, Research Laboratory of the Institute of Informatics and Telecommunications, Candidate of Sciences in Physics and Mathematics, Associate Professor, **O.V. Dianova**, Engineer, Research Laboratory of the Institute of Informatics and Telecommunications, Reshetnev Siberian State University of Science and Technology, Krasnoyarsk. Microwave band-pass filter.
7. **B.A. Belyaev**, Leading Researcher, Research Laboratory of the Institute of Informatics and Telecommunications, Doctor of Sciences in Engineering, Professor, **S.A. Khodenkov**, Leading Researcher, Research Laboratory of the Institute of Informatics and Telecommunications, Candidate of Sciences in Engineering, Associate Professor, **G.G. Nazarov**, Senior Researcher, Research Laboratory of the Institute of Informatics and Telecommunications, Candidate of Sciences in Engineering, Professor, Reshetnev Siberian State University of Science and Technology, Krasnoyarsk. Microstrip ultra-wideband bandpass filter of the ninth order.

### Section 6. Control devices and methods.

**Moderators:** *Anton Loschilov, Vice-Rector for Research and Innovation at TUSUR University, Head of the Department of Design of Units and Components for Radioelectronic Systems, Candidate of Sciences in Engineering, Alexander Filatov, Professor at the Department of Telecommunications and Basic Principles of Radio Engineering, Doctor of Sciences in Engineering.*

*19 ноября (THU) start at 10:00,*

*room URL <https://webinar.tusur.ru/b/rum-znt-vd2>*

1. **E.R. Ragimov**, Student at the Department of Design of Units and Components for Radioelectronic Systems, **S.A. Artishchev**, Associate Professor at the Department of Design of Units and Components for Radioelectronic Systems, Candidate of Sciences in Engineering, TUSUR University. 3D-printer for manufacturing multilayer printed circuit boards.
2. **T.A. Chepko**, Student at the Department of Design of Units and Components for Radioelectronic Systems, **S.A. Artishchev**, Associate Professor at the Department of Design of Units and Components for Radioelectronic Systems, Candidate of Sciences in Engineering, TUSUR University. Method of fabrication powder for conductive ink.
3. **I.A. Ershov**, Assistant at the Information Security Department, Novosibirsk State Technical University (Novosibirsk), **O.V. Stukach**, Professor, HSE Tikhonov Moscow Institute of Electronics and Mathematics, Higher School of Economics (Moscow), Professor at the Information Security Department, Novosibirsk State Technical University, **I.B. Tsydenzhapov**, Deputy Director of Science, KEEPLINE R&D, **I.V. Sychev**, Director, KEEPLINE R&D, Novosibirsk. Identification of the weak temperature transition in fiber using Tsallis divergence.
4. **D.S. Koptev**, Instructor at the Department of Space Device Engineering and Communication Systems, Southwestern State University, Kursk. Development of a mathematical model of a photoplethysmographic signal recorded in transmitted light.
5. **M.Ya. Marusina**, Associate Professor at the Faculty of Control Systems and Robotics, Doctor of Sciences in Engineering, Professor, **M.E. Kalinkina**, Master student at the Faculty of Control Systems and Robotics, National Research University ITMO (ITMO), Saint Petersburg. Digital visualization of neural sister activities according to functional magnetic resonance imaging.
6. **D.S. Koptev**, Instructor at the Department of Space Device Engineering and Communication Systems, **I.E. Mukhin**, Professor at the Department of Space Device Engineering and Communication Systems, Southwestern State University, Kursk. Pulse oximeter for monitoring peripheral blood oxygen saturation of an aircraft pilot.
7. **A.I. Berdyugin**, Postgraduate student at the Faculty of Radiophysics, **A.V. Badin**, Associate Professor at the Faculty of Radiophysics, Candidate of Sciences in Physics and Mathematics, Associate Professor, **S.N. Zhakupov**, Student at the Faculty of Radiophysics, National Research Tomsk State University, Tomsk. Non-destructive Terahertz imaging of microelectronic devices.
8. **D.I Koval**, Postgraduate student at Department of Information Technology (OIT) School of Engineering Information Technologies and Robotics (ISICR), National Research Tomsk Polytechnic University, Tomsk. Im-

plementation of data collection in the software of the nanosensor test bench.

9. **S.G. Ekhanin**, Professor at the Department of Design of Units and Components for Radioelectronic Systems, Doctor of Sciences in Physics and Mathematics, **A.A. Tomashevich**, the Department of Design of Units and Components for Radioelectronic Systems, **A.V. Kinakh**, **A.S. Stepanova**, Students at the Department of Design of Units and Components for Radioelectronic Systems, TUSUR University. Investigation of the current instability in GaN LEDs at the initial sections of the I - V characteristic depending on the test time.

### **Section 8. Intelligent power electronics and converter equipment.**

**Moderator Valeriy Semenov**, Professor, Deputy Head for Research of TUSUR Department of Industrial Electronics, Candidate of Sciences in Engineering.

November 19 (THU) start at 10:00,

room URL <https://webinar.tusur.ru/b/67n-99n-k2d>

1. **D.B. Borodin**, Junior Research Associate at the Laboratory of Intelligent Power Modulation Systems, the Department of Industrial Electronics, **V.D. Semyonov**, Professor at the Department of Industrial Electronics, Candidate of Sciences in Engineering, TUSUR University. Research of the energy performance of a bidirectional converter based on the modernized Weinberg converter.
2. **T.V. Lobanova**, Master student at the Department of Industrial Electronics, **D.B. Borodin**, Junior Research Associate at the Laboratory of Intelligent Power Modulation Systems, the Department of Industrial Electronics, **V.D. Semyonov**, Professor at the Department of Industrial Electronics, Candidate of Sciences in Engineering, TUSUR University. Design and modeling of a half-bridge resonant LLC-converter.
3. **A.I. Bartenev**, Master student at the Department of Industrial Electronics, **N.S. Legostaev**, Professor at the Department of Industrial Electronics, Candidate of Sciences in Engineering, **V.D. Semyonov**, Professor at the Department of Industrial Electronics, Candidate of Sciences in Engineering, TUSUR University. Method for increasing the energy efficiency of the flyback converter.
4. **A.A. Dubina**, **A.E. Grezeva**, Master students at the Department of Industrial Electronics, **P.A. Strelnikov**, Postgraduate student at the Department of Industrial Electronics, **V.D. Semyonov**, Professor at the Department of Industrial Electronics, Candidate of Sciences in Engineering, TUSUR University. Reverse-pass voltage converter with soft switching of the power transistor key.
5. **M.P. Sukhorukov**, Head of the Laboratory of Digital Control Systems, Space Technology Research Institute, **D.S. Tograeva**, Junior Research Associate at the Laboratory of Digital Control Systems, Space Technology Research Institute, **A.G. Yudin**, Associate Professor at the Department of Computer Control and Design Systems, Director of the Research Institute of Automatics and Electromechanics, Candidate of Sciences in Engineering, **V.M. Rulevskiy**, Rector of TUSUR University, Candidate of Sciences in Engineering, Associate Professor, TUSUR University. Digital control system for power-converting equipment of high-voltage power supply systems for spacecraft.

6. **A.I. Dyomko**, Associate Professor at the Department of Radioelectronics and Electric Power Engineering, Lead Research Associate at the Research and Education Center, Candidate of Sciences in Engineering, **O.Yu. Semenov**, Associate Professor at the Department of Radioelectronics and Electric Power Engineering, Lead Research Associate at the Research and Education Center, Candidate of Sciences in Physics and Mathematics, Polytechnic Institute of Surgut State University, Surgut. Universal power supply for autonomous devices with a long operating time.

### **Section 9. Plasma electronics.**

**Moderator Efim Oks, Head of the Department of Physics,  
Doctor of Sciences in Engineering.**

**November 19 (THU) start at 10:00,**

**room URL <https://webinar.tusur.ru/b/9fe-wed-me9>**

1. **I.Yu. Bakeev**, Associate Professor at the Department of Physics, Candidate of Sciences in Engineering, TUSUR University. Functioning of a hollow cathode glow discharge in the longitudinal magnetic field of a forevacuum plasma electron source.
2. **V.T. Tran**, Postgraduate student at the Department of Physics, **A.S. Klimov**, Professor at the Department of Physics, Doctor of Sciences in Engineering, TUSUR University. Features of beam-plasma treatment of polymers in the forevacuum pressure range.
3. **S.V. Gavrish**, Head of Department of Light Sources, Doctor of Sciences in Engineering, **S.G. Kireev**, Head of Research Laboratory, Scientific and Production Enterprise "Melitta", Ltd, **D.N. Kugushev**, Head of Department of Branch of the Joint Stock Company "Stella - K", **D.Yu. Pugachev**, Deputy Head of Workshop of Light Sources Scientific and Production Enterprise "Melitta", Ltd, Moscow. Study of the temperature field of the electrode of a pulsed xenon gas-discharge radiation source.
4. **K.I. Karpov**, Student at the Department of Electronic Devices, TUSUR University. Dependence of the floating potential of the target irradiated by an electron beam in the pre-vacuum pressure region on the angle of incidence of the electron beam.
5. **K.I. Karpov**, Student at the Department of Electronic Devices, **D.B. Zolotukhin**. Dependence of the floating potential of the target irradiated by an electron beam in the pre-vacuum pressure region on the angle of incidence of the electron beam.
6. **A.V. Kazakov**, Associate Professor at the Department of Physics, Candidate of Sciences in Engineering, **A.S. Kuzmin**, Student at the Department of Physical Electronics, **A.V. Medovnik**, Associate Professor at the Department of Physics, **N.A. Panchenko**, Junior Research Associate at the Department of Physics, TUSUR University. Study of the characteristics of a contracted arc discharge when operating in a pre-vacuum plasma electron source.
7. **A.S. Klimov**, Professor at the Department of Physics, Doctor of Sciences in Engineering, **A.E. Petrov**, **A.A. Poddubnov**, Students, **V.T. Tran**, Postgraduate student at the Department of Physics, TUSUR University. Influence of electron-beam irradiation modes on the distribution of temperature fields in composite ceramics.
8. **A.A. Zenin**, Associate Professor at the Department of Physics, Candidate of Sciences in Engineering, **A.S. Klimov**, Professor at the Department of Physics, Doctor of Sciences in Engineering, TUSUR University. Influence of the mode of electron-beam soldering of metal with ceramics on the composition of the solder joint.



**Section 11. Organic and inorganic semiconductor lighting engineering.**

**Moderator Vasily Tuev, Head of the Department of Radioelectronic Technologies and Environmental Monitoring, Doctor of Sciences in Engineering.**

**November 19 (THU) start at 10:00,**

**room URL <https://webinar.tusur.ru/b/cyv-hjp-cfc>**

1. **A.G. Sainskij, E.V. Shnaider**, Students at the Department of Radioelectronic Technologies and Environmental Monitoring, **V.S. Soldatkin**, Associate Professor at the Department of Radioelectronic Technologies and Environmental Monitoring, Candidate of Sciences in Engineering, TUSUR University. Intelligent semiconductor searchlight for use in conditions of low visibility due to the increased amount of atmospheric aerosols.
2. **Yu.I. Stasenko, E.V. Shnaider**, Students at the Department of Radioelectronic Technologies and Environmental Monitoring, **V.S. Soldatkin**, Associate Professor at the Department of Radioelectronic Technologies and Environmental Monitoring, Candidate of Sciences in Engineering, TUSUR University. Development of a combined LED lamp for general and architectural dynamic lighting.
3. **A.O. Shardina, T.S. Mikhailchenko, L.Sh. Yuldashova**, Students at the Department of Radioelectronic Technologies and Environmental Monitoring, **V.S. Soldatkin**, Associate Professor at the Department of Radioelectronic Technologies and Environmental Monitoring, Candidate of Sciences in Engineering, TUSUR University. Influence of the rate of disinfection of microorganisms in the aquatic environment depending on the source of radiation.
4. **Yu.V. Yulaeva, A.Yu. Khomyakov**, Postgraduate students at the Department of Radioelectronic Technologies and Environmental Monitoring, **V.I. Tuev**, Head of the Department of Radioelectronic Technologies and Environmental Monitoring, Doctor of Sciences in Engineering, TUSUR University. Mathematical Modeling of Luminous Intensity Spatial Distribution of Filiform Illuminant for LED Lamps.
5. **D.B. Tudupova**, Student at the Department of Radioelectronic Technologies and Environmental Monitoring, **V.S. Soldatkin**, Associate Professor at the Department of Radioelectronic Technologies and Environmental Monitoring, Candidate of Sciences in Engineering, **A.O. Shardina**, Student at the Department of Radioelectronic Technologies and Environmental Monitoring, TUSUR University. Influence of exposure to ultraviolet radiation on the similarity of herbal seeds.
6. **N.O. Studenkov, V.O. Kasyanov**, Students at the Department of Radioelectronic Technologies and Environmental Monitoring. Universal charging station for electric vehicles.

**Section 12. Electromagnetic compatibility.**

**Moderator Talgat Gazizov, Head of the Department of Television and Control, Doctor of Sciences in Engineering**

**November 18 (WED) c 09:00,**

**room URL <https://webinar.tusur.ru/b/2wt-prr-xdm>**

1. **A. Alhaj Hasan, E.S. Zhechev**, Postgraduate students at the Department of Television and Control, **T.R. Gazizov**, Associate Professor at the Department of Tel-

*vision and Control, Doctor of Sciences in Engineering, TUSUR University. Evaluation of the radiated emissions of the structure with single modal reservation.*

2. *N.O. Vlasova, Master student, A.O. Belousov, Junior Research Associate at the Research Laboratory of Security and Electromagnetic Compatibility of Radioelectronic Devices, Postgraduate student, Teaching Assistant at the Department of Television and Control, TUSUR University. Parametric optimization of protective structures with a circular cross-section.*

3. *N.V. Bogdanov, Master student at the Department of Television and Control, R.S. Surovtsev, Senior Research Associate at the Research Laboratory of Fundamental Study of Electromagnetic Compatibility, Candidate of Sciences in Engineering, A.V. Nosov, Senior Research Associate at the Research Laboratory of Fundamental Study of Electromagnetic Compatibility, Candidate of Sciences in Engineering, TUSUR University. Influence of changing of meander microstrip line with a passive conductor parameters on the waveform and amplitude of an ultrashort pulse.*

4. *I.A. Ivantsov, Master student at the Department of Television and Control, E.B. Chernikova, Postgraduate student at the Department of Television and Control, A.O. Belousov, Junior Research Associate at the Research Laboratory of Security and Electromagnetic Compatibility of Radioelectronic Devices, Postgraduate student, Teaching Assistant at the Department of Television and Control, TUSUR University. Optimization of an 8-conductor reflection symmetric modal filter of square configuration.*

5. *V.A. Semenyuk, Master student at the Department of Television and Control, A.V. Demakov, Teaching Assistant at the Department of Television and Control, TUSUR University. Measurement of radiated emissions of microcontrollers 1986VE91T.*

6. *A.A. Drozdova, Master student at the Department of Television and Control, M.E. Komnatnov, Associate Professor at the Department of Television and Control, Candidate of Sciences in Engineering, Associate Professor, TUSUR University. Quasi-static analysis of susceptibility to the effects electrostatic discharge of the spacecraft bus bar.*

7. *M.A. Samoylichenko, Postgraduate student at the Department of Television and Control, T.R. Gazizov, Head of the Department of Television and Control, Doctor of Sciences in Engineering, TUSUR University. Modal filter cut out in double-sided circuit board with reduced weight.*

8. *M.A. Inozemcev, Postgraduate student at the Department of Television and Control, TUSUR University. Review of methods for measuring the dielectric permittivity of rocks.*

9. *I.A. Ivantsov, Master student at the Department of Television and Control, E.S. Zhechev, Postgraduate student at the Department of Television and Control, TUSUR University. Multi-criteria optimization of parameters of a four-layer reflection-symmetric modal filter for ESD protection.*

10. *Z.M. Kenzhegulova, Postgraduate student at the Department of Television and Control, R.S. Surovtsev, Associate Professor at the Department of Television and Control, Candidate of Sciences in Engineering, TUSUR University. Analytical models for the time response calculating of a turn of a meander line with asymmetric cross-section.*

11. *R.R. Khazhibekov, Postgraduate student at the Department of Television and Control, M.E. Komnatnov, Associate Professor at the Department of Television and*

*Control, TUSUR University. Simulation of a spiral power bus with two types of current-carrying plate arrangement.*

12. **V.P. Kosteletskii**, *Postgraduate student, Teaching Assistant at the Department of Television and Control, T.R. Gazizov, Head of the Department of Television and Control, Doctor of Sciences in Engineering, Associate Professor, A.M. Zabolotsky, Professor at the Department of Television and Control, Doctor of Sciences in Engineering, TUSUR University. Design of low-mass, high-current modal filter for spacecraft power bus.*

13. **F.F. Idrisov**, *Professor at the Department of Television and Control, Doctor of Sciences in Engineering, A.A. Kvasnikov, Postgraduate student at the Department of Television and Control, TUSUR University. Randomized models of trends in the degradation of radio electronic systems under interference conditions.*

14. **A.M. Lakoza**, *Junior Research Associate at the Research Laboratory of Fundamental Study of Electromagnetic Compatibility, E.S. Zhechev, Junior Research Associate at the Research Laboratory of Fundamental Study of Electromagnetic Compatibility, V.P. Kosteletskii, Junior Research Associate at the Research Laboratory of Fundamental Study of Electromagnetic Compatibility, A.M. Zabolotsky, Professor at the Department of Television and Control, Doctor of Sciences in Engineering, TUSUR University. Experimental Study of a Combined Choke for Common Mode and Differential Noise Filtering.*

15. **P.V. Mikola**, *Master student at the Department of Television and Control, R.S. Surovtsev, Senior Research Associate at the Research Laboratory of Fundamental Study of Electromagnetic Compatibility, Candidate of Sciences in Engineering, TUSUR University. Analysis of the time response in a meander line turn of two segments with different cross-section.*

16. **I.I. Nikolaev**, *Junior Research Associate at the Research Laboratory of Fundamental Study of Electromagnetic Compatibility, M.E. Komnatnov, Senior Research Associate at the Research Laboratory of Security and Electromagnetic Compatibility of Radioelectronic Devices, TUSUR University. Analysis of the per-unit-length parameters of power bus bars with coaxial and spiral cross-sections.*

17. **B.E. Nurkhan**, *Master student at the Department of Television and Control, I.E. Sagiyeva, Postgraduate student at the Department of Television and Control, TUSUR University. The influence of temperature on the characteristics of a microstrip line with grounded side conductors from above.*

18. **I.E. Sagiyeva**, *Postgraduate student at the Department of Television and Control, TUSUR University. Microstrip line with two symmetrical conductors on top, protecting from ultrashort pulses.*

19. **I.E. Sagiyeva**, *Postgraduate student at the Department of Television and Control, D.V. Klyukin, Master student at the Department of Television and Control, TUSUR University. Multivariate analysis of shielded microstrip line by methods of moments and finite elements.*

20. **V.A. Siritsa**, *Research Engineer of the Scientific Research Medical-Biological Engineering Center of High Technologies, Ural Federal University, Yekaterinburg, R.S. Surovtsev, Senior Research Associate at the Research Laboratory of Fundamental Study of Electromagnetic Compatibility, Candidate of Sciences in Engineering, A.V. Nosov, Senior Research Associate at the Research Laboratory of Fundamental Study of Electromagnetic Compatibility, Candidate of Sciences in Engineering, TUSUR University. Ultrashort pulse decomposition in 5 conductor microstrip modal filter and a meander microstrip line connected in cascade.*

21. **A.A. Sobko**, *Postgraduate student at the Department of Television and Control, TUSUR University*. Improvement of the reverse converter with an additional control key for the average power of the Peltier element.
22. **E.S. Varzin**, *Master student*, **A.V. Nosov**, *Senior Research Associate at the Research Laboratory of Fundamental Study of Electromagnetic Compatibility, Candidate of Sciences in Engineering*, **R.S. Surovtsev**, *Senior Research Associate at the Research Laboratory of Fundamental Study of Electromagnetic Compatibility, Candidate of Sciences in Engineering, TUSUR University*. The influence of temperature on transmission lines characteristics.
23. **E.B. Chernikova**, *Postgraduate student at the Department of Television and Control, TUSUR University*. Reflection symmetric meander line of two separate turns with a bridges at different ends of the line.
24. **A.D. Piskarev**, *Student at National Research Nuclear University MEPhI Moscow*. **T.R. Gazizov**, *Head of the Department of Television and Control, TUSUR University, Sirius University, Tomsk*. Quasistatic simulation of the triangular light-weight modal filter.

### **Section 13. Automation and optimization of control and information processing systems.**

**Moderator Anatoliy Korikov**, *Head of the Department of Automated Control Systems, Doctor of Sciences in Engineering.*

*November 19 (THU) c 12:00,*

*room URL <https://webinar.tusur.ru/b/g3n-xyv-p3h>*

1. **S.M. Alforyov**, *Associate Professor at the Department of Automated Control Systems, Candidate of Sciences in Engineering*, **R.E. Bogachev**, **A.S. Bondarenko**, **A.A. Pivovarov**, **D.A. Neverovsky**, *Students at the Department of Automated Control Systems, TUSUR University*. Development of an automated heating control system.
2. **A.S. Pisankin**, **A.Yu. Chepkasov**, *Students*, **A.S. Goncharov**, *Postgraduate student, Division for Information Technology, School of Computer Science & Robotics, National Research Tomsk Polytechnic University, Tomsk*. Forecasting of overheating of the actuator in an industrial manipulator using data mining techniques.
3. **M.Yu. Kataev**, *Professor at the Department of Automated Control Systems, Doctor of Sciences in Engineering*, **I.Yu. Chernyshov**, *Student at the Department of Automated Control Systems, TUSUR University*. Presentation of the results of calculating human movement parameters in the form of a protocol.
4. **D.V. Dubinin**, *Associate Professor at the Department of Radioelectronics and Communication Systems, Candidate of Sciences in Engineering, TUSUR University*, **A.I. Kochegurov**, *Associate Professor at Department of Information Technology (OIT) School of Engineering Information Technologies and Robotics (ISICR), Candidate of Sciences in Engineering, National Research Tomsk Polytechnic University (Tomsk)*, **V.E. Laevski\*** (**V. Geringer**), *Head of Laboratories Automotive Electronics / Energy and Environmental Engineering, Dr., Baden-Wuerttemberg Cooperative State University Ravensburg, Campus Friedrichshafen (Germany)*. Systems development process improvement: Figures of Merit in Systems with Digital Image Processing.
5. **A.A. Kravtsov**, *Student at the Department of Information System Security*, **K.A. Kachalov**, *Student at the Department of Complex Information Security of Computer*

*Systems, I.A. Kryuchkov, Student at the Department of Information System Security, S.S. Kharchenko, Associate Professor at the Department of Information System Security, Candidate of Sciences in Engineering, TUSUR University. Assessment of demand for news sources. Verification of the algorithm for analysis of text information similarity.*

6. *I.V. Soloveva, A.B. Kurakov, B.R. Khayumov, Students at the Department of Automated Control Systems, TUSUR University. Interface design for a program for selecting human gait's parameters from the video stream.*

7. *M.D. Ho, Postgraduate student at the Division for Automation and Robotics, S.V. Muravyov, Professor at the Division for Automation and Robotics, Doctor of Sciences in Engineering, Professor at National Research Tomsk Polytechnic University, Tomsk. Improving the accuracy of the measured value based on multiplicative aggregate measurements.*

8. *A.B. Kurakov, B.R. Khayumov, G.A. Volokitin, Students at the Department of Automated Control Systems, M.Yu. Kataev, Professor at the Department of Automated Control Systems, Doctor of Sciences in Engineering, TUSUR University. Study of the influence of morphological transformations of a binary image of a human figure in the task of controlling gait parameters.*

9. *M.Yu. Kataev, Professor at the Department of Automated Control Systems, Doctor of Sciences in Engineering, A.E. Kohonov, Master student at the Department of Automated Control Systems, TUSUR University. Description of the structure of the program for assessing deviations of the shape of the electrocardiosignal using a neural network approach.*

10. *A.I. Elizarov, Senior Staff Scientist at the Laboratory of Lidar Methods, Candidate of Sciences in Engineering, D.V. Kokarev, Leading Engineer at the Laboratory of Lidar Methods, V. E. Zuev Institute of Atmospheric Optics SB RAS, Tomsk. Methods for evaluating image quality.*

11. *A.A. Moroz, A.B. Kurakov, Students at the Department of Automated Control Systems, TUSUR University. Development of a program for modeling of a human skeleton based on their image.*

12. *D.V. Kruchinin, Associate Professor at the Department of Complex Information Security of Computer Systems, Candidate of Sciences in Physics and Mathematics, Yu.V. Shablya, Instructor at the Department of Complex Information Security of Computer Systems, M. Yu. Perminova, Associate Professor at the Department of Computer Control and Design Systems, Candidate of Sciences in Engineering, TUSUR University. Development of rules for applying compositae to bivariate generating functions.*

13. *V.S. Starshinov, Postgraduate student at the Division for Information Technology, School of Computer Science & Robotics, E.D. Podkaminer, Master student at the Division for Information Technology, School of Computer Science & Robotics, S.G. Tsapko, Associate Professor at the Division for Information Technology, School of Computer Science & Robotics, Candidate of Sciences in Engineering, National Research Tomsk Polytechnic University, Tomsk. Development of an algorithm for automated distribution of spacecraft control sessions between ground service stations.*

14. *M.Yu. Kataev, Professor at the Department of Automated Control Systems, Candidate of Sciences in Engineering, V.V. Ryabukhin, Master student at the Department of Automated Control Systems, TUSUR University. Development of image processing algorithms for UAVs for recognition of agricultural plants.*

15. **A.A. Sogomonyants**, Student at the Department of Electronic Devices, **E.S. Polyntsev**, Student at the Department of Physical Electronics, **I.D. Shabalin**, Student at the Department of Electronic Devices, **E.S. Shandarov**, Head of Laboratory of Robotics and Artificial Intelligence, Senior Instructor at the Department of Electronic Devices, TUSUR University. Increasing the interactive component of electronic educational resources by using social robot.
16. **E.V. Shiropkova**, Teaching Assistant at the Department of Information Technology in the Study of Discrete Structures, **V.A. Shwartsop**, Master Student at the Department of Information Technology in the Study of Discrete Structures, National Research Tomsk State University, Tomsk. Optimizing components of automata networks.
17. **I.G. Yar-Muhamedov**, Senior Research Associate at the Laboratory of Adaptive and Intellectual Systems, Institute of Machine Science and Automation, National Academy of Sciences, Kyrgyz Republic. Linear model for balancing phase loads of the distribution grid.
18. **A.E. Kodorov**, **A.A. Klimov**, **P.E. Pugachev**, **I.Yu. Prokazina**, Students at the Department of Electronic Devices, **E.S. Shandarov**, Head of Laboratory of Robotics and Artificial Intelligence, Senior Instructor at the Department of Electronic Devices, TUSUR University. Virtual robot: expanding the channels of interaction of electronic educational resources with the user.
19. **A.A. Oskolkov**, Postgraduate student at the Department of Welding Production, Metrology and Technology of Material, **D.N. Trushnikov**, Professor at the Department of Automation and Telemechanics, Doctor of Sciences in Engineering, **I.I. Bezukladnikov**, Associate Professor at the Department of Automation and Telemechanics, Candidate of Sciences in Engineering, Perm National Research Polytechnic University, Perm. Temperature control of polymer material during 3D printing.
20. **P.V. Volkov**, Junior Research Associate at TomskNIPINeft, **A.V. Bolshunov**, Postgraduate student at the Division for Oil and Gas Engineering, National Research Tomsk Polytechnic University, Tomsk. Methodological and algorithmic support of an automated experimental installation for removing hydrates in a gas condensate mixture in a pipeline (oral presentation only).

#### **Section 14. Information security.**

**Moderators Alexander Shelupanov, President of TUSUR University, Doctor of Sciences in Engineering, Professor**  
**November 19 (THU) c 14:00,**

**room URL <https://bbb2.fb.tusur.ru/brnf-3vg-wg4>**

1. **A.S. Baranov**, **A.A. Emelina**, **A.E. Konovalov**, Students at the Department of Electronic Systems and Information Security, Samara State Technical University, Samara. Development of a system for monitoring abnormal user actions in the information environment.
2. **D.Sh. Dautov**, Master student at Ufa State Aviation Technical University (USATU), Ufa. Mobile application for exchange and integrity control of data in distributed ledger system.
3. **S.Yu. Danilov**, **Sh.R. Gadadov**, Laboratory Assistants at the KB-4 Department, Russian Technological University (MIREA), Moscow. Protective case for firearms.

4. **Ya.A. Usoltsev, A.A. Konovalov, B.S. Lodonova, Students, A.Yu. Yakimuk, TUSUR University.** Study of the effect hyperparameters neural network to its work and to study the possibility of adversarial attack type at a specific data set.
5. **A.G. Malashina, Postgraduate student at the Department of Computer Security, National Research University Higher School of Economics, Moscow.** A text message recovery algorithm and a mathematical model for distributing the number of meaningful texts.
6. **A.M. Fedotova, A.V. Kurtukova, S.E. Shanshin, Students at the Department of Information System Security, A.S. Romanov, Associate Professor at the Department of Information System Security, Candidate of Sciences in Engineering, TUSUR University.** Development of a technique for determining the authorship of a Russian-language text based on aspect analysis.
7. **S.Z. Ahmad, V.M. Safaryan, Students with a major in Computer Security, North-Caucasus Federal University, Stavropol.** Organization of immit protected data exchange.
8. **D.A. Andreevskih, S.D. Razboynikov , Students at the Department of Complex Information Security of Computer Systems, K.S. Sarin , Associate Professor at the Department of Complex Information Security of Computer Systems, Candidate of Sciences in Engineering, TUSUR University.** Comparison of using local and global features handwritten signatures for user authentication.
9. **A.S. Melman, Postgraduate student at the Department of Information System Security, P.O. Petrov, Student at the Department of Complex Information Security of Computer Systems, A.A. Shelupanov, President of TUSUR University, Director of the Institute of System Integration and Security, Doctor of Sciences in Engineering, Professor, TUSUR University.** An adaptive algorithm for information embedding in compressed JPEG images using the QIM method.
10. **P.M. Shipulin, Postgraduate student, N.V. Nemkov, Student, A.N. Shniperov, Associate Professor, Candidate of Sciences in Engineering, Department of Applied Mathematics and Computer Security, Siberian Federal University, Krasnoyarsk.** Time delay grouping for increasing the noise immunity of covert timing channels.
11. **N.V. Nemkov, Student, P.M. Shipulin, Postgraduate student, A.N. Shniperov, Associate Professor, Candidate of Sciences in Engineering, Department of Applied Mathematics and Computer Security, Siberian Federal University, Krasnoyarsk.** Method for covert data transmission over open communication channels by manipulating network traffic.
12. **M.M. Nemirovich-Danchenko, Professor at the Department of Complex Information Security of Computer Systems, TUSUR University.** Application of the Prony method for biometric data analysis.
13. **V.S. Ageeva, Student at the Department of Information System Security, A.K. Novokhrestov, Associate Professor at the Department of Complex Information Security of Computer Systems, M.A. Kholodova, Student at the Department of Information System Security, TUSUR University.** Information system security assessment.
14. **A.V. Nabieva, Student at the Department of Complex Information Security of Computer Systems, I.R. Polinyaeva, Student at the Department of Information System Security, A.E. Polovnikov, Student at the Department of Complex Information Security of Computer Systems, N.S. Egoshin, Instructor at the Department of Complex Information Security of Computer Systems, TUSUR University.** Security assessment of information flows.

**Section 15. Information technologies in management and decision-making. Section 16. Information technologies in education. Section 20. E-government: business and administration**

**Moderators Pavel Senchenko, Vice-Rector for Academic Affairs at TUSUR University, Associate Professor at the Department of Data Processing Automation, Candidate of Sciences in Engineering; Vyacheslav Dmitriev, Professor at the Department of Computer Control and Design Systems, Doctor of Sciences in Engineering. Professor; Anatoliy Sidorov, Associate Professor at the Department of Data Processing Automation, Candidate of Sciences in Economics.**

**November 19 (THU) start at 10:00,**

**room URL <https://webinar.tusur.ru/b/zy2-rjv-trm>**

1. **A.N. Shovgenin**, Head of Research and Education Programs at Keysight Technologies, Moscow. Remote laboratories based on Keysight Technologies solutions.
2. **A.A. Emelyanov**, Professor at the Department of Information Technologies in Economics and Management, Doctor of Sciences in Economics, Professor, **O.V. Bulygina**, Associate Professor at the Department of Information Technologies in Economics and Management, Candidate of Sciences in Economics, Associate Professor, Branch of National Research University "MPEI" in Smolensk. Selection of NON-factor analysis tools taking into account the Hartley emergence indicator.
3. **E.P. Grabchak**, Director of the Department of the Ministry of Energy of the Russian Federation (Ministry of Energy of Russia), Candidate of Sciences in Economics, **E.L. Loginov**, Professor Russian Academy of Sciences, Head of the Expert and Analytical Service of the Situation and Analytical Center of the Ministry of Energy of Russia (SAC of the Ministry of Energy of Russia), Doctor of Sciences in Economics, Moscow. Digital Doubles as an Early Warning Tool and emergency response management situations at the facilities of the fuel and energy complex.
4. **V.A. Komarov**, Head of Department of Design of Space Systems and Communication Complexes, Information Relaying and Special Purpose, Joint Stock Company Academician M. F. Reshetnev Information Satellite Systems, Candidate of Sciences in Engineering, Zheleznogorsk, **A.V. Sarafanov**, Professor, Department of Enterprise Management Systems, OOO Vitte Consulting (GK I-Teco), Doctor of Sciences in Engineering, Moscow. Methodological basis for design of multi-user distributed measuring and control systems as elements of organizational-technical management system.
5. **E.V. Griva**, **R.S. Kulshin**, **S.V. Konovalov**, Students at the Department of Automated Control Systems, TUSUR University. Development of a chatbot to help identify symptoms, predict and prevent the spread of coronavirus infection.
6. **E.V. Griva**, **R.S. Kulshin**, **S.V. Konovalov**, Students at the Department of Automated Control Systems, TUSUR University. Development of a chatbot for voting for public initiatives and searching for opinion leaders.
7. **S.A. Kuznetsov**, Research Engineer, **A.D. Vilnin**, Programming Engineer, Candidate of Sciences in Engineering, School of Computer Science & Robotics, National Research Tomsk Polytechnic University, Tomsk. An approach to automated search for far-right communities in social networks based on calendar activity.



8. **A.Yu. Kaida**, Postgraduate student at the Department of Information Technologies, **A.O. Savelev**, Associate Professor at the Department of Information Technologies, Candidate of Sciences in Engineering, School of Computer Science & Robotics, National Research Tomsk Polytechnic University, Tomsk. The use of graph visualization in decision support systems for research automation issues.
9. **A.V. Kurutkova**, Student at the Department of Information System Security, **A.S. Romanov**, Associate Professor at the Department of Information System Security, Candidate of Sciences in Engineering, **A.A. Sobolev**, Student at the Department of Information System Security, TUSUR University. Impact of corporate development standards on identification of the author of the source code.
10. **S.Ts. Vandanova**, Student, **T.O. Peremitina**, Associate Professor at the Department of Data Processing Automation, Candidate of Sciences in Engineering, TUSUR University. Comparative analysis of floor visualization software for buildings.
11. **I.G. Yar-Muhamedov**, Associate Professor, Senior Research Associate at the Laboratory of Adaptive and Intellectual Systems, Institute of Machine Science and Automation, National Academy of Sciences, Kyrgyz Republic. Optimization model for time-management.
12. **A.I. Zaborskiy**, Student at the Department of Data Processing Automation, **Yu.P. Ekhlakov**, Professor at the Department of Data Processing Automation, TUSUR University. Development of the Education Resource Platform service.
13. **D.A. Goncharenko**, Student at the Department of Data Processing Automation, TUSUR University. Development of a software package for the SpyIdler system.
14. **S.A. Gordienko**, Student at the Department of Data Processing Automation, TUSUR University. Research of electronic document management systems.
15. **A.S. Stetsko**, **V.A. Goynik**, **V.A. Kuznetsov**, Students at the Department of Automated Control Systems, TUSUR University. Designing a web-based interface in a learning management system.
16. **A.A. Sidorov**, Head of the Department of Data Processing Automation, Candidate of Sciences in Engineering, Associate Professor; **E.I. Kosenko**, Master student at the Department of Data Processing Automation, TUSUR University. Challenges of the digital economy in the context of the COVID-19 pandemic.
17. **V.V. Arzhanov**, Head of Department No. 11 at the Research Institute of Automatics and Electromechanics, Candidate of Sciences in Engineering, **K.V. Arzhanov**, Senior Research Associate of Department No. 11 at the Research Institute of Automatics and Electromechanics, Candidate of Sciences in Engineering, TUSUR University, **V.V. Bezgacheva**, Postgraduate student at National Research Tomsk State University, Tomsk. Digital transformation of enterprises in the Tomsk region: assessment of the level of readiness.
18. **A.D. Ulyanov**, Junior Research Associate at the Laboratory of Object-Oriented Simulation of Information Systems, the Department of Data Processing Automation, **Yu.B. Gritsenko**, Candidate of Sciences in Engineering, Associate Professor at the Department of Data Processing Automation, TUSUR University. Application of the secondary identification method for diagnostics of industrial facilities.

## **Section 17. Video information technologies and digital television.**

**Moderator Mikhail Kuryachiy, Associate Professor at the Department of Television and Control, Candidate of Sciences in Engineering.**

**November 19 (THU) start at 10:00,**

**room URL <https://webinar.tusur.ru/b/gfg-wmj-hvn>**

1. **T.M. Akaeva**, Student at the Department of Television and Control, TUSUR University. Adaptive median filtering for digital images.
2. **N.A. Borodina**, Master student at the Department of Television and Control, TUSUR University. Development of a model for the classification of road signs for their recognition.
3. **G.E. Edel**, Student at the Department of Television and Control, TUSUR University. Deep learning using the TensorFlow library.
4. **M.E. Sukotnova, Ya.K. Karpova**, Students, **V.V. Kapustin**, Associate Professor at the Department of Television and Control, Candidate of Sciences in Engineering, TUSUR University. Methods of localising faces with following identification of a person.
5. **E.S. Chaldina, A.K. Movchan**, Students at the Department of Television and Control, **V.V. Kapustin**, Associate Professor at the Department of Television and Control, Candidate of Sciences in Engineering, **M.I. Kuryachiy**, Associate Professor at the Department of Television and Control, Candidate of Sciences in Engineering, TUSUR University. Calculator of active areas vision tomographic systems.
6. **D.A. Lazareva**, Student at the Department of Television and Control, **V.V. Kapustin**, Associate Professor at the Department of Television and Control, Candidate of Sciences in Engineering, TUSUR University. Algorithms for improving the quality of television images obtained in low-light conditions.
7. **R.E. Makazhanov, M. Nazarbek, K.A. Apevalov**, Master students at the Department of Television and Control, **M.I. Kuryachiy**, Associate Professor at the Department of Television and Control, Candidate of Sciences in Engineering, TUSUR University. Histogram processing of digital images and its implementation in the MATLAB environment.
8. **M. Nazarbek, R.E. Makazhanov, K.A. Apevalov**, Master students at the Department of Television and Control, **M.I. Kuryachiy**, Associate Professor at the Department of Television and Control, Candidate of Sciences in Engineering, TUSUR University. Unsharp masking for image processing in MatLab.
9. **V.A. Semiglazov**, Associate Professor at the Department of Television and Control, Candidate of Sciences in Engineering, **S.V. Serebrennikov**, Master student at the Department of Television and Control, TUSUR University. 3D scanning technologies in education.
10. **A.S. Zakhlebin**, Postgraduate student at the Department of Television and Control, **A.N. Kalibekov**, Master student at the Department of Television and Control, **M.I. Kuryachiy**, Associate Professor at the Department of Television and Control, TUSUR University. Construction of a georeferenced orthophotomap of a terrain section based on images from a helicopter-type UAV TV camera.

**Moderator Yuri Shurygin, Director of Directorate for Administration and Strategic Development at TUSUR University, Head of the Department of Computer Control and Design Systems, Doctor of Sciences in Engineering, Professor.**

**November 18 (WED) c 15:00,**

**room URL <https://webinar.tusur.ru/b/7qt-2ne-cww>**

1. **I.I. Buluyev**, Postgraduate student at Department of Information Technology (OIT) School of Engineering Information Technologies and Robotics (ISICR), National Research Tomsk Polytechnic University, Tomsk. Underwater robot Odyssey: video surveillance system development.
2. **R.V. Sablin, M.D. Zhumabek**, Students at the Department of Computer Control and Design Systems, **V.P. Kotsubinskiy**, Associate Professor at the Department of Computer Control and Design Systems, Candidate of Sciences in Engineering, TUSUR University. A robotic platform equipped with a mechanical manipulator and machine vision.
3. **A.A. Izyumov**, Senior Instructor at the Department of Computer Control and Design Systems, **N.Yu. Khabibulina**, Associate Professor at the Department of Computer Control and Design Systems, **Yu.A. Shurygin**, Director of Directorate for Administration and Strategic Development at TUSUR University. Motion control in a wheeled mobile robot with a manipulator along a curved path with obstacles.

#### **Section 19. Design and engineering of web systems and mobile apps**

**Moderator Natalya Zarikovskaya, Associate Professor at the Department of Data Processing Automation, Candidate of Sciences in Physics and Mathematics, Associate Professor.**

**November 20 (FRI) start at 10:00,**

**room URL <https://webinar.tusur.ru/b/4ed-6v3-jdv>**

1. **Ya.I. Fokina, M.A. Gordienko**, Students at the Department of Information System Security, **S.S. Kharchenko**, Associate Professor at the Department of Information System Security, Candidate of Sciences in Engineering, TUSUR University. Concept of an automated attendance monitoring system.
2. **V.A. Rachis**, Master student at the Department of Information Technologies, National Research Tomsk Polytechnic University, Tomsk. Implementation of the automated information platform of the Internet of things – Micran IoT.
3. **L.S. Shilov**, Student at the Department of Information System Security, **M.I. Vasileva**, Student at the Department of Complex Information Security of Computer Systems, **A.V. Kurtukova**, Student at the Department of Information System Security, **A.S. Romanov**, Associate Professor at the Department of Information System Security, Candidate of Sciences in Engineering, TUSUR University. Software architecture on the system for three-dimensional reconstruction of a human foot shape based on the video flow.
4. **E.R. Kalyuzhny, I.D. Ksendzovsky**, Students, **N.V. Zarikovskaya**, Associate Professor at the Department of Data Processing Automation, TUSUR University. Architecture and technology for the implementation of modern information systems.

**Section 21. Results of Postgraduate and Master Students' Research in the Sphere of Electronics and Control Systems**

*Moderators Elena Pokrovskaya, Head of the Department of Foreign Languages, Candidate of Sciences in Philosophy, Olga Sobolevskaya, Senior Instructor at The Department of Foreign Languages, Elena Shpit, Senior Instructor at the Department of Foreign Languages.*

*November 20 (FRI) start at 13:00,*

*room URL <https://webinar.tusur.ru/b/uay-fav-4wq>*

1. **A.A. Ivanov**, *Postgraduate student, Department of Television and Control, TUSUR. Analytical model for evaluating shielding effectiveness of an enclosure with a partial dielectric cross-section filling.*
2. **E.B. Chernikova**, *Postgraduate student, Department of Television and Control, TUSUR. Modal decomposition of an ultrashort pulse in structures with circular reflection symmetry.*
3. **A.A. Kvasnikov**, *PhD student, Department of Television and Control, TUSUR. Analytical report generation module of the EMC simulation software.*
4. **A.V. Nikonenko**, *PhD student, Physics Department, I.A. Kurzina*, *Doctor of Physical and Mathematical Sciences, Assistant Professor, E.M. Oks*, *Doctor of Engineering Science, Professor, Physics Department, TUSUR. Dependence of an average UFG titanium grain size on processing temperature.*
5. **K.V. Korotkova**, *PhD student, Department of Physical electronics, S.V. Smirnov*, *Doctor of Engineering Sciences, professor and Leading Researcher of the Laboratory of Integrated Optics and Radiophotonics, Department of Physical electronics, TUSUR. Surface plasmon resonance in nanosized titanium films on sapphire substrates (доклад без публикации).*
6. **M.B. Bardamova**, *Lecturer; Junior Research Officer; Postgraduate Student, Department of Complex Information Security of Computer Systems, TUSUR. Binarization of the Shuffled frog leaping algorithm for feature selection in fuzzy classifiers.*
7. **Y.S. Zhechev**, *Postgraduate student, Department of Television and Control, T.R. Gazizov*. *Doctor of Sciences in Engineering, Associate Professor, Department of Television and Control, TUSUR. Two-wire modal filter with a thin passive conductor.*
8. **V.N. Davydov**, *Dr. of Engineering, Prof., Department of Electronic Devices, O.F. Zadorozhny*, *PhD student, Department of Electronic Devices, TUSUR. Energy spectrum rectangular quantum well with staggered profile.*