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MOSCOW AUTOMOBILE AND ROAD CONSTRUCTION STATE TECHNICAL UNIVERSITY (MADI)
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International Scientific Conference

«2025 INTELLIGENT TECHNOLOGIES AND ELECTRONIC DEVICES IN VEHICLE AND ROAD TRANSPORT COMPLEX» (TIRVED-2025)

(IEEE Conference # 67702)

12-14 November 2025

CONFERENCE PROGRAM

Moscow
2025

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CONFERENCE CHAPTERS*

Chapter 1. Advanced digital intelligent technologies, robotic and big data systems, machine learning and artificial intelligence
(*Передовые цифровые интеллектуальные технологии, роботизированные системы и системы больших данных, машинное обучение и искусственный интеллект*)

Chapter 2. Intelligent transport systems and monitoring the state of road network objects
(Интеллектуальные транспортные системы и мониторинг состояния объектов дорожной сети)

Chapter 3. Electronic driver assistance systems. Self-driving cars and electric vehicles
(Электронные системы помощи водителю. Самоуправляемые автомобили и электромобили)

Chapter 4. Advanced technologies and strategies for transportation systems
(Передовые технологии и стратегии для транспортных систем)

Chapter 5. Technologies for management and data exchange in ITS and autonomous vehicle traffic
(Технологии управления и обмена данными в ИТС и беспилотном движении транспортных средств)

Chapter 6. Electronic and computer technologies, modeling in roads and bridges design and construction
(Электронные и компьютерные технологии, моделирование при проектировании и строительстве дорог и мостов)

Chapter 7. Electrical and electronic engineering pedagogy
(Инженерная педагогика в области электроники и электротехники)

Chapter 8. Mathematical modeling of physical processes. Optical technologies and instrumentation
(Математическое моделирование физических процессов. Оптические технологии и приборостроение)

* The reports in the program inside the sections are listed in alphabetical order by the name of the first author. By agreement with the chairman of the section, the order of reports may be changed
(*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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Novikov I.A., *Doctor of Technical Sciences, Associate Professor, Director of the Transport and Technological Institute of BSTU named after V.G. Shukhov*

CONFERENCE SCHEDULE

12 November 2025

Lecture hall MADI (аудитория) 345
14-00 – 18-30

Chapter 1. Advanced digital intelligent technologies, robotic and big data systems, machine learning and artificial intelligence

Section Chairman: M.V. Yashina, *Doctor of Technical Sciences, Cand. physical-mat. Sciences, head. Department "Engineering and Mathematics of Applied Artificial Intelligence Systems" MADI, Member, IEEE*

Lecture hall MADI (аудитория) 703л
11-00 – 15-00

Chapter 4. Advanced technologies and strategies for transportation systems

Section Chairman: A.V. Ostroukh, *Doctor of Technical Sciences, professor, MADI*

(VIRTUAL)
15-00 – 18-00

Chapter 7. Electrical and electronic engineering pedagogy

Section Chairman: S.L. Yablochnikov, *Doctor of Sciences, Professor, Plekhanov Russian University of Economics*

Scientific and Technological Centre of Unique Instrumentation of the RAS
10-00 – 15-00

Chapter 8. Mathematical modeling of physical processes. Optical technologies and instrumentation (Part I)

Section Chairmans: Vitold E. Pozhar, *Doctor of Physical and Mathematical Sciences, Head of Department, Acousto-Optical Information Systems, Scientific and Technological Centre of Unique Instrumentation of the Russian Academy of Sciences*
Vladimir N. Bely, *Doctor of Physical and Mathematical Sciences, Academician of the National Academy of Sciences of Belarus, Head of the Diagnostic Systems Center, Institute of Physics*

13 November 2025

Lecture hall MADI (аудитория) 502н
10-00 – 16-00

Chapter 3. Electronic driver assistance systems. Self-driving cars and electric vehicles

Section Chairman: A.M. Ivanov, *Doctor of Technical Sciences, professor, head. Department "Automobiles", MADI*

Lecture hall MADI (аудитория) 102н
10-00 – 13-00

Chapter 5. Technologies for management and data exchange in ITS and autonomous vehicle traffic

Section Chairman: S.V. Zhankaziev, *Doctor of Technical Sciences, professor, head. Department "Traffic Organization and Safety, Intelligent Transport Systems", MADI*

Lecture hall MADI (аудитория) 415
10-00 – 13-00

Chapter 6. Electronic and computer technologies, modeling in roads and bridges design and construction

Section Chairman: P.I. Pospelov, *Doctor of Technical Sciences, Professor, Head of the Department of Road Surveys and Design, MADI*

14 November 2024

Lecture hall MADI (аудитория) 132
14-00 – 16-30

Chapter 2. Intelligent transport systems and monitoring the state of road network objects

Section Chairman: Yu.E. Vasiliev, *Doctor of Technical Sciences, professor, head. Department "Road Construction Materials and Chemical Technologies", MADI*

November 12, 2025
Lecture hall MADI (аудитория) 345
14-00 – 18-30

CHAPTER 1
ADVANCED DIGITAL INTELLIGENT TECHNOLOGIES, ROBOTIC AND BIG DATA SYSTEMS, MACHINE LEARNING AND ARTIFICIAL INTELLIGENCE

(ПЕРЕДОВЫЕ ЦИФРОВЫЕ ИНТЕЛЛЕКТУАЛЬНЫЕ ТЕХНОЛОГИИ, РОБОТИЗИРОВАННЫЕ СИСТЕМЫ И СИСТЕМЫ БОЛЬШИХ ДАННЫХ, МАШИННОЕ ОБУЧЕНИЕ И ИСКУССТВЕННЫЙ ИНТЕЛЛЕКТ)

CHAIRMEN: M.V. Yashina, *Doctor of Technical Sciences, PhD of Physical and Mathematical Sciences, Head of the Department "Engineering and Mathematics of Applied Artificial Intelligence Systems", MADI, Member IEEE*

1. Irina Dobrynina
Moscow Technical University of Communications and Informatics, Moscow, Russia
ON THE CONSTRUCTION OF THE ROOT CLOSURE OF ONE SUBGROUP IN SOME CLASSES OF GROUPS

2. P. V. Dushkin, V. V. Kremnev, S. S. Khovrenok
Institute of Transport Technologies and Propulsions, Moscow, Russia
AIR-FUEL RATIO CONTROL TECHNIQUE FOR SPARK IGNITION ENGINES BASED ON LOCAL LINEAR MODELS

3. Mikhail Gorodnichev
Moscow Technical University of Communications and Informatics, Moscow, Russia
ON THE PROBLEM OF TRAFFIC FORECASTING USING GRAPH NEURAL NETWORKS AND DYNAMIC ADJACENCY MATRIX

4. Ivan A. Kuteynikov
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia; University of Communications and Informatics, Moscow, Russia
Marina V. Yashina
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia; Moscow Technical University of Communications and Informatics, Moscow, Russia; Moscow Aviation Institute (Research University), Moscow, Russia;
Alexander G. Tatashev
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia; Moscow Technical University of Communications and Informatics, Moscow, Russia;
Anatoliy N. Lebedev, Nina V. Kuzmina
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia;
A HYBRID APPROACH TO TRAFFIC FLOW ANALYSIS: METRIC-BASED ACTIVATION AND NEURAL REFINEMENT IN VIDES 2.0

5. Kamil R. Kharrasov, Vadim M. Borzov, Marina S. Moseva
Moscow Technical University of Communications and Informatics, Moscow, Russia
HYBRID OBJECT DETECTION WITH SEGMENT ANYTHING MODEL INTEGRATION FOR SCALABLE COMPUTER VISION DATA ANNOTATION

6. Sergey Kozyrev, Ksenia Polyantseva
Moscow Technical University of Communications and Informatics, Moscow, Russia
CLIENT-SERVER SOLUTION FOR MONITORING AND ANALYZING ROAD SURFACE DEFECTS

7. A.R. Lakernik, A.M. Raitsin
Moscow Technical University of Communications and Informatics, Moscow, Russia
APPLICATION OF ARTIFICIAL INTELLIGENCE AND OBJECTIVE ASSESSMENT OF STUDENTS' KNOWLEDGE WHEN STUDYING A COURSE OF HIGHER MATHEMATICS

8. Yuri Leokhin, Timur Fatkhulin, Svetlana Dymkova
Moscow Technical University of Communications and Informatics, Moscow, Russia
RESEARCH OF METHODS FOR FORECASTING DYNAMICALLY CHANGING DATA IN SOLVING APPLIED PROBLEMS

9. Marina Moseva, Maksat uulu Samat
Moscow Technical University of Communications and Informatics, Moscow, Russia
DEVELOPMENT OF A METHOD FOR DYNAMIC TUNING OF LEADER-FOLLOWING MODEL PARAMETERS

10. Ksenia Polyantseva, Ernest Latypov
Moscow Technical University of Communications and Informatics, Moscow, Russia
INTELLIGENT ADAPTIVE TRAFFIC LIGHT CONTROL SYSTEM

11. T.D. Potapchenko
Moscow Technical University of Communications and Informatics, Moscow, Russia; Centre for Strategic Planning of FMBA of Russia. Federal State Budgetary Institution "Centre for Strategic Planning and Management of Biomedical Health Risks" of the Federal Medical Biological Agency, Moscow, Russia
F.D. Potapchenko
Moscow Technical University of Communications and Informatics, Moscow, Russia
SHORT-TERM FORECASTING OF TRAFFIC-RELATED NO2 AND PM2.5 CONCENTRATIONS USING TRAFFIC AND WEATHER DATA WITH MACHINE LEARNING METHODS

12. Sergey Simonov, Mikhail Gorodnichev
Moscow Technical University of Communications and Informatics, Moscow, Russia
INTELLIGENT HYBRID CONTROL OF DATA CENTER COOLING SYSTEMS

13. Anton Terentev
Center for Biological Regulation of Pesticide Usage All-Russian Institute of Plan Protection, Saint-Petersburg, Russia;
EARLY WHEAT AND BARLEY RUST DISEASES DIAGNOSTICS USING HYPERSPECTRAL IMAGING

14. Mutaz Abdel Wahed
Faculty of Information Technology Jadara University, Irbid, Jordan
ARTIFICIAL INTELLIGENCE TECHNIQUES FOR CLASSIFICATION OF REGULAR AND IRREGULAR TIRE WEAR

15. Marina V. Yashina, Alexander G. Tatashev
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia; Moscow Technical University of Communications and Informatics, Moscow, Russia;
Anatoly N. Lebedev, Artur A. Artamonov, Danil A. Kucheruk
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia
TRENDS IN THE DEVELOPMENT OF THE THEORY OF DATA PROCESSING AND ARTIFICIAL INTELLIGENCE AND APPLICATIONS IN THE EDUCATIONAL PROCESS

November 12, 2025
Lecture hall MADI (аудитория) 703л
11-00 – 15-00

CHAPTER 4
ADVANCED TECHNOLOGIES AND STRATEGIES FOR TRANSPORTATION SYSTEMS

(АВТОМАТИЗИРОВАННЫЕ ТРАНСПОРТНЫЕ СРЕДСТВА, ИНТЕЛЛЕКТУАЛЬНЫЕ МЕТОДЫ УПРАВЛЕНИЯ И КОНТРОЛЯ)

CHAIRMEN: A.V. Ostroukh, *Doctor of Technical Sciences, professor, MADI*

1. Gasim Abdullaev
Azerbaijan University of Architecture and Construction, Baku, Azerbaijan
PACKAGE CONSTRUCTION TECHNOLOGY OF ROAD NETWORK FACILITIES

2. Damir Bautdinov
The State University of Management, Moscow, Russia
Ramilya Nezhmetdinova
MSTU "STANKIN", Moscow, Russia
Ramil Nezhmetdinov
MSTU "STANKIN", Moscow, Russia
Vladimir Bogdanov
The Moscow HCAC School, Moscow, Russia
STRESS STATE OF AN ELASTIC TRANSVERSAL ISOTROPIC PLATE WEAKENED BY A CIRCULAR HOLE

3. A.M. Borzenkov, A.A. Podberezkin, C.B. Pronin, A.V. Ostroukh
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia
S. A. Kiselev
University of Technology Sydney, Sydney, Australia
INTELLIGENT AUTOMATION OF LOGISTICS CORRIDOR MANAGEMENT BASED ON MACHINE LEARNING AND MULTI-AGENT SYSTEMS

4. N.G. Kuftinova, A.V. Ostroukh, C.B. Pronin, A.A. Podberezkin, M.I. Ismoilov
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia
CREATION OF DIGITAL AGENTS FOR LANGUAGE MODELS OF THE TRANSPORT AND ROAD COMPLEX

5. Maria Y. Karelina
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia; State University of Management, Moscow, Russia
Roman A. Khalturin, Roman O. Sudorgin
State University of Management, Moscow, Russia
Maxim G. Pletnev
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia; State University of Management, Moscow, Russia
Artem V. Podgorny
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia; State University of Management, Moscow, Russia
UPDATING THE CLASSIFICATION OF SERVICE LEVELS OF THE ROAD NETWORK IN THE CONTEXT OF CHANGES IN THE STRUCTURE OF POPULATION MOBILITY

6. Ramil Nezhmetdinov, Ramilya Nezhmetdinova
MSTU "STANKIN", Moscow, Russia
Damir Bautdinov
The State University of Management, Moscow, Russia
Vladimir Bogdanov
The Moscow HCAC School, Moscow, Russia
BUMPER'S STAGES EVOLUTION AS PRECURSORS OF PARADIGM CHANGEOVER IN VEHICLE SAFETY CLASSIFICATION TYPES

7. A.V. Ostroukh, N.G. Kuftinova, A.A. Podberezkin, C.B. Pronin, D.M. Makeev
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia
APPLICATION OF GENERATIVE ARTIFICIAL INTELLIGENCE IN TRANSPORT AND ROAD COMPLEX CONTROL SYSTEMS

8. S.A. Sidnev, L.Y. Krasikova, G.S. Artemeva
Moscow Technical University of Communications and Informatics, Moscow, Russia
JOINT USE OF HIGHWAY INFRASTRUCTURE BY VARIOUS OPERATORS

9. Sergey L. Portnoy, Sergey E. Nikitin
Higher School of Economics, Moscow Institute of Electronics and Mathematics (HSE MIEM) Moscow, Russia
Sergey A. Karasev
MT-INTEGRATION, LLC, Moscow, Russia
Nikita S. Klyuev
Higher School of Economics, Moscow Institute of Electronics and Mathematics (HSE MIEM), Moscow, Russia
TRACKSIDE RAILWAY NETWORK SYSTEM-LEVEL-SIMULATOR DEVELOPMENT

10. Andrey Tikhonyuk, *IEEE Member,* **Sergey Portnoy,** *IEEE Member*
HSE University, Moscow, Russia
ADVANCED COMMUNICATION SECRECY FOR CONNECTED VEHICLES

11. Victor Velichkin
Saint Petersburg Civil Engineering Institute, Saint Petersburg, Russia
Gasim Abdullaev
Azerbaijan University of Architecture and Construction, Baku, Azerbaijan
MATRIX-NETWORK CONSTRUCTION TECHNOLOGY COMPLEX AND UNIQUE COMPLEXES

November 12, 2025
VIRTUAL
15-00 – 18-00

CHAPTER 7

ELECTRICAL AND ELECTRONIC ENGINEERING PEDAGOGY

(ПЕДАГОГИКА В ОБЛАСТИ ЭЛЕКТРОТЕХНИКИ И ЭЛЕКТРОННОЙ ИНЖЕНЕРИИ)

CHAIRMEN: S. L. Yablochnikov, *Doctor of Sciences, Professor,*
Plekhanov Russian University of Economics

1. Tatyana A. Kuzovkova, Maria M. Sharavova, Olga I. Sharavova,
Polina A. Zholtikova
Moscow Technical University of Communication and Informatics, Moscow, Russia
APPLICATION OF THE CONCEPT OF ADVANCED HIGHER EDUCATION IN THE TRAINING OF ELECTRONICS AND ELECTRICAL ENGINEERS

2. A.Y. Kudryashova, I.S. Kretova, A.V. Ermakova
Moscow Technical University of Communication and Informatics, Moscow, Russia
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3. Svetlana N. Maltseva
Moscow Technical University of Communications and Informatics, Moscow, Russia
Anna Y. Pavlova
Russian University of Transport (MIIT), Moscow, Russia
INTEGRATING SOFT SKILLS DEVELOPMENT INTO ENGLISH FOR ENGINEERING THROUGH PROJECT-BASED LEARNING

4. T.M. Mansurov, E. Mansurov
Azerbaijan Technical University, Baku, Azerbaijan
S.L. Yablochnikov
Plekhanov Russian University of Economics, Moscow, Russia;
National Research University "MPEI", Moscow, Russia
M. Jahangirov
Azerbaijan Technical University, Baku, Azerbaijan
K. I. Chizhik
Moscow State University of Civil Engineering, Moscow, Russia
DISTRIBUTED SYSTEM FOR MONITORING THE CONDITION OF ROAD NETWORK OBJECTS

5. K. A. Makhiboroda
College of Justice, Ryazan, Russia
I. O. Yablochnikova
Plekhanov Russian University of Economics, Moscow, Russia;
National University of Science and Technology "MISIS", Moscow, Russia
S. L. Yablochnikov
Plekhanov Russian University of Economics, Moscow, Russia;
National Research University "MPEI", Moscow, Russia
E. A. Avdeeva
Plekhanov Russian University of Economics, Moscow, Russia
ASPECTS OF THE USE OF ARTIFICIAL INTELLIGENCE ELEMENTS IN THE TRAINING OF IT SPECIALISTS

6. Sergei A. Marinin, Elizabeth V. Savchenko, Marina A. Tugova
Volga-Vyatka Branch of Moscow Technical University of Communications and Informatics, Nizhniy Novgorod, Russia
ELECTRONIC PORTFOLIO AS A TOOL FOR MANAGING STUDENTS IN THE TERMS OF EMPLOYMENT IN THE ACTIVITIES OF A UNIVERSITY

7. Tatyana Y. Salutina, Galina P. Platunina, Irina A. Frank
Moscow Technical University of Communication and Informatics, Moscow, Russia
The Impact of Digitalization on Educational Practices and Pedagogical Innovations in **EDUCATIONAL ACTIVITIES IN THE FIELD OF ELECTRICAL ENGINEERING AND ELECTRONICS**

8. Olga I. Sharavova, Polina A. Zholtikova, Maria M. Sharavova
Moscow Technical University of Communication and Informatics, Moscow, Russia
B2B MARKETING IN ELECTRICAL ENGINEERING AND ELECTRONICS: DECISION-MAKING MODELS AND EFFECTIVE CONTENT MARKETING STRATEGIES

9. S. L. Yablochnikov
Plekhanov Russian University of Economics, Moscow, Russia;
National Research University "MPEI", Moscow, Russia
I. O. Yablochnikova
Plekhanov Russian University of Economics, Moscow, Russia;
National University of Science and Technology "MISIS", Moscow, Russia
M. N. Makhiboroda
Institute of Justice of the International Innovation University, Ryazan, Russia;
College of Justice, Ryazan, Russia
D. I. Shlychkow
Moscow State University of Civil Engineering, Moscow, Russia
FEATURES OF SYNTHESIS OF CONTROL SYSTEMS WITH ADDITIVE PARAMETRIC FEEDBACK

November 12, 2025
Scientific and Technological Centre of Unique Instrumentation of the RAS

10-00 – 14-00

CHAPTER 8
MATHEMATICAL MODELING OF PHYSICAL PROCESSES. OPTICAL TECHNOLOGIES AND INSTRUMENTATION

(МАТЕМАТИЧЕСКОЕ МОДЕЛИРОВАНИЕ ФИЗИЧЕСКИХ ПРОЦЕССОВ. ОПТИЧЕСКИЕ ТЕХНОЛОГИИ И ПРИБОРОСТРОЕНИЕ)

CHAIRMENS: Vitold E. Pozhar, *Doctor of Physical and Mathematical Sciences, Head of Department, Acousto-Optical Information Systems, Scientific and Technological Centre of Unique Instrumentation of the Russian Academy of Sciences*
Vladimir N. Bely, *Doctor of Physical and Mathematical Sciences, Academician of the National Academy of Sciences of Belarus, Head of the Diagnostic Systems Center, Institute of Physics*

1. Boris Chichigin
Moscow Power Engineering Institute, Moscow, Russia;
JSC "All-Russian Research Institute for Nuclear Power Plants Operation", Moscow, Russia
Dmitry Malushin, Andrei Shumilin
Moscow Power Engineering Institute, Moscow, Russia
Andrey Kokurov
Central Research Institute of Chermet them. I.P. Bardin line, Moscow, Russia
APPLIED ASPECTS OF DETERMINING THE STRUCTURAL DAMAGE PARAMETERS OF OBJECTS MADE OF DIELECTRIC AND CONDUCTIVE COMPOSITE MATERIALS

2. D.A. Kambur
Perm Federal Research Center of the Ural Branch of RAS, Perm, Russia;
Perm National Research Polytechnic University, Perm, Russia
M.E. Belokrylov
Perm Federal Research Center of the Ural Branch of RAS, Perm, Russia;
ORMS Lab LLC, Perm, Russia
Yu.A. Konstantinov, D. Claude
Perm Federal Research Center of the Ural Branch of RAS, Perm, Russia
E.E. Totmina
Perm National Research Polytechnic University, Perm, Russia
SOFTWARE AND HARDWARE OPTIMIZATION OF AN OPTICAL FREQUENCY DOMAIN REFLECTOMETRY SYSTEM

3. Ildus Sh. Khasanov, Tatyana V. Blagova
Scientific and Technological Centre of Unique Instrumentation of the Russian Academy of Sciences, Laboratory of Terahertz and Infrared Optics, Moscow, Russia
DEMONSTRATION OF THE INFLUENCE OF INTER-PIXEL SPACING IN A TERAHERTZ SPATIAL LIGHT MODULATOR ON THE QUALITY OF GHOST IMAGING

4. A.E. Khoshev, A.V. Fedorov
ITMO University, Saint Petersburg, Russia
MACHINE LEARNING-ENHANCED DIGITAL TWIN FOR PREDICTIVE DYNAMIC INDENTATION ANALYSIS

5. Igor Y. Kinzhagulov
Faculty of Control Systems and Robotics, ITMO University, St. Petersburg, Russia
Tatiana V. Basova
Nondestructive Testing Technology Center, NTC Etalon LLC, St. Petersburg, Russia
INVESTIGATION OF ACOUSTIC EMISSION PARAMETERS TO DIAGNOSE THE COMPONENTS MANUFACTURED BY THE SELECTIVE LASER SINTERING AND DIRECT LASER DEPOSITION

6. Yulia Petronyuk, Elena Khramtsova, Alexey Bogachenkov
Emanuel Institute of Biochemical Physics of RAS, Moscow, Russia;
Scientific and Technological Centre of Unique Instrumentation of the RAS, Moscow, Russia;
Christina Antipova, Ella Uzhakova
Moscow Center of Advanced Studies, Moscow, Russia
Svetlana Vasilieva
M.V. Lomonosov Moscow State University, Moscow, Russia
ULTRASONIC QUANTITATIVE CHARACTERIZATION OF CHITOSAN-BASED SORBENTS

7. Irina V. Reshetnikova, Sergey V. Sokolov
Moscow Technical University of Communications and Informatics, Moscow, Russia;
Don State Technical University, Rostov-on-Don, Russia
Daniil V. Marshakov
Moscow Technical University of Communications and Informatics, Moscow, Russia
ESTIMATION OF THE FIELD OF OPTICAL FLOW VELOCITIES IN MACHINE VISION SYSTEMS BASED ON A REGULARIZED QUADRATIC-DIFFERENTIAL IDENTIFICATION CRITERION

8. Sergey V. Sokolov, Irina V. Reshetnikova
Moscow Technical University of Communications and Informatics, Moscow, Russia;
Rostov State University of Economics, Rostov-on-Don, Russia
Vadim A. Pogorelov
Don State Technical University, Rostov-on-Don, Russia
HIGH-PRECISION POSITIONING OF AIRCRAFT BASED ON THE INTEGRATION OF SATELLITE AND CORRELATION-EXTREME NAVIGATION SYSTEMS

9. Artem T. Turov
Perm National Research Polytechnic University, Perm, Russia;
Perm Federal Research Center, Ural Branch of the Russian Academy of Sciences, Perm, Russia
Mariya A. Konovalova
Perm National Research Polytechnic University, Perm, Russia
Yuri A. Konstantinov, Tatyana N. Lisina
Perm Federal Research Center, Ural Branch of the Russian Academy of Sciences, Perm, Russia
Andrei A. Fotiadi
S.P. Kapitsa Research Institute of Technology, Ulyanovsk State University, Ulyanovsk, Russia
TOWARDS IMPROVING THE PERFORMANCE AND AFFORDABILITY OF DISTRIBUTED FIBER-OPTIC ACOUSTIC SENSORS

November 13, 2025
Lecture hall MADI (аудитория) 502н
10-00 – 16-00

CHAPTER 3
ELECTRONIC DRIVER ASSISTANCE SYSTEMS. SELF-DRIVING CARS AND ELECTRIC VEHICLES

(ЭЛЕКТРОННЫЕ СИСТЕМЫ ПОМОЩИ ВОДИТЕЛЮ. САМОУПРАВЛЯЕМЫЕ АВТОМОБИЛИ И ЭЛЕКТРОМОБИЛИ)

CHAIRMENS: A.M. Ivanov, *Doctor of Technical Sciences, professor, head. Department "Automobiles", MADI*

1. Igor D. Chaikin, Alexander B. Koudrin
Moscow Polytechnic University, Moscow, Russia
Daria A. Makarova, Yury M. Furletov
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia; Moscow Polytechnic University, Moscow, Russia
SOFTWARE TUNING OF A PASSENGER CAR ELECTRONIC ENGINE CONTROL SYSTEM TO IMPROVE ENERGY EFFICIENCY

2. S.A. Chemisov, V.S. Ershov, A.V. Keller, Y.M. Furletov
Moscow Polytechnic University, Moscow, Russia
TEXTUAL ROAD SIGN INTERPRETATION USING LARGE LANGUAGE MODELS

3. Artem S. Dubrovskii, Sergey S. Shadrin, Alexander B. Koudrin
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia; Moscow Polytechnic University, Moscow, Russia
REAL TIME VERIFICATION OF THE MATHEMATICAL MODEL OF A HIGHWAY TRUCK'S FUEL CONSUMPTION IN RELATION TO THE DIGITAL TERRAIN MODEL

4. Ph.K. Dyakov, A.N. Andreev, M.V. Mitrokhina, M.A. Toporkov, E. Ph. Dyakov
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia;
METHODOLOGY FOR COMPARATIVE TESTING OF VEHICLES WITH DIFFERENT POWER SYSTEMS WHEN OPERATING IN DELIVERY SERVICES

11. Patrick A. Onwuka
Moscow Polytechnic University, Moscow, Russia
Sergey S. Shadrin
Moscow Automobile and Road Construction State Technical University (MADI) Moscow, Russia; Moscow Polytechnic University, Moscow, Russia
ENHANCING USER TRUST AND USABILITY IN ELECTRONIC DRIVER ASSISTANCE SYSTEMS FOR AUTONOMOUS VEHICLES

12. N.V. Popov, V.K. Ishutin, A.Y. Kotenyov, V.V. Gaevskiy, A.N. Andreev
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia
DEVELOPMENT OF AN ALGORITHM FOR A DRIVER ASSISTANCE SYSTEM WHEN LEAVING FROM A PARALLEL PARKING SPACE

13. O.B. Popov, T.V. Chernysheva, S.A. Litvin, A.A. Korostelev
Moscow Technical University of Communication and Informatics, Moscow, Russia
INCREASING THE QUALITY OF A COMPACTLY PRESENTED AUDIO BROADCASTING SIGNAL

14. Sergey S. Shadrin, Artem S. Dubrovskii
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia; Moscow Polytechnic University, Moscow, Russia
Andrey M. Ivanov
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia
HYBRID V2X ARCHITECTURE FOR SAFETY IN MIXED URBAN TRAFFIC: INTEGRATION OF AUTONOMOUS VEHICLES, MICROMOBILITY, AND PEDESTRIANS

15. Petr I. Smirnov
Institute of Mechanical Engineering, Energy and Transport, Vologda, Russia; Vologda State University, Vologda, Russia
Boris S. Subbotin
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia; *The Kosygin State University of Russia, Moscow, Russia*
Grigory S. Mazlumyan
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia
Roman A. Khalturin, Roman O. Sudorgin
State University of Management, Moscow, Russia
ADAPTIVE THRESHOLDS FOR DRIVING RISK ASSESSMENT: A BAYESIAN APPROACH INTEGRATING TELEMATICS AND METEOROLOGICAL DATA

16. Boris S. Subbotin
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Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia; State University of Management, Moscow, Russia
Vera V. Silakova
Russian State Agrarian University - Moscow Agricultural Academy, Moscow, Russia
A COMPARATIVE ANALYSIS OF DATA COLLECTION METHODS FOR ORIGIN-DESTINATION MATRIX CONSTRUCTION IN URBAN TRANSPORT PLANNING

17. M.A. Toporkov, Ph.K. Dyakov, A.N. Andreev, M.I. Alexeenkov
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia
MATHEMATICAL METHODS FOR PREDICTING HUMAN BEHAVIOR ON E-SCOOTER

November 13, 2025
Lecture hall MADI (аудитория) 102н
10-00 – 13-00

CHAPTER 5
TECHNOLOGIES FOR MANAGEMENT AND DATA EXCHANGE IN ITS AND AUTONOMOUS VEHICLE TRAFFIC

(ТЕХНОЛОГИИ УПРАВЛЕНИЯ И ОБМЕНА ДАННЫМИ В ИТС И БЕСПИЛОТНОМ ДВИЖЕНИИ ТРАНСПОРТНЫХ СРЕДСТВ)

CHAIRMEN: S.V. Zhankaziev, *Doctor of Technical Sciences, professor, head. Department "Traffic Organization and Safety, Intelligent Transport Systems", MADI*

1. Vadim I. Artemev, Artem A. Kuznetsov, Ilnur I. Nureev, Oleg G. Morozov, *IEEE Senior Member*, **Rustem L. Galiullin**
Kazan National Research Technical University n.a. A.N. Tupolev, Kazan, Russia
ELECTRIC CURRENT COLLECTORS AS SMART FRICTION UNITS OF AUTOMOTIVE SYSTEMS WITH EMBEDDED ADDRESSED FIBER OPTIC SENSORS

2. M. V. Gavrilyuk, A. I. Markarov, A. M. Merkovich, E. A. Shalagina, A. A. Ryzhova
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia
METHODOLOGICAL APPROACHES TO ASSESSING THE LEVEL AND QUALITY OF INFRASTRUCTURE FOR CYCLING AND PERSONAL MOBILITY

3. Bushra Kak
Moscow Technical University of Communications and Informatics, Moscow, Russia
ELECTRON BEAM ION SOURCES: OPERATING PRINCIPLE, TWO STREAM PLASMA INSTABILITY, AND THE PROCESSES OF RADIATIVE RECOMBINATION

4. Artem A. Kuznetsov, Ilnur I. Nureev, Vadim I. Artemiev, Oleg G. Morozov, *IEEE Senior Member*, **Rustem L. Galiullin**
Kazan National Research Technical University n.a. A.N. Tupolev, Kazan, Russia

ELECTRIC MOTOR BRUSHES AS SMART FRICTION UNITS OF AUTOMOTIVE SYSTEMS WITH EMBEDDED ADDRESSED FIBER OPTIC SENSORS

5. Ekaterina A. Lopukhova, Grigory S. Voronkov, Elizaveta P. Topolskaya
Ufa University of Science and Technology, Ufa, Russia
A UNIFIED ANALYTICAL FRAMEWORK FOR SYSTEMATICALLY COMPARING CLASSICAL AND AI APPROACHES IN RADAR SYSTEMS

6. Oleg G. Morozov, *IEEE Senior Member*, **Vadim I. Artemev, Artem A. Kuznetsov, Ilnur I. Nureev, Rustem L. Galiullin**
Kazan National Research Technical University n.a. A.N. Tupolev, Kazan, Russia
CAR BRAKE PADS AS SMART FRICTION UNITS OF AUTOMOTIVE SYSTEMS WITH EMBEDDED ADDRESSED FIBER OPTIC SENSORS

7. A. I. Vorobyev, D. Yu. Morozov, A. S. Yulin, T. V. Vorobyeva
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia
VEHICLE VISUALIZATION AND TRACKING SYSTEM

8. A. V. Zamytskyh, G. S. Korovin, G. A. Lebedev, S. Yu. Pakhomov
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia
PRACTICAL EXAMPLES OF USING HIGHLY AUTOMATED VEHICLES FOR TRANSPORTING MEDIUM-SIZED CARGO IN HIGH-CONFLICT TRANSPORT AND ROAD CONDITIONS

9. S.V. Zhankaziev, A.I. Markarov, M.V. Gavrilyuk, A.M. Merkovich, Yu.A. Korotkova
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia
SYSTEMS FOR MONITORING AND EVALUATING THE DRIVING QUALITY OF USERS OF PERSONAL MOBILITY EQUIPMENT

November 13, 2025
Lecture hall MADI (аудитория) 415
10-00 – 13-00

CHAPTER 6

ELECTRONIC AND COMPUTER TECHNOLOGIES, MODELING IN ROADS AND BRIDGES DESIGN AND CONSTRUCTION

(ЭЛЕКТРОННЫЕ И КОМПЬЮТЕРНЫЕ ТЕХНОЛОГИИ, МОДЕЛИРОВАНИЕ ПРИ ПРОЕКТИРОВАНИИ И СТРОИТЕЛЬСТВЕ ДОРОГ И МОСТОВ)

CHAIRMEN: P.I. Pospelov, *Doctor of Technical Sciences, Professor,*
Head of the Department of Road Surveys and Design, MADI

1. A.A. Aliyeva, *Member, IEEE*
Mingachevir State University, Baku, Azerbaijan
RESEARCH EFFICIENCY OF SERVICE TRAFFIC TRANSMISSION IN MULTISERVICE COMMUNICATION NETWORKS

2. B.G. Ibrahimov, *Member IEEE*
Azerbaijan Technical University, Baku, Azerbaijan;
National Defense University, Baku, Azerbaijan;
Baku Engineering University, Baku, Azerbaijan
RESEARCH QUALITY OF COMMUNICATION IN MULTISERVICE TELECOMMUNICATION NETWORKS

3. Tatiana K. Komarova, Alexey V. Kostsov
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia
Nina T. Dedegkaeva, Astemir M. Tlekhugov, Aslan A. Kortiev
North Caucasus Mining and Metallurgical Institute (STU), Vladikavkaz, Russia
TRANSPORT RESEARCH PARAMETERS ROLE IN ELECTRONIC AND COMPUTER TECHNOLOGIES MODELLING OF STREET AND ROADS DESIGN

4. Alexey V. Kostsov, Tatiana K. Komarova
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia
Alan L. Kortiev, Lidiya K. Gutsunaeva
North Caucasus Mining and Metallurgical Institute (STU), Vladikavkaz, Russia
STUDY OF VEHICLE GAPS AT TRAFFIC LIGHT INTERSECTIONS IN MEDIUM-SIZED CITY

November 14, 2025
Lecture hall MADI (аудитория) 132
14-00 – 16-30

CHAPTER 2
INTELLIGENT TRANSPORT SYSTEMS AND MONITORING THE STATE OF ROAD NETWORK OBJECTS

(ИНТЕЛЛЕКТУАЛЬНЫЕ ТРАНСПОРТНЫЕ СИСТЕМЫ И МОНИТОРИНГ СОСТОЯНИЯ ОБЪЕКТОВ ДОРОЖНОЙ СЕТИ)

CHAIRMEN: Yu.E. Vasiliev, *Doctor of Technical Sciences, Head of the Department "Road Construction Materials and Chemical Technologies", MADI*

1. Maria A. Brezhneva
Small Innovative Enterprise "Monitoring of Roads and Road Technologies ("SIE "MADiDT"), Moscow, Russia
Yuri E. Vasiliev, Gennady G. Yagudaev, Kirill E. Shugaev
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia
Maxim M. Nikitaev
State Budgetary Institution of the City of Moscow "Automobile Roads", Moscow, Russia
DEVELOPMENT OF A METHODOLOGY FOR ACCEPTANCE DIAGNOSTICS OF OBJECTS WITH ASPHALT CONCRETE COATINGS

2. Ilya S. Nefelov, Alexey V. Terentyev, Dmitry S. Taldykin
State University of Management, Moscow, Russia
THE INFLUENCE OF OPERATIONAL AND EXTERNAL FACTORS ON THE CHOICE OF MANUFACTURING TECHNOLOGY FOR AGRICULTURAL MACHINERY PARTS

3. Pavel V. Plotnikov, Gleb I. Tambovtsev, Andrei G. Vladyko, *Member, IEEE*
The Bonch-Bruevich Saint-Petersburg State University of Telecommunications, Saint Petersburg, Russia
AN INTEGRATED APPROACH TO OPTIMIZATION MODELING AND SIMULATION OF V2X SYSTEMS FOR ANALYSIS

4. Andrey Preobrazhenskiy, Yuriy Preobrazhenskiy, Tatyana Avetisyan, Kirill Dubovik
Voronezh institute of high technologies, Voronezh, Russia
THE DEVELOPMENT OF INTELLIGENT COMPONENTS FOR TRANSPORT SYSTEMS MANAGEMENT

5. Sergey V. Varshavskiy, Alexei A. Tsesar
Small Innovative Enterprise "Monitoring of Roads and Road Technologies" (SIE "MADiDT"), Moscow, Russia
Peter I. Lykashchuk, Igor E. Sahakyan, Gennady G. Yagudaev
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia
USING A 2-D LASER TO MEASURE THE TRANSVERSE ROUGHNESS OF THE ROAD SURFACE

6. A.A. Tsesar, S.V. Varshavskiy
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K.E. Shugaev
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia
PROGRAM FOR PROCESSING THE RESULTS OF MEASURING THE LONGITUDINAL ROUGHNESS OF THE ROAD SURFACE

7. Yu.E. Vasiliev, I.E. Sahakyan, P.I. Lykashchuk
Moscow Automobile and Road Construction State Technical University MADI, Moscow, Russia
G.Sh. Malazoni
State Budgetary Institution of the City of Moscow "Automobile Roads", Moscow, Russia
M.A. Solovyov
Small Innovative Enterprise "Monitoring of Roads and Road Technologies" (SIE "MADiDT"), Moscow, Russia
INTELLECTUALIZATION OF THE DIAGNOSTIC DATA PROCESSING ON AN EXPERIMENTAL ROAD SECTION