

IEEE REGION 8, RUSSIA SECTION CAS CHAPTER
IEEE REGION 8, RUSSIA SECTION TEM/GRS/ITSS JT. CHAPTER
MOSCOW AUTOMOBILE AND ROAD CONSTRUCTION STATE TECHNICAL UNIVERSITY (MADI)
INSTITUTE OF RADIO AND INFORMATION SYSTEMS (IRIS)
MEDIA PUBLISHER LTD

International Scientific Conference

**«2022 INTELLIGENT TECHNOLOGIES
AND ELECTRONIC DEVICES IN VEHICLE
AND ROAD TRANSPORT COMPLEX»
(TIRVED-2022)**

(IEEE Conference # 56496)

10-11 November 2022

CONFERENCE PROGRAM

**Moscow
2022**

CONFERENCE ORGANIZERS

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MOSCOW AUTOMOBILE AND ROAD CONSTRUCTION STATE TECHNICAL UNIVERSITY (MADI)

INSTITUTE OF RADIO AND INFORMATION SYSTEMS (IRIS)

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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. Intelligent and digital systems for design, management and monitoring during the construction and operation of road infrastructure

(Интеллектуальные и цифровые системы для проектирования, управления и мониторинга при строительстве и эксплуатации дорожной инфраструктуры)

Chapter 5. Creation and service of highly efficient road-building, airfield and hoisting-and-transport equipment based on information technologies, robotic and mechatronic systems

(Создание и обслуживание высокоэффективного дорожно-строительного, аэродромного и подъемно-транспортного оборудования на основе информационных технологий, робототехнических и мехатронных систем)

Chapter 6. Technology and Engineering Management (management sciences and practices required for defining, implementing, and managing engineering and technology)

(Технологический и инженерный менеджмент)

Chapter 7. Advanced Technologies and Strategies for Transportation Systems

(Передовые технологии и стратегии для транспортных систем)

Chapter 8. Peculiarities of data exchange in cooperative ITS

(Особенности обмена данными в кооперативных ИТС)

Chapter 9. Electrical and electronic engineering pedagogy

(Инженерная педагогика в области электроники и электротехники)

* 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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Pospelov P.I., *Doctor of Technical Sciences, professor, head. Department “Research Methods and Road Design”, MADI*

Solntsev A.A., *professor, head. Department “Operation of motor transport and car service”, MADI*

CONFERENCE SCHEDULE

10 November 2022

09-45 — 10-00 **Registration of participants** (*регистрация участников*)

1-й поток

10-00 — 10-05 **Opening remarks of Dmitry Borisovich Efimenko,
Acting Rector of MADI**
(*вступительное слово и.о. ректора МАДИ
Ефименко Дмитрия Борисовича*)

10-05 — 10-15 **Opening remarks of the conference organizers**
(*вступительное слово организаторов конференции*)

10-15 — 16-00 **Conference chapter 1** (*работа секции 1*)

16-00 — 18-45 **Conference chapter 2** (*работа секции 2*)

2-й поток

10-15 — 13-15 **Conference chapter 3** (*работа секции 3*)

14-00 — 16-15 **Conference chapter 4** (*работа секции 4*)

16-15 — 18-30 **Conference chapter 5** (*работа секции 5*)

11 November 2022

1-й поток

10-00 — 13-30 **Conference chapter n 6** (*работа секции 6*)

14-30 — 15-30 **Conference chapter 9** (*работа секции 9*)

15-45 — 16-00 **Conference results**

2-й поток

10-00 — 12-15 **Conference chapter 7** (*работа секции 7*)

13-00 — 14-45 **Conference chapter 8** (*работа секции 8*)

November 10, 2022

CHAPTER 1 (1-й поток)
**ADVANCED DIGITAL INTELLIGENT TECHNOLOGIES, ROBOTIC
AND BIG DATA SYSTEMS, MACHINE LEARNING
AND ARTIFICIAL INTELLIGENCE**

CHAIRMEN: **M.V. Yashina**, *Doctor of Technical Sciences, PhD of Physical and Mathematical Sciences, Head of the Department “Higher Mathematics”, MADI, Member IEEE*

10-15 – 10-30

V. N. Bogumil, H. M. Eldiba

Moscow automobile and road construction state technical university (MADI), Moscow, Russia

**CRITERIA FOR THE DEVELOPMENT OF A SPATIAL ANALYTICAL MODEL
OF URBAN PASSENGER TRANSPORT ROUTES TO ENSURE THE
MOVEMENT OF ROBOTIC VEHICLES**

10-30 – 10-45

V. A. Demin, D. A. Komkova

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

PLANNING OF COMBINED DELIVERY USING A MULTI-AGENT APPROACH

10-45 – 11-00

**A. Yu. Dunin, E. A. Savastenko, A. A. Savastenko, S. D. Skorodelov,
E. U. Akhmetzhanova**

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

**CONTROL OF OSCILLATORY PROCESS OF THE COMMON RAIL SYSTEM
IN THE HIGH-PRESSURE LINE**

11-00 – 11-15

Grigoriy Fokin (Member IEEE)

The Bonch-Bruевич SPbSUT, Saint Petersburg, Russia

**VEHICLE POSITIONING REQUIREMENTS FOR LOCATION-AWARE
BEAMFORMING IN 5G UDN**

11-15– 11-30

COFFEE BREAK

11-30 – 11-45

D. V. Gadasin, A. V. Shvedov, I. A. Kuzin, D. D. Gadasin

Moscow Technical University of Communications and Informatics, Moscow, Russia

APPLICATION OF CONVOLUTIONAL NEURAL NETWORKS FOR THREE-DIMENSIONAL RECONSTRUCTION OF THE GEOMETRY OF OBJECTS IN THE IMAGE

11-45 – 12-00

S. V. Kozlov (Member IEEE), E. A. Spirina, A. Sh. Khamitova

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

INITIAL PLANNING METHOD FOR SEAMLESS INDOOR WI-FI NETWORKS

12-00 – 12-15

I. A. Kuteynikov

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

DEVELOPMENT OF A SYSTEM «VIDES» FOR MONITORING THE DYNAMICS OF TRAFFIC FLOWS BASED ON THE VIRTUAL DETECTORS METHOD

12-15 – 12-30

N. Yu. Liberovskiy, V. S. Priputin

Moscow Technical University of Communications and Informatics, Moscow, Russia

I. S. Makarenkov

MIREA, Moscow, Russia

FOURTH CUMULANT BLIND SOURCE SEPARATION EFFICIENCY EVALUATION IN THE TASK OF COGNITIVE RADIO

12-30 – 12-45

B. Y. Maktas, I. V. Konin

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

ALTERNATIVE POWER SOURCES ROADSIDE INFRASTRUCTURE

12-45– 14-00

DINNER

14-00 – 14-15

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

Moscow Technical University of Communications and Informatics, Moscow, Russia

ALGORITHM FOR THE COMPLEX DISCRETE COSINE TRANSFORM

14-15 – 14-30

V. V. Sinyavski, A. Yu. Dunin, M. G. Shatrov, I. V. Maksimov, E. U. Akhmetzhanova
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

GENERATION OF A GAS DIESEL ENGINE MODEL FOR ITS ELECTRONIC CONTROL SYSTEM

14-30 – 14-45

E. A. Spirina

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

A ROBUST METHOD FOR ESTIMATING CHANNEL DATA RATE IN SEAMLESS WI-FI NETWORKS OPERATING IN THE ASYNCHRONOUS MODE

14-45 – 15-00

Dmitriy Volgushev, Grigoriy Fokin (Member IEEE)

The Bonch-Bruевич SPbSUT, Saint Petersburg, Russia

SOFTWARE-DEFINED RADIO NETWORK POSITIONING TECHNOLOGY DESIGN. RECEIVER DEVELOPMENT

15-00 – 15-15

A. L. Yakovenko, M. G. Shatrov, L. N. Golubkov, S. S. Kazakov

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

RESEARCH OF THE POSSIBILITIES OF PREDICTING THE STRUCTURE-BORNE NOISE OF A DIESEL ENGINE WHEN CHANGING ITS DESIGN USING MODELING IN THE AVL EXCITE SOFTWARE

15-15 – 15-30

M. V. Yashina (Member IEEE)

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

Moscow Technical University of Communications and Informatics, Moscow, Russia

E. A. Nosov

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

Lomonosov Moscow State University, Moscow, Russia

A. A. Udalov

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

METHODS OF MOBILE MEASUREMENT, DATA COLLECTION AND ANALYSIS OF NOISE NEAR HIGHWAYS

15-30 – 16-00

DISCUSSION AND QUESTIONS

November 10, 2022

CHAPTER 2. (1-й поток)
INTELLIGENT TRANSPORT SYSTEMS
AND MONITORING THE STATE OF ROAD NETWORK OBJECTS

CHAIRMENS: **Yu.E. Vasiliev**, *Doctor of Technical Sciences, Head of the Department*
“Road Construction Materials”, MADI

A.V. Ostroukh, *Doctor of Technical Sciences, Professor of the Department*
“Automated Control Systems”, MADI

16-00 – 16-15

V. S. Artemyev, *Moscow State University of Food Production, Moscow, Russia*

S. L. Yablochnikov, V. A. Kurbatov, *Moscow Technical University of Communications*
and Informatics, Moscow, Russia

M. N. Makchiboroda, *College of Justice, Ryazan, Russia*

Z. E. Tarkhanova, *North Ossetian State University named after Kosta Levanovich*
Khetagurov, Vladikavkaz, Russia

IMPLEMENTATION OF ADAPTIVE CONTROL WITH PARAMETRIC
UNCERTAINTY

16-15 – 16-30

M. A. Fineeva, V. A. Alshin

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

N. S. Mironov, A. Yu. Vasilev, S. V. Varshavskiy

State budgetary Institution of the city of Moscow "Highways", Moscow, Russia

INTELLIGENT ANALYSIS OF THE RESULTS OF BARRIER FENCE
MONITORING

16-30 – 17-00

German Leon, D. S. Koptev

Southwest State University, Kursk, Russia

INFORMATION AND COMMUNICATION SYSTEM FOR AUTOMATIC
DETERMINATION OF THE MOMENT WHEN THE DIVIDING MARKING
LINES OF TRAFFIC LANES IS CROSSED BY A VEHICLE

17-00 – 17-15

A. V. Pomogalova, V. S. Elagin, A. G. Vladyko, *Member IEEE*

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

E. A. Donskov

St. Petersburg Institute for Informatics and Automation of the Russian Academy of
Sciences, Saint Petersburg, Russia

BLOCKCHAIN TECHNOLOGIES FOR VALIDATION OF PRIORITY
VEHICLES IN ITS

17-15 – 17-30
COFFEE BREAK

17-30 – 17-45

V. I. Prusova, M. A. Zhidkova, A. V. Goryunova, V. S. Tsaryova

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

**INTELLIGENT TRANSPORT SYSTEMS AS AN INCLUSIVE MOBILITY
SOLUTION FOR PEOPLE WITH DISABILITIES**

17-45 – 18-00

A. A. Tsesar, S. V. Varshavskiy

SIE "MADiDT", Moscow, Russia

Yu. E. Vasiliev, U. O. Menkina, K. E. Shugaev

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

**A MODEL OF THE DECISION-MAKING PROCESS FOR MANAGING
THE PRODUCTION OF ASPHALT CONCRETE**

18-00 – 18-15

S. V. Varshavskiy, A. A. Tsesar

SIE "MADiDT", Moscow, Russia

Yu. E. Vasiliev, M. A. Fineeva, K. E. Shugaev

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

**ORDER ALLOCATION MODEL FOR THE PRODUCTION OF ASPHALT
CONCRETE MIXTURES**

18-15 – 18-30

Yu. E. Vasiliev, M. A. Fineeva, K. E. Shugaev

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

A. A. Tsesar

SIE "MADiDT", Moscow, Russia

**ANALYSIS OF MONITORING DATA OF THE EXPERIMENTAL SECTION
ON THE MOSCOW RING ROAD**

18-30 – 18-45
DISCUSSION AND QUESTIONS

November 10, 2022

CHAPTER 3. (2-й поток)
ELECTRONIC DRIVER ASSISTANCE SYSTEMS.
SELF-DRIVING CARS AND ELECTRIC VEHICLES

CHAIRMENS: **A.M. Ivanov**, *Doctor of Technical Sciences, Head of the Department*
"Cars" MADI

S.S. Shadrin, *Doctor of Technical Sciences, Prof. of the Department*
"Cars" MADI

10-15 – 10-30

O. N. Didmanidze, E. P. Parlyuk, R. S. Fedotkin, V. A. Kryuchkov

Russian State Agrarian University – Moscow Timiryazev Agricultural Academy, Moscow, Russia

D. V. Antonov

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

PROBLEMS AND PROSPECTS OF AGRICULTURAL TRACTORS
WITH HYBRID AND ELECTRIC DRIVETRAIN CREATING

10-30 – 10-45

Yu. M. Furletov, A. M. Ivanov, S. S. Shadrin, M. A. Toporkov

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

SOUND SOURCE DIRECTION OF ARRIVAL ESTIMATION
FOR AUTONOMOUS DRIVING APPLICATIONS

10-45 – 11-00

A. V. Grishin, A. R. Asoyan, A. A. Solntsev, V. V. Guly, O. V. Fediushkina

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

ENSURING THE OPERATION OF ELECTRIC BUS BATTERIES
IN THE OPTIMAL TEMPERATURE RANGE

11-00 – 11-15

V. V. Guly, O. V. Fediushkina, S. D. Shagunov

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

ANALYSIS OF FACTORS AFFECTING THE RESOURCE OF ELECTRIC
VEHICLE ENERGY STORAGE SYSTEMS

11-15– 11-30
COFFEE BREAK

11-30 – 11-45

A. M. Ivanov, A. N. Andreev, Ph. K. Dyakov, N. V. Popov, A. I. Kalinin

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

POLLUTION PRACTICAL RESEARCH OF ADAPTION CRUISE CONTROL SYSTEM RADAR DURING WINTER USAGE CONDITION

11-45– 12-00

M. P. Malinovsky

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

ELEMENTS OF ON-BOARD DIAGNOSTICS OF VEHICLES WITH VARIOUS AUTOMATION LEVELS BY ITERATIVE FORECASTING METHOD

12-00 – 12-15

S. S. Shadrin, A. M. Ivanov, D. A. Makarova

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

METHODS OF PARAMETER VERIFICATION AND SCENARIO GENERATION DURING VIRTUAL TESTING OF HIGHLY AUTOMATED AND AUTONOMOUS VEHICLES

12-15 – 12-30

K. M. Sidorov, A. G. Grishchenko, R. V. Mironov, B. N. Sidorov, N. S. Volkov

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

RESEARCH TEST RESULTS OF LOW VOLTAGE ELECTRIC TRACTION DRIVE FOR COMMERCIAL ELECTRIC VEHICLE

12-30 – 12-45

A. I. Vorobyev, A.V. Zamytskih, N. S. Golubchenko, T. V. Vorobyeva, D. Yu. Morozov

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

ENSURING THE ACCURACY OF DIGITAL ROAD MODEL DATA TO INCREASE SITUATIONAL AWARENESS

12-45– 13-00

A. A. Solntsev, V. A. Maksimov, V. M. Evarestov, V. T. Nguyen

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

IMPROVING THE EFFICIENCY OF ELECTRIC BUSES IN A CITY TRANSPORT COMPANY

13-00– 13-15

A. R. Asoyan, A. A. Solntsev, L. L. Zimanov, A. Y. Chekanov

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

Yu. O. Glushkova

Saratov State Technical University, Saratov, Russia

**INDICATORS OF TROLLEYBUS OPERATION TAKING INTO ACCOUNT
THE ENVIRONMENTAL FACTOR**

13-15– 14-00

DINNER

November 10, 2022

CHAPTER 4. (2-й поток)

**INTELLIGENT AND DIGITAL SYSTEMS FOR DESIGN, MANAGEMENT
AND MONITORING DURING THE CONSTRUCTION AND OPERATION
OF ROAD INFRASTRUCTURE**

CHAIRMENS: P.I. Pospelov, *Doctor of Technical Sciences, Head of the Department
“Survey and Design of Roads”, MADI*

V.N. Boikov, *Head of the Department “Geodesy and Geoinformatics”,
Associate Professor MADI*

14-00 – 14-15

G. S. Belyakov

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

**OPTIMIZING THE DEVELOPMENT OF THE ROAD NETWORK:
NEW APPROACH**

14-15 – 14-30

V. I. Dankovtsev, N. V. Toutova, A. S. Vorozhtsov, I. A. Andreev

Moscow Technical University of Communications and Informatics, Moscow, Russia

MULTI-CRITERIA APPLICATION PLACEMENT IN FOG COMPUTING

14-30 – 14-45

T. K. Komarova

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

**IMPROVING THE DIGITAL MODELING QUALITY OF UNSIGNALIZED
INTERSECTIONS EQUIPPED WITH A PEDESTRIAN CROSSING**

14-45 – 15-00

A. V. Kostsov

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

**PROGRAMMING OF TRAFFIC LIGHT OBJECTS AT THE ENTRANCES
OF URBAN FREEWAYS**

15-10 – 15-15

V. S. Nadezhdin, I. V. Demyanushko, N. E. Surkova, B. T. Tavshavadze,

L. F. Samigullin

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

15-15 – 15-30

Sergey Sidnev, Galina Artemeva, Liudmila Krasikova

Moscow Technical University of Communications and Informatics, Moscow, Russia

**THE CHOICE OF TECHNOLOGY FOR THE CONSTRUCTION
OF FIBER-OPTIC COMMUNICATION LINES ALONG RAILWAYS
AND HIGHWAYS**

15-30 – 15-45

V. V. Ushakov, M. G. Goryachev, S. V. Lugov, S. M. Dmitriev, V. N. Komissarov

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

**INFORMATIONAL MODEL FOR CALCULATING ROAD SURFACE LIFE
AND REPAIRS AND THE RATIONAL FINANCING THEREOF**

15-45 – 16-00

M. R. Yakimov

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

**DIGITAL BASIS FOR THE DEVELOPMENT OF AN EFFICIENT ROUTE
NETWORK OF PUBLIC TRANSPORT IN CITIES**

16-00 – 16-15

DISCUSSION AND QUESTIONS

November 10, 2022

CHAPTER 5. (2-й поток)

**CREATION AND SERVICE OF HIGHLY EFFICIENT ROAD-BUILDING,
AIRFIELD AND HOISTING-AND-TRANSPORT EQUIPMENT BASED
ON INFORMATION TECHNOLOGIES, ROBOTIC AND MECHATRONIC
SYSTEMS**

CHAIRMENS: *G.V. Kustarev, PhD, Head of the Department “Road Building
Machines” MADI*

*A.V. Ilyukhin, Doctor of Technical Sciences, Head of the Department
“Automation of production processes” MADI*

16-15 – 16-30

A. I. Dotsenko, G. V. Kustarev, N. M. Andryukhov

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

**PNEUMATIC WASTE COLLECTION SYSTEM USING INTELLIGENT
SYSTEMS AS A MEANS OF IMPROVING THE URBAN ENVIRONMENT**

16-30 – 16-45

P. S. Mikheev, I. V. Demiyanyushko, I. A. Karpov, O. V. Titov

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

**IMPACT OF MECHANICAL PROPERTIES OF STEEL ON THE ENERGY
ABSORPTION OF HONEYCOMB FOR TRUCK MOUNTED ATTENUATORS
AND CRASH CUSHIONS**

16-45 – 17-00

I. S. Nefelov, A. P. Pavlov, A. Yu. Konoplin, V. V. Guly

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

**EVALUATION OF THE INFLUENCE OF NEGATIVE TEMPERATURES
ON THE PROPERTIES OF PARTS FROM POLYMERIC COMPOSITE
MATERIALS WITH DIFFERENT TYPES OF POST PROCESSING**

17-00 – 17-15

A. M. Pogonina, S. A. Pavlov, N. M. Andryukhov

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

**INVESTIGATION OF TRAILED EQUIPMENT OF A MACHINE FOR
INSTALLING FLEXIBLE CABLE FENCING ON ROADS USING
INTELLIGENT CONTROL SYSTEMS AND MATHEMATICAL MODELING**

17-15 – 17-30

I. V. Safyanov, Kh. A. Dzhabrailov, R. A. Gematudinov

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

STUDY OF THE POSSIBILITY OF USING LANGATATE AND LANGASITE CRYSTALS AS A SENSING ELEMENT IN VEHICLE WEIGHT SENSORS IN DYNAMICS

17-30 – 17-45

V. S. Seleznev, V. I. Marsov, A. V. Iluhin, Kh. A. Dzhabrailov, L. Yu. Isaeva

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

COMBINED ROAD VEHICLES WITH THE POSSIBILITY OF CHANGING THE COMPOSITION OF THE ANTI-ICING MATERIAL

17-45 – 18-00

M. E. Yahimovich, R. A. Gematudinov, K. A. Dzhabrailov, A. V. Tarasova, P. A. Selezneva

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

INVESTIGATION OF THE EFFICIENCY OF DETECTING ROAD DEFECTS USING NEURAL NETWORKS

18-00 – 18-15

V. A. Zorin, A. A. Pegachkov

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

FORECASTING THE TECHNICAL CONDITION AND RISKS OF CONSTRUCTION ENGINEERING BASED ON OPERATIONAL MONITORING OF DIAGNOSTIC PARAMETERS

18-15 – 18-30

DISCUSSION AND QUESTIONS

November 11, 2022

CHAPTER 6. (1-й поток)

TECHNOLOGY AND ENGINEERING MANAGEMENT (MANAGEMENT SCIENCES AND PRACTICES REQUIRED FOR DEFINING, IMPLEMENTING, AND MANAGING ENGINEERING AND TECHNOLOGY)

CHAIRMENS: **M.Yu. Karelina**, *Doctor of Technical Sciences, Doctor of Pedagogical Sciences, Vice-Rector for Research, Head of the Department “Machine Parts and Mechanism Theory”, MADI*

V.V. Filatov, *PhD, Assistant professor of the Department “Machine Parts and Mechanism Theory”, MADI*

10-00 – 10-15

S. A. Eruslankin, P. V. Fursova, A. E. Olkhovsky, A. N. Sova

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

METHODOLOGY FOR EVALUATING THE CHARACTERISTICS OF A THREE-PHASE INVERTER WHEN IT IS POWERED BY A BATTERY

10-15 – 10-30

V. V. Filatov, A. V. Sukhodolya, A. A. Akulov, V. S. Ershov, D. S. Taldykin

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

EFFICIENCY CRITERIA FOR THE OPERATION OF GROUND VEHICLES IN THE DYNAMIC SYSTEM OF TRANSPORTATION MANAGEMENT

10-30 – 10-45

S. N. Goncharenko

National University of Science and Technology MISIS, Moscow, Russia

A. M. Ivakhnenko

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

OPTIMIZATION OF ORE CONCENTRATE TRANSPORTATION INDICATORS OF A MINING ENTERPRISE BASED ON A LOGISTIC ANALYSIS OF ALTERNATIVE OPTIONS FOR ORGANIZING A TRANSPORTATION SYSTEM

10-45 – 11-00

E. I. Makarenko, L. A. Sonina, O. V. Khlopkova

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

MANAGEMENT PRACTICES FOR THE INTRODUCTION OF ADVANCED PRODUCTION TECHNOLOGIES

11-00 – 11-15

Asiya Kaberova

Moscow Technical University of Communications and Informatics, Moscow, Russia

**RESTRUCTURING AND REENGINEERING AS A BASIS
FOR DIGITALIZATION OF BUSINESS PROCESSES
OF A TELECOMMUNICATIONS OPERATOR**

11-15 – 11-30

M. Yu. Karelina, B. S. Subbotin

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

P. I. Smirnov

Institute of Mechanical Engineering, Energy and Transport Vologda State University, VOGU, Vologda, Russia

**THE IMPACT OF OPERATING CONDITIONS ON THE MAINTENANCE
INTERVAL OF TRUCKS EQUIPPED WITH A COMPUTERIZED
MAINTENANCE MANAGEMENT SYSTEM**

11-30– 11-45

COFFEE BREAK

11-45 – 12-00

V. N. Kozlovsky

Samara State Technical University, Samara, Russia

D. I. Blagoveshchensky

FBU «Tul'skiy TSSM», Tula, Russia

R. D. Farisov

KAMAZ JSC, Naberezhnye Chelny, Russia

V. I. Stroganov, E. M. Abbasov

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

**THE METHODOLOGY CONCEPT OF A COMPREHENSIVE PROGRAM FOR
THE DEVELOPMENT OF THE QUALITY OF CAR ASSEMBLY PRODUCTION**

12-00 – 12-15

M. I. Malyshev, A. M. Ivakhnenko, S. S. Gogolin, E. Yu. Faddeeva

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

**PRINCIPLES OF INTEGRATION OF INNOVATIVE INFORMATION
TECHNOLOGIES IN TRANSPORT AND LOGISTICS PROCESSES**

12-15 – 12-30

D. A. Nikitin, F. L. Viktorov, E. S. Zhuravlev, V. V. Filatov, M. G. Pletnev

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

**AIRFIELD SWEEPING AND BLOWING MACHINE RELIABILITY
AND PRODUCTION MANUFACTURABILITY EVALUATION**

12-30 – 12-45

P. I. Smirnov

Vologda State University, Vologda, Russia

Maria Yu. Karelina, Boris S. Subbotin

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

**ROAD TRANSPORT CO₂ EMISSIONS REDUCTION DEGREE ASSESSMENT
WHEN IMPLEMENTING ITS**

12-45 – 13-00

N. V. Toutova, A. V. Toutov, A. G. Erokhin, M. F. Vanina, E. A. Frolova

Moscow Technical University of Communications and Informatics, Moscow, Russia

PRINCIPALS OF OPTIMAL CLOUD RESOURCE MANAGEMENT

13-00 – 13-15

F. L. Viktorov, E. S. Zhuravlev, V. S. Ershov, A. A. Akulov, V. A. Erpulev

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

**AIRFIELD SWEEPER-BRUSH MACHINE DESIGN OPERABILITY
AND RELIABILITY ESTIMATION**

13-15 – 13-30

E. S. Zhuravlev, F. L. Viktorov, V. S. Ershov, A. A. Akulov, D. S. Taldykin

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

**NEW GENERATION AERODROME WASHING MACHINE TECHNOLOGICAL
INDICATORS ESTIMATION**

13-30 – 14-30

DINNER

November 11, 2022

CHAPTER 9. (1-й поток)
Electrical and electronic engineering pedagogy

CHAIRMEN: **S. L. Yablochnikov**, *Doctor of Sciences, Professor,*
Hear of the department, Moscow Technical University
of Communications and Informatics, Moscow, Russia

14-30 –14-45

A. S. Adzhemov, *Member IEEE*, **A. Y. Kudryashova**, **N. E. Poborchaya**
Moscow Technical University of Communications and Informatics, Moscow, Russia

**THE USE OF MULTIMEDIA EDUCATIONAL COMPLEXES IN THE
TEACHING OF COMMUNICATION THEORY DISCIPLINES**

14-45 – 15-00

S.S. Dymkova, *Member IEEE*
Moscow Technical University of Communications and Informatics, Moscow, Russia

**DEVELOPMENT OF A TEACHING DISCIPLINE PROGRAM
"FUNDAMENTALS OF SCIENTIFIC COMMUNICATIONS" IN THE
SPECIALTY "SYSTEM ANALYSIS AND INFORMATION PROCESSING"**

15-00 – 15-15

O.V. Varlamov, *Senior Member, IEEE*,
Moscow Technical University of Communications and Informatics, Moscow, Russia

**THEORETICAL FOUNDATIONS FOR TEACHING THE CAUSES
OF NON-LINEAR DISTORTIONS IN MODERN HIGH-EFFICIENCY
TRANSMITTERS**

15-15 – 15-30

Yablochnikova I.O, **Yablochnikov S.L**,
Moscow Technical University of Communications and Informatics, Moscow, Russia

Dzobelova V.B.
North Ossetian State University named after Kosta Levanovich Khetagurov,
Vladikavkaz, Russia

Bekhoeva A.A.,
Chechen-State University named after A.A.Kadyrov, Grozny, Russia

**FORMALIZATION OF LEARNING PROCESSES WITHIN THE FRAMEWORK
OF A SYSTEM-CYBERNETIC APPROACH TO MANAGEMENT IN EDUCATION**

15-30– 15-45

DISCUSSION AND QUESTIONS

15-45– 16-00

CONFERENCE RESULTS

November 11, 2022

CHAPTER 7. (2-й поток)
**Advanced Technologies and Strategies for Vehicle
and Transportation Control Systems**

CHAIRMENS: **O.I. Maksimych***ev, Doctor of Technical Sciences, Professor, Head of
the Department “Automated Control Systems”, MADI*

M.I. Ismoilov, *PhD, Assistant professor of the Department
“Automated Control Systems”, MADI*

10-00 – 10-15

A. A. Chernyshev, D. G. Moroz, Ph. V. Akopov, G. G. Popov

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

**MEANS TO IMPROVE THE EFFICIENCY OF OPERATION OF ELECTRIC
BUSES WITH ULTRAFAST CHARGING ON MUNICIPAL ROUTES
OF REGULAR TRANSPORTATION IN CITIES**

10-15 – 10-30

I. V. Demyanushko, N. E. Syrkova, I. A. Karpov, L. I. Rumiantsev,

B. T. Tavshavadze

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

**DEVELOPMENT OF AN ALGORITHM FOR SOLVING THE PROBLEM OF
DETERMINING THE SIZE OF THE DEFLECTION OF ROAD BARRIERS
BASED ON VIDEO RECORDINGS OF FULL-SCALE CRASH TESTS**

10-30 – 10-45

D. B. Efimenko, S. A. Filatov, E. S. Barabanova

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

**TRANSPORT MANAGEMENT SYSTEMS AS A TOOL TO ENSURE
THE FLEXIBILITY AND EFFICIENCY OF CARGO DELIVERY**

10-45 – 11-00

**V. I. Komkov, Yu. V. Trofimenko, N. N. Fedotov, T. Yu. Grigoryeva,
A. Yu. Chekanov**

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

**IMPROVING THE USING EFFICIENCY OF SECONDARY AUTO
COMPONENTS IN ORDER TO PROVIDE SUSTAINABILITY
FOR CAR SERVICE COMPANIES**

11-00 – 11-15

O. I. Maksimych, A. V. Volosova, M. I. Ismoilov, N. G. Kuftinova, K. N. Mezentsev
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

**PLATFORMS AND COMPLEXES FOR UNMANNED TECHNOLOGIES
IN ROAD TRANSPORT**

11-15 – 11-30

V. S. Moskvina

ITMO, St. Petersburg

POST-QUANTUM DIGITAL SIGNATURES IN TRANSPORT DOCUMENTS

11-30 – 11-45

C. B. Pronin, A. V. Ostrokh, O. I. Maksimych, N. G. Kuftinova, A. K. Yadav

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

**PARAMETRIC SYNTHESIS OF COMPUTATIONAL CIRCUITS
FOR COMPLEX QUANTUM ALGORITHMS IN THE TRANSPORT
AND ROAD SPHERE**

11-45 – 12-00

Yu. V. Trofimenko, D. A. Deianov, V. I. Komkov, N. N. Fedotov

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

**METHODOLOGY FOR PREDICTIVE ESTIMATION OF SPECIFIC
GREENHOUSE GAS EMISSIONS BY TRAFFIC FLOWS**

12-00 – 12-15

A. I. Zhukov, D. G. Moroz, V. M. Makurina

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

SIMULATION MODEL OF A BUS ROUTE

12-15 – 13-00

DINNER

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CHAPTER 8. (2-й поток)
Peculiarities of data exchange in cooperative ITS

CHAIRMEN: **S. V. Zhankaziev**, *Doctor of Technical Sciences, Head of the Department*
“Road traffic management and safety” MADI

13-00 – 13-15

**Yu. A. Korotkova, A. A. Pashkova, E. A. Shalagina, A. A. Pakhomova,
V. V. Dronseiko**

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

ENSURING ROAD SAFETY USING ITS SERVICES

13-15 – 13-30

N. G. Kuftinova, O. I. Maksimych, M. Yu. Karelina, A. V. Ostroukh

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

M. I. Ismoilov

Moscow Technological University (MIREA), Moscow, Russia

**DATA FABRIC DIGITAL ARRAY PROCESSING IN ROAD TRANSPORT
SYSTEMS**

13-30 – 13-45

A. V. Ostroukh, C. B. Pronin, A. V. Volosova, B. S. Subbotin

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

P. I. Smirnov

Vologda State University, Vologda, Russia

**PARAMETRIC SYNTHESIS OF QUANTUM CIRCUITS FOR TRAINING
PERCEPTRON NEURAL NETWORKS**

13-45 – 14-00

Alexander Samoylov, Sergey Samoylov

*Vladimir State University named after Alexander and Nikolai Stoletovs -VLSU, Vladimir,
Russia*

**LOSSES OF ENERGY POTENTIAL ON COMMUNICATION LINES SPACE
APPARATUS - EARTH STATION**

14-00 – 14-15

**A. I. Vorobyev, A. A. Kovesnikov, M. V. Gavrilyuk, T. V. Vorobyeva,
D. Yu. Morozov**

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

**DEVELOPMENT OF REQUIREMENTS FOR A DIGITAL ROAD MODEL
AS A MEANS OF IMPLEMENTING AN INFORMATION SERVICE
FOR ROAD USERS**

14-15 – 14-30

S. V. Zhankaziev, A. V. Zamytskih, A. I. Vorobyev, M. V. Gavrilyuk, M. G. Pletnev
*Moscow Automobile and Road Construction State Technical University (MADI), Moscow,
Russia*

PREDICTING TRAFFIC ACCIDENTS USING THE CONFLICT COEFFICIENT

14-30– 14-45

DISCUSSION AND QUESTIONS