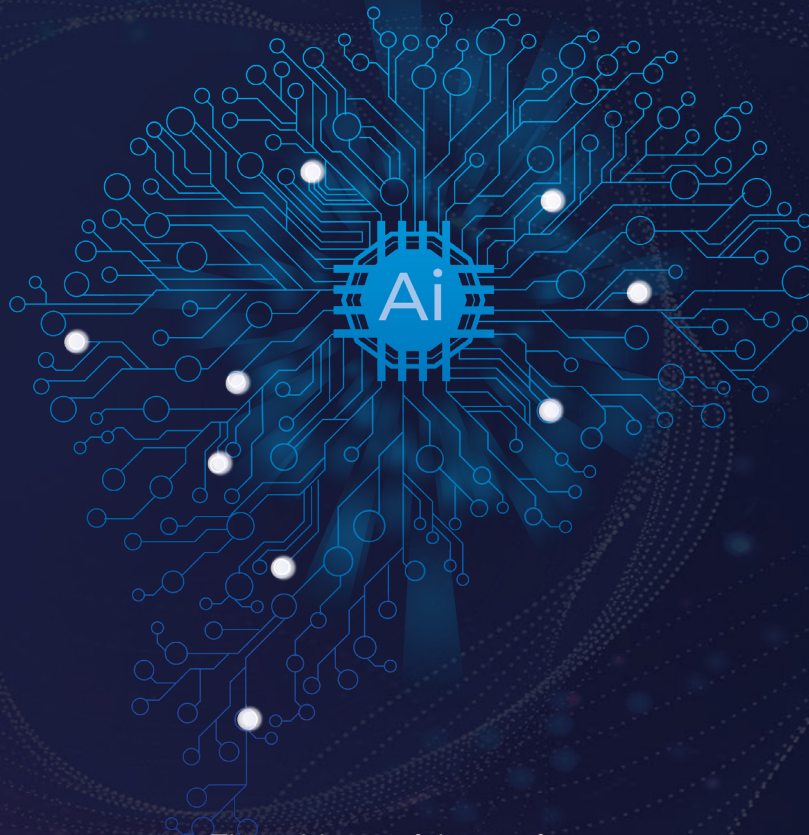Azerbaijan **TECHNICAL** University

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The 2nd International Scientific and Technical Conference on
"Infocommunication Systems and Artificial Intelligence Technology"

December 4-5, 2024, AzTU,
Baku, Azerbaijan

Ai

The address of the conference:
AZ1073, H. Javid ave. 25, Baku,
Azerbaijan Technical University
www.aztu.edu.az

E-mail: bakhtiyar.badalov@aztu.edu.az
Phone: (+994 12) 538-94-16

Plennary Session
December 4

The 2nd International Scientific and Technical Conference on **"Infocommunication Systems and Artificial Intelligence Technology"**
December 4-5, 2024, AzTU, Baku, Azerbaijan

PLENARY SESSION PROGRAM

December 4, 2024, AzTU, Baku, Azerbaijan
11:00 (Baku time, Hybrid) - link, Main building, Conference Hall

Introduction:

Prof. Vilayat Valiyev - Rector of the Azerbaijan Technical University

Congratulatory speeches:

Academician Rasim Aliguliyev - General Director of the Institute of Information Technology

**Academician Ali Abbasov -** General Director of the Institute of Control Systems

Ass. Prof. Elbrus Isayev - Rector of the Nakhchivan State University/Online

d.t.s., doc. Olga Boiprav - Belarusian State University, Deputy Department İnformation Security

Reports:

Agil Movsumov - Data CenterSupport Expert Engineer
Modeling the Topology of Fson Using Dijkstra's Algorithm
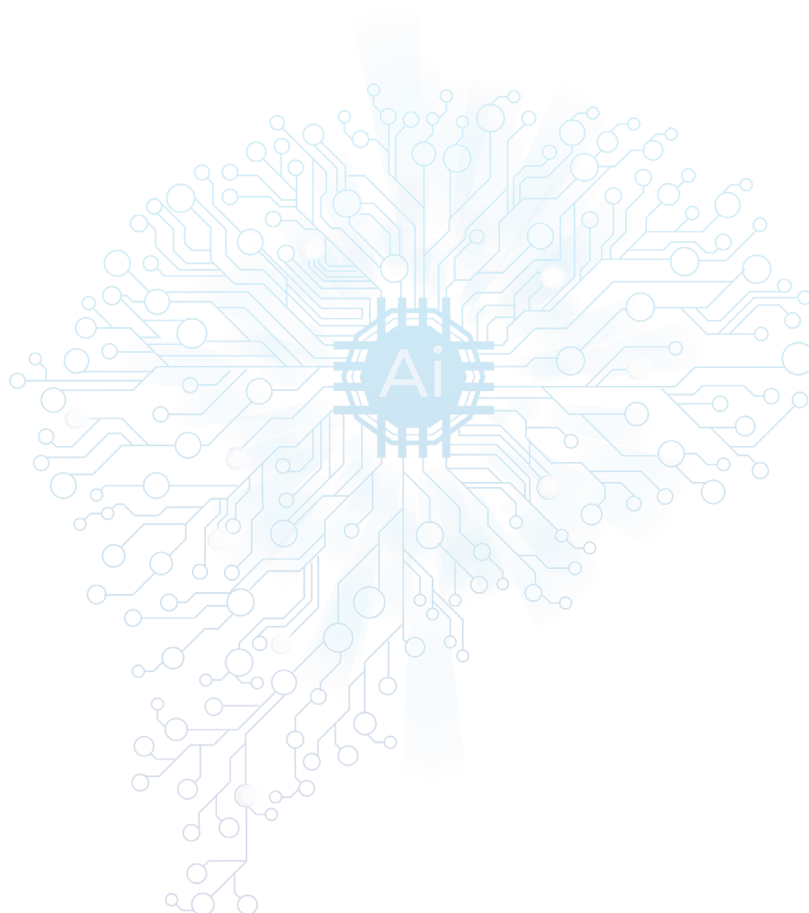
SECTION 1
first meeting
December 4

The 2nd International Scientific and Technical Conference on **"Infocommunication Systems and Artificial Intelligence Technology"**
December 4-5, 2024, AzTU, Baku, Azerbaijan

SECTION 1. COMMUNICATION SYSTEMS AND TECHNOLOGIES

Chairman: Prof. Mehman Hasanov - Azerbaijan Technical University

Co-chairman: Associate Prof. Olga Boiprav – Belarusian State University of Informatics and Radioelectronics

Vice Chairman: Associate Prof. Ali Tagiyev – Azerbaijan Technical University

Scientific Secretary: Senior Lecturer Gizilgul Israfilova - Azerbaijan Technical University

🏛 14:00 (Baku time, Hybrid) - link   📍 6th building, room 414
☕ Coffee break 13:30-14:00 (Baku time, Hybrid)

🕐 14:00-14:10

1. Mehman Hasanov, Vitaly Evdokimov, Anatoliy Navrotskiy, Hasan Najafov, Ilham Suleymanov (Azerbaijan Technical University, Belarus State University, Nakhchivan State University)

Axiomatic Model for Ensuring Stability of Complex Intelligent Systems

🕐 14:10-14:20

2. Isa Mammadov, Eldaniz Huseynov (Azerbaijan Technical University)

Reducing the Minimal Allowable SIR and SINR Ratios Values in Mobile Communication Systems

🕐 14:20-14:30

3. Simnara Akhmedova, Sevinc Huseynzade (Azerbaijan Technical University)

Deep Learning-Based Efficient Analysis for Encrypted Traffic

🕐 14:30-14:40

4. Matin Hadzhyiev, Tofig Mansurov, Alexandr Nazarenko, Tetyana Rusalovska, Elnara Jafarova (Adessa State University, Azerbaijan Technical University)

Comparative Analysis of Data Processing Algorithms in Infocommunication Systems

🕐 14:40-14:50

5.Namik Shukurov, Mahbuba Ibrahimli (Azerbaijan Technical University)

The Role of Optical Modulators in Communication Systems

🕐 14:50-15:00

6.Sergey Yablochnikov, Tofig Mansurov, Irina Yablochnikova, Rahman Mammadov (Plekhanov Russian University, Azerbaijan Technical University, Moscow Technical University)

Models of Control Systems with Parametric and Additive-Parametric Feedback

🕐 15:00-15:10

7. Irada Davrishova, Mahbuba Ibrahimli (Azerbaijan Technical University)

5G Network Architecture and its Impact on Modern Communication Systems

🕐 15:10-15:20

8. Baloghlan Najafov, Asya Azimova (Azerbaijan Technical University)

GPON Technology: Projecting, Reporting, Implementation and Advantages

🕐 15:20-15:30

9. Gizilgul Israfilova, Rasul Gojayev (Azerbaijan Technical University)

Adaptive Optical Modulation Using AI

🕐 15:30-15:40

10. Shukurov Namik (Azerbaijan Technical University)

Image Converter Based on Exclusion Effect for Converting Images into Electrical Signals

🕐 15:40-15:50

11. Farhad Khidirli, Emin Alasgarov, Unal Imanov (Azerbaijan Technical University, Azerbaijan Diplomatic Academy)

Secure Peer-to-Peer Transfers on Ethereum Using Telegram API and Ganache

SECTION 1
second meeting
December 5

The 2nd International Scientific and Technical Conference on **"Infocommunication Systems and Artificial Intelligence Technology"**

December 4-5, 2024, AzTU, Baku, Azerbaijan

🏛 10:00 (Baku time, Hybrid) - <u>link</u> 📍 6th building, room 414

☕ Coffee break 13:30-14:00 (Baku time, Hybrid)

🕐 **10:00-10:10**

1. Andrey Zenevich, Tatiana Matkovskaia, Nurana Camalzadeh, Javid Namazov
(Belarusian State Academy, Azerbaijan Technical University)

Formation of an Information Leakage Channel from an optical Fiber by thermal Action

🕐 **10:10-10:20**

2. Oleg Zelmanski, Sergei Petrov, Ali Taghiyev, Khagani Abdullayev (Belarusian State University, Azerbaijan Technical University, National Aviation Academy)

Protection of Patients Data in the Medical Equipment Being Developed with Hl7 Standard Support

🕐 **10:20-10:30**

3.Olga Boiprav, Vadim Bogush, Mehman Hasanov, Vyacheslav Mokerov, Elena Belousova (Belarusian State University, Azerbaijan Technical University)

Two-Layer Charcoal-Containing Microwave Absorbers with a Relief Surface For Server Equipment Protection From Interference

🕐 **10:30-10:40**

4. Isa Mammadov, Tamerlan Hajiyev (Azerbaijan Technical University)

Review on Regulation and Compliance Testing Methods of Unwanted Emissions in the Spurious Domain of Telecommunication Equipment Transmitters

🕐 **10:40-10:50**

5. Agil Movsumov, Shadiya Sultanova, Emin Payizov, Turana Rasullu, Nurana Camalzadeh, Javid Namazov, Mala Dutta
(Azerbaijan Technical University , Assam down town University)

Modeling the Topology of Fson Using Dijkstra's Algorithm

🕐 **10:50-11:00**

6.Nigar Mahmudova, Sure Agayeva, Leyla Qurbanova
(Azerbaijan Technical University, National Aviation Academy)

The Role of Artificial Intelligence in the Telecommunications Industry

🕐 **11:00-11:10**

7. Zhao Di, Alevtina Gourinovitch, Shadiye Sultanova, Baloghlan Najafov, Gizilgul Israfilov
(Belarussian State University, Azerbaijan Technical University)

Comparative Analysis of LANet and FE-Net in Image Segmentation

🕐 **11:10-11:20**

8. Sergei Petrov, Tatiana Pulko, Artyom Myadelets, Elizaveta Kundas, Ali Taghiyev, Agil Movsumov
(Belarusian State University, National Children's Technopark, Azerbaijan Technical University)

Study the effectiveness of classification algorithms for detecting fraud web resources

🕐 **11:20-11:30**

9. Ali Salahov
(Azerbaijan Technical University)

Modeling Efficient Placement of Cellular Base Stations

🕐 **11:30-11:40**

10. Gunikhan Sonowal, Soraisam Gobinkumar Singh, Prasanta Bairagi, Utpal Barman, Dulumani Das, Iltimas Mammadov, Gulnar Gurbanova (Assam down town University, 2Azerbaijan Technical University)

Comprehensive Evaluation and Performance Analysis of a Deep Learning Model with Hyperparameter tuning for Lumpy Skin Disease Classification in Dairy Cows

SECTION 2
first meeting

December 4

The 2nd International Scientific and Technical Conference on **"Infocommunication Systems and Artificial Intelligence Technology"**

December 4-5, 2024, AzTU, Baku, Azerbaijan

Section 2. Intelligent Control Systems

Chairman: Associate Prof. Elkhan Sabziev – Institute of Control Systems

Co-chairman: Prof. Georgiy Kuchuk – National Technical University "Kharkiv Polytechnic Institute"

Deputy Chairman: Prof. Naila Musayeva – Institute of Control Systems

Scientific Secretary: Associate Prof. Tahir Alizada – Institute of Control Systems

14:00 (Baku time, Hybrid) - link   Main building, room 424
Coffee break 13:30-14:00 (Baku time, Hybrid)

14:00-14:10

1. Elshan Hashimov, Elkhan Sabziev, Samad Muradov (Azerbaijan Technical University, Institute of Control Systems, Military Scientific Research Institute)

Mathematical Formalization and Solution of the Problem Integration of Beacon Systems into UAV

14:10-14:20

2. Ibrokhimali Normatov, Alimdzhan Babajanov (National University of Uzbekistan named after Mirzo Ulugbek, Engineering Federation of Uzbekistan)

The Discrete Models in Mathematical Theory of Search and Recognition

14:20-14:30

3. Tahir Alizada, Adalat Pashayev, Giblali Khaligov (Institute of Control Systems, National Defense University)

Method of Determining the Distance to the Object in the Image

14:30-14:40

4. Sheyda Sultanova, Elvin Azizbayov (The Academy of Public Administration)

Enhancing Commercial Enterprises through Optimized Information Infrastructure and Communication Systems

14:40-14:50

5. Eirene Barua, Mala Dutta, Zafar Jafarov (Assam down town University, Azerbaijan Technical University)

Improving the Performance of Association Rules Hiding using Hybrid Particle Swarm Optimization Algorithm

14:50-15:00

6. Arzuman Gasanov, Anar Guliyev, Rashad Hasanli and Nigar Qedimova (Military Research Institute of National Defense University, National Defense University Institute of Military Management. Sumqait State University, Baku Eurasian University)

Solving the Problem Optimal Planning of Air Defense Means Against Low-Altitude Air Targets

15:00-15:10

7. Samad Muradov, Elshan Hashimov and Elkhan Sabziev (Azerbaijan Technical University, Institute of Control Systems, Military Scientific Research Institute)

Basics Application of Beacon Systems and Investigation Methods

15:10-15:20

8.Gadir Gafarov and Elnare Cafarova (Azerbaijan Technical University, Azerbaijan State Oil and Industry University)

Development of a 2 KW photoelectric solar station for the II training building of AzTU: modeling in the PVGIS simulation program

SECTION 3
first meeting
December 4

The 2nd International Scientific and Technical Conference on **"Infocommunication Systems and Artificial Intelligence Technology"**
December 4-5, 2024, AzTU, Baku, Azerbaijan

Section 3. Radioelectronics, Optics and Communication Devices

Chairman: Prof. Bayram İbrahimov - Azerbaijan Technical University

Co-chairman: Prof. Camal H. Yilmaz - Gazi University

Deputy Chairman: Prof. Asad Rustamov - National Defense University

Scientific Secretary: Senior Lecturer Aligismat Mehdiyev - Azerbaijan Technical University

🍦 14:00 (Baku time, Hybrid) - link 📍 Main building, II floor, small meeting room
☕ Coffee break 13:30-14:00 (Baku time, Hybrid)

🕐 **14:00-14:10**

1.Bayram Ibrahimov, Asmar Nabieva and Aygun Hamidova (Azerbaijan Technical University)

Research Spectral Efficiency of New Modulation Formats in Fiber-Optic Networks

🕐 **14:10-14:20**

2. Vaqif Maherramov and Sevda Kazbekova (Azerbaijan Technical University, Military İnstitute named after Haydar Aliyev)

A new approach to building optical converters for telecommunication networks

🕐 **14:20-14:30**

3. Vyacheslav Shuvalov, Sevinc Ismaylova and Samina Rustamova (Siberian State University of Telecommunications and Informatics, Azerbaijan Technical University, Nakhchivan State University)

Research and Analysis QoS and QoE Indicators in Multiservice Telecommunication Networks

🕐 **14:30-14:40**

4. Arif Hasanov, Yalchin İsayev and Zulfugarova Seljan (National Defense University, Azerbaijan Technical University)

Research And Analysis Characteristics Indicators Efficiency Of Radio Suppression Means

🕐 **14:40-14:50**

5. Bayram Ibrahimov and Vusal Karimov (Azerbaijan Technical University, Institute of Control Systems of the Ministry of Science and Education of the Republic of Azerbaijan)

Research Methods Increasing Interference Immunity Reception in Radiotechnical Complexes Systems

🕐 **14:50-15:00**

6. Vaqif Maherramov and Sevda Kazbekova (Azerbaijan Technical University)

Optical Networks for Quantum Transmission System Key Encryption

🕐 **15:00-15:10**

7. Elvin Abaszade, Zafar İsmayilov, Almaz Mehdiyeva and Qasimov Huseyn (Azerbaijan Technical University, Azerbaijan State Oil and Industry University, Nakhchivan State University)

Security Control System for Information Exchange in Telecommunication Networks

🕐 **15:10-15:20**

8. Asad Rustamov, Mehman Binnatov, Arzuman Hasanov, Mukhtar Azizullayev and Ruslan Hashimov (Azerbaijan Technical University, Institute of Military Management of the National Defense University, National Aerospace Agency)

Analysis Telemetry Systems Unmanned Aircraft in Modern War

🕐 **15:20-15:30**

9. Aliqismat Mehdiyev and Qasımova Seriyye (Azerbaijan Technical University, 2Nakhchivan State University)

Detection of Small-Scale Unmanned Aerial Vehicles Using Acoustic Reconnaissance Tools

🕐 **15:30-15:40**

10. Elchin Kerimov (Azerbaijan Technical University)

Energy Levels Of Metallic Nanotubes Based On Iridium Silicide

🕐 **15:40-15:50**

11. Aliyev Hikmet and Fattayev Hikmet (Azerbaijan Technical University)

Electrical Discharge in Dielectric Structures

🕐 **15:50-16:00**

12.Mehti Jamalov, Elmir Baghirli, Allahverdi Orucov, Hikmat Aliyev and Musafir Guliyev (Azerbaijan Technical University)

Investigation of Frequency and Temperature Effects on the Dielectric Properties of a Halogen-Free Flame Retardant Cable Composite

SECTION 3

first meeting

December 4

The 2nd International Scientific and Technical Conference on **"Infocommunication Systems and Artificial Intelligence Technology"**

December 4-5, 2024, AzTU, Baku, Azerbaijan

16:00-16:10

13. Ankur Pan Saikia, Ananya Kalita and Parvana Movsumova (Assam down town University, Azerbaijan Technical University)

Exploring the Impact of AI on Privacy and Ethical Considerations: Analysing the Legal and Regulatory Frameworks

16:10-16:20

14. Arpita Nath Boruah, Mrinal Goswami, Elchin Rzayev (Assam down town University, Azerbaijan Technical University)

Evaluating the Prediction of COPD using Data Analysis and Ensemble Machine Learning Techniques

SECTION 3
second meeting

December 5

The 2nd International Scientific and Technical Conference on **"Infocommunication Systems and Artificial Intelligence Technology"**
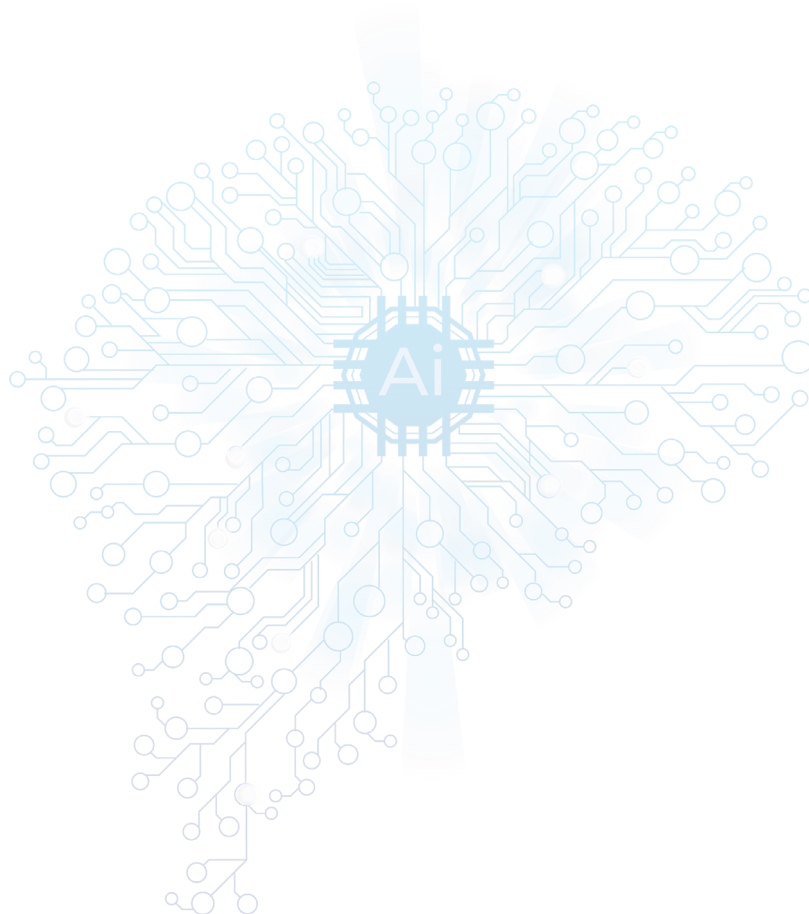
December 4-5, 2024, AzTU, Baku, Azerbaijan

10:00 (Baku time, Hybrid) - link   **6th building, room 414**
Coffee break 13:30-14:00 (Baku time, Hybrid)

10:00-10:10

1.Ramiz Humbatov, Faqan Amanullazade, Ulvi Rafizade and Vusal Karimov
(Baku Engineering University, Azerbaijan Technological University, Institute of Control Systems of the Ministry of Science)

Research Some Issues Noise Immunity Reception Optical Signals in Multiservice Convergent Networks

10:10-10:20

2. Gunay Khasmammadova, Sevinj Bakhshaliyeva and Zeynalov Javanshir (Azerbaijan Technical University, Azerbaijan State Oil and Industry University, Nakhchivan State University)

Method for İncreasing the Accuracy of İnformation Exchange in Communication Networks

10:20-10:30

3.Shahla Hajizadeh (Institute of Space Research of Natural Resources)

Summary Of Passive Optical Self-Directed Title Used To Attack Ground Target

10:30-10:40

4.Zeynalov Shudjaat, Osmanova Sevinj, Jafarova Gulshan and Kerimov Farkhad (Azerbaijan Technical University)

The Influence of Phthalic Acid Additives on the IR Spectrum of Polyethylene

10:40-10:50

5.Alasgarova Mansura, Imanova Gulshan and Sohbatova Aytan
(National Aerospace Agency, Institute for Space Research of Natural Resources)

Infocommunication Systems and Artificial Intelligence Technologies

10:50-11:00

6.Fuad Huseynli and Samir Babayev
(Azerbaijan Technical University, Azerbaijan State Oil and Industrial University)

Adapting Artificial Intelligence to the E-Recruitment Systems

11:00-11:10

7.Mammodova Arzu, Aliyeva Durdana and Hasanova Tahira
(National Aerospace Agency, Institute for Space Research of Natural Resources)

Operation of a synchronized generator to create a controllable electromagnetic field against UAVs

11:10-11:20

8.Ismayilova İlala, Valiyev Ilyas and Tagiyeva Narmin
(National Aerospace Agency, Institute for Space Research of Natural Resources)

Infrared photocells based on Schottky contacts used to create photodetectors

11:20-11:30

9.Sevinj Mammadhasan, Tanirverdiyeva Malahat and Abdulova Aygul
(Azerbaijan Technical University, Institute for Space Research of Natural Resources)

Fundamentals of the working principle of radio communication systems and tools

11:30-11:40

10.Shamkhal Aliyev (Azerbaijan Technical University)

Aging Of Insulation Under The Influence Of Partial Discharges And Counter-Emergency Measures

11:40-11:50

11.Fuad Huseynli and Samir Babayev
(Azerbaijan Technical University, Azerbaijan State Oil and Industrial University)

A TOPSIS Approach to HR Optimization in Azerbaijani Banks

11:50-12:00

12.Cherkez Yusubov, Abbasov Habib and Ankur Pan Saikia
(Azerbaijan Technical University, Assam down town University)

A New Approach to Numerical Calculation of Non-Static Processes in Complex Magistral Gazoprovodov

12:00-12:10

13.Ilgar Mamedov, Aynura Abdullayeva and Seadet Eyyubova (Institute of Control Systems NASA, Military Scientific Research Institute, Baku Eurasian University)

One 3D combined boundary value problem for the Bianchi equation with nonsmooth coefficients and its application in modern rocket devices

12:10-12:20

14. Enes Cengiz, Cemal Yılmaz and Almaz Aliyeva
(Sinop University, Gazi University, Mingachevir State University, Institute of Control Systems of the Ministry of Science and Education of the Republic of Azerbaijan)

Survey on Traffic Sign Detection and Recognition: Insights into Deep Learning Algorithms

12:20-12:30

15.Leyla İbrahimova (Nakhchivan State University)

Modern Ecological State of the Soils Absheron Peninsula and Ways Solutions

SECTION 4
first meeting
December 4

The 2nd International Scientific and Technical Conference on **"Infocommunication Systems and Artificial Intelligence Technology"**
December 4-5, 2024, AzTU, Baku, Azerbaijan

Section 4. Artificial Intelligence Technologies and Applications

Chairman: Corresponding member of ANAS, Prof. Ramiz Aliguliyev – Institute of Information Technology

Co-chairman: Prof. Efendi Nasiboglu – Dokuz Eylül University, Türkiye

Deputy Chairman: Corresponding member of ANAS, Prof. Masuma Mammadova – Institute of Information Technology

Scientific Secretary: Prof. Zarifa Jabrayilova – Institute of Information Technology

14:00 (Baku time, Hybrid) - link
Coffee break 13:30-14:00 (Baku time, Hybrid)

B.Vahabzade str., 9A, Institute of Information Technology, Conference Hall, 2nd floor

14:00-14:10

1. Sergey Bogatenkov, Dmitry Bogatenkov, Elkhan Mammadov, Konul Shammadova, Gunay Dadashova, Eirene Barua (South Ural State University, Chelyabinsk State University, Department of Shipbuilding and Ship Repair, Azerbaijan State Marine Academy, Azerbaijan Technical University, Assam down town University)

Artificial Intelligence for Automated Energy Loss Search

14:10-14:20

2. Tofiq Kazimov, Sabira Ojagverdiyeva (Institute of Information Technology)

A dual approach to applying artificial intelligence in child safety: benefits and challenges

14:20-14:30

3. Ramiz Aliguliyev, Shalala F. Tahirzada (Institute of Information Technology)

Performance Comparison of K-means, Parallel K-means and K-means++

14:30-14:40

4. Valiaryan Ivashenka, Daniil Shunkevich (Belarusian State University of Informatics and Radielectronics)

Principles of integration of logic models in next-generation intelligent computer systems

14:40-14:50

5. Varlamova Lyudmila P., Aripova Zulfiya D. (National University of Uzbekistan)

Segmentation and Methods of Detection of Uterine Fibroid by Medical Images

14:50-15:00

6. Rashid Alakbarov, Mammad Hashimov (Institute of Information Technology)

The role of artificial intelligence in the efficient management of SCADA systems

15:00-15:10

7. Adila Balaaqa Zeynalova, Gulshan Rafig Aliyeva, Nigar Elsavar Adilova, Nargiz Etibar Almazova (Azerbaijan Technical University, Azerbaijan University of Oil and Industry)

The Use of Application of Artificial Intelligence in Enterprise Analytics

15:10-15:20

8. Rasmiya Mahmudova, Konul Dashdamirova (Institute of Information Technology)

Artificial Intelligence dangers, ethical and legal issues

15:20-15:30

9. Alakbar Valizada Taghi (Azerbaijan Technical University)

Enhancing Azerbaijani Text Generation with Syllable-Based Tokenization: A Comparative Analysis with BPE and WordPiece

15:30-15:40

10. Araz Mustafa (Institute of Information Technology)

Problems of Personal Data Collected in the Cyber Physical Social System

15:40-15:50

11. Makrufa Hajirahimova, Yadigar Imamverdiyev, Elshen Baghirov (Institute of Information Technology, Azerbaijan Technical University)

Experimental study on the feasibility of using Machine Learning Techniques for Estimation of Bubble Point Pressure in Crude Oil Systems

15:50-16:00

12. Ramiz Aliguliyev, Tural Badalov (Institute of Information Technology)

Exploring Big Data Clustering: Approaches, Algorithms, and Platform

16:00-16:10

13. Javid Abbasli (Azerbaijan Technical University)

Analysis of Migraine Aura Based on EEG Tests Using Artificial Intelligence Methods

SECTION 4
second meeting
December 5

The 2nd International Scientific and Technical Conference on **"Infocommunication Systems and Artificial Intelligence Technology"**

December 4-5, 2024, AzTU, Baku, Azerbaijan

10:00 (Baku time, Hybrid) - link
Coffee break 13:30-14:00 (Baku time, Hybrid)

B.Vahabzade str., 9A, Institute of Information Technology, Conference Hall, 2nd floor

10:00-10:10

1. Lamiya Najafova
(Institute of Control Systems of the Ministry of Education of the Republic of Azerbaijan)

Mathematical modeling and management through artificial intelligence for optimization of electrical energy fields

10:10-10:20

2. Roza O. Shahverdiyeva (Institute of Information Technology)

A conceptual approach to the identification of new generation technological economic development prospects based on artificial intelligence

10:20-10:30

3. Tamilla Bayramova (Institute of Information Technology)

Application of machine learning algorithms to improve software fault tolerance: a comparative analysis

10:30-10:40

4. Alovsat G. Aliyev, Sabir Y. Aliyev (Institute of Information Technology)

Some Aspects of Cyber Resilience of the National Digital Economy

10:40-10:50

5. Sheyda Sultanova, Elvin Azizbayov
(The Academy of Public Administration (APA))

Leveraging AI Technologies for the Optimization of Information Infrastructure in Commercial Enterprises

10:50-11:00

6. Rasim Mahmudov (Institute of Information Technology)
Issues of applying artificial intelligence in circular economy

11:00-11:10

7. Daniel Mitrofanovs, Yelena Popova
(Transport and Telecommunication Institute)

Evaluating PCA, LOF, and kNN Models for Enhanced Detection of Corrupted Data in Loan Data Quality Analysis

11:10-11:20

8. Ruslan Rustamov
(The Academy of Public Administration under the President of the Republic of Azerbaijan)

The Use of Artificial Intelligence in Disease Diagnostics: Economic Impact on Healthcare Institutions

11:20-11:30

9. Masuma Mammadova, Zarifa Jabrailova, Aytan Ahmadova (Information Technology Institute)

Architectural-technological Principles of a Patient-Centered Digita Twin and Its Visualization Algorithm in Clinical Practice

11:30-11:40

10. Elbey Rustemzade, Nurali Yusifbayli
(Azerbaijan Technical University)

Game Theory-Based Optimization for Sustainable Energy Trading Systems

11:40-11:50

11. Zafar Jafarov, Vahid Garuslu, Atif Namazov
(Azerbaijan Technical University, Queen's University Belfast)

Effective Use of Artificial Intelligence methods for the Implementation of Prerequisites in curriculums

11:50-12:00

12. Cherkez Yusubov, Abbasov Habib and Ankur Pan Saikia
(Azerbaijan Technical University, Assam down town University)

A New Approach to Numerical Calculation of Non-Static Processes in Complex Magistral Gazoprovodov

12:00-12:10

13.Soraisam Gobinkumar Singh, Dulumani Das, Utpal Barman, Hasan Huseynov (Assam down town University, Azerbaijan Technical University)

Optimized CNN-Based Approach for Alzheimer's Disease by tackling Class Imbalance in MRI Classification

SECTION 5
first meeting
December 4

The 2nd International Scientific and Technical Conference on **"Infocommunication Systems and Artificial Intelligence Technology"**
December 4-5, 2024, AzTU, Baku, Azerbaijan

Section 5. Cybersecurity Technologies

Chairman: Head of the cyber security department, DSc. associate professor. Imamverdiyev Yadigar – Azerbaijan Technical University

Co-chairman: Prof. Sedat Akleylek – University of Tartu, Tartu, Estonia

Deputy Chairman: Associate Prof. Farhad Yusifov – Institute of Information Technology

Scientific Secretary: Senior Lecturer Qahira Vahidli – Azerbaijan Technical University

14:00 (Baku time, Hybrid) - link   Main building, room 317
Coffee break 13:30-14:00 (Baku time, Hybrid)

14:00-14:10

1. Elbey Rustemzade, Nurali Yusifbayli
(Azerbaijan Technical University)

Securing the Future of Energy Trading: Enhancing Cybersecurity with Blockchain in Web 3.0

14:10-14:20

2. Petrov Sergei Nikolaevich, Pulko Tatiana Alexandrovna, Myadelets Artyom Olegovıch, Kundas Elizaveta Vladimirovna
(Belarusian State University of Informatics and Radielectronics)

Study the Effectiveness of Classification Algorithms for Detecting Fraud Web Resources

14:20-14:30

3. Rahib Aghababayev, Aytaj Aghayeva, Nasimi Orujlu (Azerbaijan Technical University)

Optimization and Implementation of NLP Models for Evidence Analysis in Digital Forensics

14:30-14:40

4. Aykhan Huseynli (Azerbaijan Technical University)

Evaluating Digital Forensic Models: The Role of Anti-Forensics and Standards

14:40-14:50

5. Javad Najafli Vaqif
(Azerbaijan Technical University)

Applying Artificial Intelligence Models to Cybersecurity: Detecting Anomalies in Energy Consumption

14:50-15:00

6. Quliyev Natiq Aliabbas, Gahramanova Samira Hasan
(Azerbaijan Technical University)

The role of 5G technology in the security of UAVs

15:00-15:10

7. Araz Mustafa (Institute of Information Technology)

Protection Issues of Personal Data in the Cyber Physical Social System
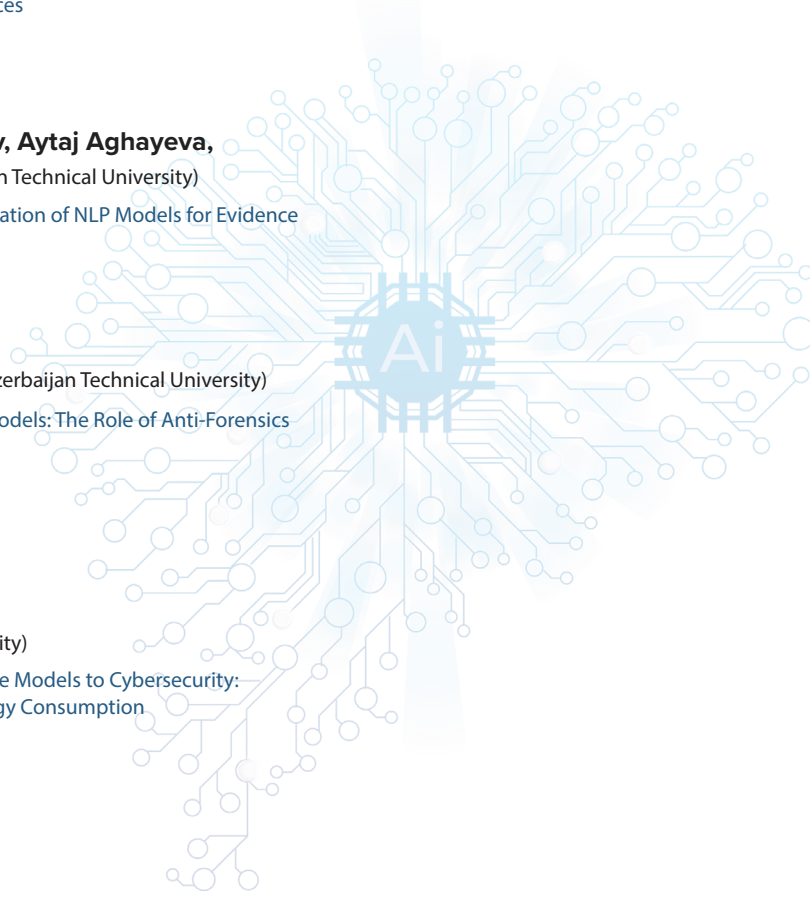
SECTION 5
second meeting
December 5

The 2nd International Scientific and Technical Conference on **"Infocommunication Systems and Artificial Intelligence Technology"**

December 4-5, 2024, AzTU, Baku, Azerbaijan

10:00 (Baku time, Hybrid) - link   Main building, room 317
Coffee break 13:30-14:00 (Baku time, Hybrid)

10:00-10:10

1. Adila Karimova, Qahira Vahidli
(Azerbaijan Technical University)

Application of Artificial Intelligence in the Field of Threat Intelligence

10:10-10:20

2. Arzu Babayeva, Yadigar Imamverdiyev
(Azerbaijan Technical University)

Risks of Cascading Failures in Critical Information Infrastructure

10:20-10:30

3. Abdulhuseyn Vafadar oglu Aghayev
(Azerbaijan Technical University)

Exploring Advanced Techniques for Ensuring Data Integrity in Blockchain Transactions

10:30-10:40

4. Asgarov Kamran Natiq
(Azerbaijan Technical University)

Real-Time Endpoint Anomaly Detection Using Event Tracing for Windows

10:40-10:50

5. Hasan Rubail Pashayev
(Azerbaijan Technical University)

LLM Attacks: Exploiting the Vulnerabilities of Large Language Models

SECTION 6
first meeting
December 4

The 2nd International Scientific and Technical Conference on **"Infocommunication Systems and Artificial Intelligence Technology"**
December 4-5, 2024, AzTU, Baku, Azerbaijan

Section 6. Advanced Manufacturing Technologies

Chairman: Prof. Nizami Yusubov - Azerbaijan Technical University

Co-chairman: Prof. Dr.-Ing. habil., Dr.h.c., Sylvio Simon – Brandenburg University of Technology Cottbus-Senftenberg

Vice Chairman: Prof. Isa Khalilov – Azerbaijan Technical University

Scientific Secretary: Senior Lecturer Ramil Dadashov - Azerbaijan Technical University

🎙 14:00 (Baku time, Hybrid) - link   📍 Main building, II floor, Haydar Aliev Center
☕ Coffee break 13:30-14:00 (Baku time, Hybrid)

🕐 14:00-14:10

1. Subhan Namazov, Shahin Mashayev, Taleh Taghiyev (Azerbaijan Technical University)

Effect of High-Speed Sintering on the Structure and Propertie of Molybdenum Powder Steels

🕐 14:10-14:20

2. Sylvio Simon, Nizami Yusubov, Samir Amirli (Brandenburg University of Technology, Azerbaijan Technical University)

Investigation of Surface Roughness in Hydroabrasive Machining Depending on Changes in Abrasive Grain Size and Pressure

🕐 14:20-14:30

3. Rahim Shukyurov, Naila Mirbabayeva, Lala Azimova (Azerbaijan Technical University)

Development of High-Strength Deep-Well Pump Rods For Oil Production Based on Innovative Metallurgical Technologies

🕐 14:30-14:40

4. Mikhail Lustenkov, Isa Khalilov (Belarusian-Russian University, Azerbaijan Technical University)

Calculation of Geometric Parameters of an Eccentric Transmission with Intermediate Rolling Elements

🕐 14:40-14:50

5. Alakbar Huseynov, Ilqar Nazarov, Farid Huseynli, Mirzabay Safarov (Azerbaijan Technical University, Azersilah Defense Industry Holding CJSC, National Aerospace Agency)

Determination of Deformation and Machining Allowance of Precision Parts Hardened by Laser Method

🕐 14:50-15:00

6. Alakbar Huseynov, Chingiz Mammadov, Shovgi Asadov, Azad Kerimov (Azerbaijan Technical University)

Effect of Screw Tip Designs on the Extrusion Process of Precision Composite Parts For Injection Molding Machines

🕐 15:00-15:10

7. Fakhraddin Yusubov, Aysel Suleymanova-Rahmanli (Azerbaijan Technical University)

Radioecological Assessment of the Effects of Mining on River Sources in the Liberated Territories

🕐 15:10-15:20

8. Canan Kocak Altundag, Sencer Yucel, Faxraddin Yusubov (Hacıtepe University, Azerbaijan Technical University)

Investigating the Applications and Impacts of Large Language Models in Chemistry Education

🕐 15:20-15:30

9. Malik Garayev, Agasi Agayev (Azerbaijan Technical University)

The Technological Solution For Ensuring the Surface Quality of Non-Rigid Parts Made of Aluminum Alloys

🕐 15:30-15:40

10. Nariman Rasulov, Ugurlu Nadirov, Irada Abbasova (Azerbaijan Technical University)

Improving the Efficiency of Machining Oppositely Directed Conical Surfaces by Managing Dynamic Technological Relationships

🕐 15:40-15:50

11. Nariman Rasulov, Arastun Mammadov, Mursal Alakbarov, Elgun Shabiyev, Yusif Huseynov (Azerbaijan Technical University, BP Exploration (Caspian Sea) Limited)

Issues of Improving the Efficiency of Cylindrical Gear Grinding Using Copying Methods through a Systematic Approach

🕐 15:50-16:00

12. Hasan Huseynov, Sahib Bagirov (Azerbaijan Technical University)

Empirical Modeling of Flat Joint Tightness

🕐 16:00-16:10

13. Vitaly Dubrovin, Boris Kulakov, Andrey Karpinsky, Dmitry Ardashev, Anastasiya Degtyareva-kashutina, Ramil Dadashov (South Ural State University, Azerbaijan Technical University)

Modeling and Simulation of Ductile-Iron Blank Casting Processes For an Electrohydraulic Power Amplifier Body

SECTION 6
first meeting
December 4

The 2nd International Scientific and Technical Conference on **"Infocommunication Systems and Artificial Intelligence Technology"**

December 4-5, 2024, AzTU, Baku, Azerbaijan

🕑 16:10-16:20

14. Darya Khabarova, Sergey Bitiutckikh, Alexander Ismagilov, Dmitry Ardashev, Mukhaddin Samadov, Heyran Abbasova
(South Ural State University, Azerbaijan Technical University)

Fluid Flow Modeling in the Spool and Sleeve of an Electro-Hydraulic Power Amplifier

🕑 16:20-16:30

15. Yusif Hasanov, Mahmud Suleymanli, Baybala Rahimov, Ali Alili (Azerbaijan Technical University, Azerbaijan State Maritime Academy)

Oil Analysis of Ship Mechanism

🕑 16:30-16:40

16. Yashar Musayev, Elbay Babayev, Kamran Rzayev
(Azerbaijan Technical University, State Oil Company of Azerbaijan Republic)

Coating- & Nanotechnology one of the Key Technology for the Energy Transition

🕑 16:40-16:50

17. Matanat Mehrabova, Elbay Babayev, Farhad Kerimov, Musa Asadov, Niyazi Hasanov, Fail Shamilov, Yashar Musayev (Azerbaijan Technical University, State Oil Company of Azerbaijan Republic, Baku State University, BalticNet-PlasmaNet)

Study of Mechanical Properties of Composition Based on High-Deposit Polyethylene Modified With Carbon Nanotubes

🕑 16:50-17:00

18. Ilgar Abbasov, Rezo Aliyev, Arastun Mammadov, Mahabbat Suleymanov, Huseyn Mammadov
(Brandenburg University of Technology Cottbus-Senftenberg, TU Bergakademie Freiberg, Azerbaijan Technical University)

Investigation of the influences on energy consumption during turning and its modelling

🕑 17:00-17:10

19. Rezo Aliyev, Abid Shah, Neel Kamal Gupta
(TU Bergakademie Freiberg)

WAAM-based Additive Manufacturing of Multi-Materials For Application-Oriented Functionality Enhancement

🕑 17:10-17:20

20. Vagif Abbasov, Mursal Nasirov
(Azerbaijan Technical University)

Study of Runout and Imbalance of Disc Cutters in the Manufacturing of Furniture Parts

🕑 17:20-17:30

21. Vaqif Abbasov, Fariz Amirov, Azad Karimov
(Azerbaijan Technical University)

Wear Properties of Camshaft Cams and Improvement of Their Wear Resistance

🕑 17:30-17:40

22. Miryusif Mirbabayev, Aynura Yariyeva
(Azerbaijan Technical University)

Modern Methods of Studying the Microelement's Composition of Oil

🕑 17:40-17:50

23. Miryusif Mirbabayev, Roya Amirova
(Azerbaijan Technical University)

Economic and Environmental Impact of Green Chemistry and Advanced Technologies in the Chemical Industry
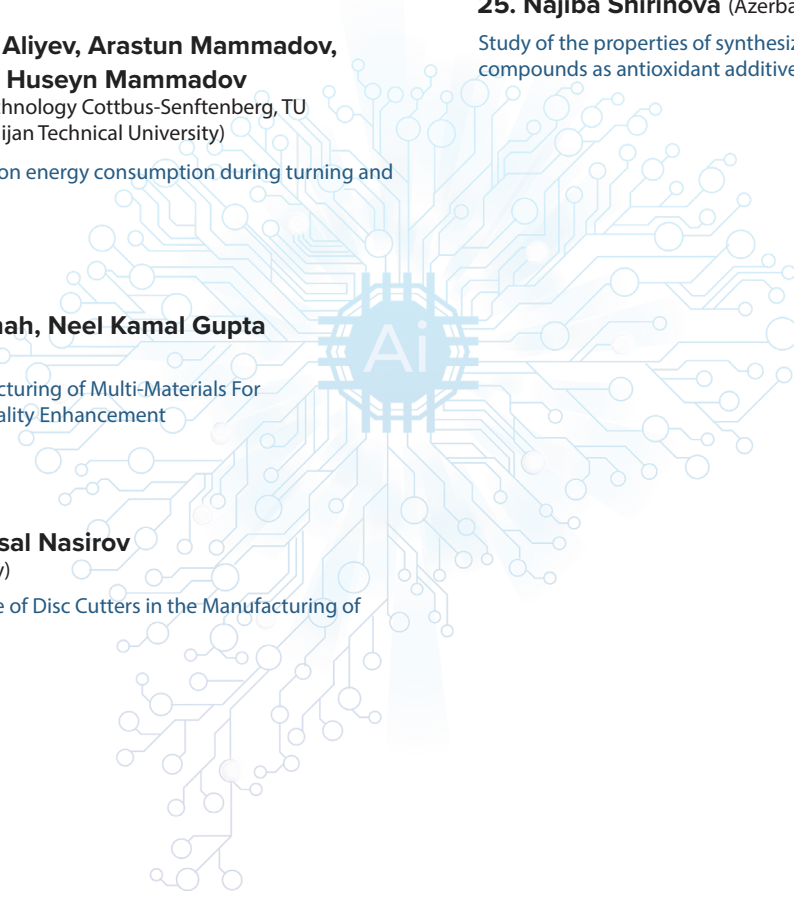
🕑 17:50-18:00

24. Gulahmad Talybov, Sadagat Ibrahimova
(Azerbaijan Technical University, Azerbaijan State Oil and Industry University)

Inhibitors in Acid Environments

🕑 18:00-18:10

25. Najiba Shirinova (Azerbaijan Technical University)

Study of the properties of synthesized thiirane and thietane compounds as antioxidant additives

SECTION 6
second meeting
December 5

The 2nd International Scientific and Technical Conference on **"Infocommunication Systems and Artificial Intelligence Technology"**

December 4-5, 2024, AzTU, Baku, Azerbaijan

🍦 **09:00 (Baku time, Hybrid) - link**   📍 **Main building, II floor, Haydar Aliev Center**

☕ **Coffee break 13:30-14:00 (Baku time, Hybrid)**

🕐 09:00-09:10

1. Igor Savin, Isag Khankishiyev, Asim Mirzayev, Jeyhun Rahimov, Rufat Abbasov, Gunay Dadashova
(Kazan National Research Technical University named after A.N.Tupolev – KAI, Azerbaijan State Marine Academy, Azerbaijan Technical University)

Processing of High-Speed Steels by Pulsed Laser Radiation

🕐 09:10-09:20

2. Alexander Shaparev, Asim Mirzayev, Malik Garayev, Sadaqat Mehdiyeva, Rufat Abbasov, Yusif Huseynov
(Kazan National Research Technical University named after A. N. Tupolev - KAI, Azerbaijan Technical University)

The Influence Gas Jet on The Quality Laser Cutting Metals

🕐 09:20-09:30

3. Alexander Shaparev, Iliya Avvakumov, Vagif Movlazade, Ugurlu Nadirov, Jeyhun Rahimov, Lachin Babayev
(Kazan National Research Technical University named after A. N. Tupolev - KAI, Azerbaijan Technical University, Azerbaijan State Marine Academy)

Technological Features Laser Cutting Copper And Brass

🕐 09:30-09:40

4. Igor Savin, Renat Gavariev, Mukhaddin Samadov, Elgun Shabiyev, Fazil Orujov (Kazan National Research Technical University named after A.N.Tupolev – KAI, Azerbaijan Technical University, Azerbaijan State Marine Academy)

On the Issue of Alloy Crystallization During Casting Into Metal Molds

🕐 09:40-09:50

5. Igor Balabanov, Vagif Movlazade, Nizami Yusubov, Heyran Abbasova, Ramil Dadashov
(Kazan National Research Technical University named after A. N. Tupolev – KAI, Kazan Federal University, Azerbaijan Technical University)

Development of a Parametric Model for Calculating Cutting Forces in External Cylindrical Turning of 20CrMn Steel (1.7147) Using an SNMG 15 06 16-PR 4425 Inser

🕐 09:50-10:00

6. Leonid Shipulin, Egor Shulezhko, Sadaqat Mehdiyeva, Konul Shammadova
(Head of UNID, Postgraduate student at SUSU, Azerbaijan Technical University)

Development of an Algorithm for Automatic Cutting Tool Selection

🕐 10:00-10:10

7. Andreas Bürger, Sylvio Simon, Pascal Dirk Fritzsche, Shalala Hasanli (BTU Cottbus – Senftenberg)

Sensor-Integrated Machine Elements - a Brief Overview of Products and Current Technical Developments

🕐 10:10-10:20

8. Ayaz Abdullaev, Qoshqar Rasulov
(Azerbaijan Technical University)

Design and Production Technology of Special Friction Clutch Inside Innovative Reducers of Railroad Switches

🕐 10:20-10:30

9. Viktor Artemyev, Natalia Mokrova, Beyali Ahmedov, Kaya Huseyin (Plekhanov Russian University of Economics, National Research Technological University MISIS, Azerbaijan Technical University, Bartin University)

Root Hodograph Method For Correcting Dynamic Properties of Control Systems

🕐 10:30-10:40

10. Viktor Artemyev, Natalia Mokrova, Shahid Yusubov, Anar Hajiyev (Plekhanov Russian University of Economics, National Research Technological University MISIS, Azerbaijan Technical University)

Equivalent Linear Transformation Method For Analysing Auto Oscillating Systems

🕐 10:40-10:50

11. Andrzej Dzierwa, Anita Ptak, Beyali Ahmedov, Anar Hajiyev (Rzeszow University of Technology, Wroclaw University of Science and Technology, Azerbaijan Technical University)

Surface Topography Improvement of 18CrNiMo7-6 Steel Using the Taguchi Technique

🕐 10:50-11:00

12. Aydin Gafarov, Isag Khankishiyev, Alihuseyn Haziyev, Irada Abbasova
(Azerbaijan State Marine Academy, Azerbaijan Technical University)

Study of Dynamic Characteristics of the Rotary Honing Process in the Processing of Non-Rigid Thin-Walled Parts

🕐 11:00-11:10

13. Arif Mamedov, Aqil Babayev, Mukhtar Huseynov, Beture Musurzayeva (Azerbaijan Technical University)

Mathematical Model of the Sintering Process of a Mixture of Mesoscale WC-Co Powders

🕐 11:10-11:20

14. Arif Mamedov, Afet Jafarova, Farid Jafarov
(Azerbaijan Technical University, Karabuk University)

Features of the Processes of Consolidation of Metal Powders Under The Influence of Electromagnetism

SECTION 6
second meeting
December 5

The 2nd International Scientific and Technical Conference on **"Infocommunication Systems and Artificial Intelligence Technology"**

December 4-5, 2024, AzTU, Baku, Azerbaijan

🕐 11:20-11:30

15. Afet Jafarova, Farid Jafarov, Fuad Jafarli
(Azerbaijan Technical University, Karabuk University, Columbia University)

Stress Distribution in the Matrices of End Friction Seals Under Loading

🕐 11:30-11:40

16. Rasim Bashirov, Alexander Egorov, Oyrad Abdullayev, Zaur Jafarov, Rahim Abdullayev
(Azerbaijan Technical University, Marine Engineering Bureau, ASCO Engineering Ltd., SOCAR, Diving department, Maritime University of Szszecin)

Research of Main Dimensions of New Generation Subsea Construction Vessels and Investigation of Influence of Choice of Diving Complex And Remotely Operation Vehicles on Concept Design Stage

🕐 11:40-11:50

17. Rasim Bashirov, Aynasa Rzaeva
(Azerbaijan Technical University, Azerbaijan Caspian Shipping Company)

Methodology of Induction Heating Applied for the Processing of Refractory Steels and Components with Heat-Resistant Surfaces

🕐 11:50-12:00

18. Rafik Huseynov, Ali Nasibov, Batura Musurzaeva, Sevil Rustamova (Azerbaijan Technical University, USA, Brooklyn, NY 11230)

The Influence of Sulfur And Phosphorus on the Formation of the Structure and Properties of Low-Carbon Low-Alloy Steel 09Г2АФ

🕐 12:00-12:10

19. Eldar Aliyev, Shebnem Ismailova
(Azerbaijan Technical University)

The Effect of the Ink Layer Thickness on the Optical Density of the Print

🕐 12:10-12:20

20. Eldar Aliyev, Isa Khalilov, Shebnem Ismailova
(Azerbaijan Technical University)

Ensuring the Stability of Sheet-Fed Offset Printing

🕐 12:20-12:30

21. Nizami İsmayilov, Fazil Orujov, Elkhan Mammadov, Lachin Babayev, Aga Shixseyidov (Azerbaijan State Marine Academy, Azerbaijan Technical University)

Features of Optimization of Pressing Modes of Powder Materials For Parts of Ship Mechanisms

🕐 12:30-12:40

22. Elvin Bakhtiyarli, Ali Safarli
(Azerbaijan Technical University)

The Impact of Corrosion on the Residual Lifespan of Crane Metal Structures

🕐 12:40-12:50

23. Mehemmed Maharramov
(Transport and Telecommunication Institute)

On the Overhaul of the Spillover Index: Connectedness amongst European Financial Institutions

🕐 12:50-13:00

24. Fariz Amirov, Ilgar Shiraliyev
(Azerbaijan Technical University)

Shaft Sleeve Failures and Solutions for Increase the Service Life

🕐 13:00-13:10

25. Sarvan Aziz (Azerbaijan Technical University)

The General Regularity of Surface Layer Work Hardening in the Honing Operation of Medium Carbon Steels

🕐 13:10-13:20

26. Orkhan Mustafaoglu (Azerbaijan Technical University)

Laboratory Testing of Exploded Water Meters

🕐 13:20-13:30

27. Afila Ahmadova, Esmira Mammadova, ShafaqTagiyeva (Azerbaijan Technical University)

Experimental Study of the Density of Geothermal Waters of the Gabala Region

🕐 14:00-14:10

28. Sarvan Aziz (Azerbaijan Technical University)

Increasing Processing Efficiency in Fine-Finishing Technology of Internal Cylindrical Surfaces by Technological Methods

🕐 14:10-14:20

29. Farid Huseynli (Azerbaijan Technical University)

Value of Diffusion Layer Thickness During Increasing the Hardening of Precision Parts by Laser Method

🕐 14:20-14:30

30. Aydin Muradaliyev, Simuzer Ismailova
(Azerbaijan Technical University)

Technology for Assessing the Feasibility of Taking Power Transformers Out for Repair

🕐 14:30-14:40

31. Konul Huseynzade (Azerbaijan Technical University)

A Six wheeled Rover-Rhombus System for a New Lunar Robotic Rover

🕐 14:40-14:50

32. Agasi Agayev (Azerbaijan Technical University)

Investigation of the Possibility of Controlling the Deformation of the Center Axis of a Workpiece Processed by Turning Due to the Cutting Force With A Digital Program

Final meeting
December 5

The 2nd International Scientific and Technical Conference on **"Infocommunication Systems and Artificial Intelligence Technology"**
December 4-5, 2024, AzTU, Baku, Azerbaijan

17:00 (Baku time, Hybrid)   Main building, room 211

FINAL MEETING OF THE CONFERENCE

1) Reports of department chairmen.

2) General discussions and relevant decisions.

3) Closing of the conference.