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15.	<b>Use of UAV in Areas Where it is Difficult to Ambient Air</b> Sherzod Pulatov, Otabek Djumaniyazov, Ibratbek Omonov, Utkir Matyokubov	1330
16.	<b>Development of a Digital Twin of an Industrial Manipulator Based on the Robot Operating System</b> Awad Peter adel Wakem, Mamonova Tatiana Egorovna	1340
17.	<b>Technology of 3D Printing of Objects With Carbon Adhesive</b> Rustam R. Farakhov, Rustam A. Burnashev, Marina V. Bolsunovskaya, Galim Z. Vakhitov	1350

Section VIII. Software Engineering and Cyber-Physical Systems  
Section Chair: **Vladimir E. Zyubin**

1. **Using the Simulink Simulation Package in the Practice of Creating Components of Digital Doubles of the Operating Conditions of Devices** 1360  
Maksim Sukhanov, Margarita Syabro, Gurgen Ambartsumyan, Kaleria Moroz, Nikolay Limarenko
2. **Tomographic Reconstruction in the Presence of Internal Radiation Sources on GPU Architecture** 1370  
Alexander V. Peshkov
3. **GIS Plugin for Planning Movement on Various Types of Roads** 1380  
Alexander Bychkov, Alexey Romanov
4. **Extracting RTA Location and Time from Russian News: Combining Traditional Methods with Llama LLM Validation** 1390  
Alexey Girin, Nikolay Teslya
5. **Streaming Hamiltonian Monte Carlo with Smooth Data Drift Adaptation** 1400  
Alexey V. Calabourdin, Konstantin A. Aksenov
6. **Modern Methods of Generating Pseudo Random Numbers: Advantages and Disadvantages** 1410  
Alisher Salayev, Ravshonbek Sultanov, Doniyor Ibadullaev, Saykhun Azimkulov, Shokhrukhbek Yuldoshev
7. **Graph Clustering for Application to the Shortest Path Search Problem** 1420  
Arthur Astakhov, Lyudmila Chernenkaia
8. **Using Algorithmic Complexity Metrics for Process-Oriented Specifications** 1430  
Artyom Abramenko, Vladimir Zyubin
9. **Verification Condition Generator for Revised Reflex Language Using Isabelle/HOL** 1440  
Artyom D. Ishchenko, Igor S. Anureev
10. **Unveiling Themes in Social Media Data: A Two-Stage Hashtag-Driven Clustering and Classification Method in Uzbek Language** 1450  
Rano Sayfullaeva, Raima Shirinova, Nilufar Abdurakhmonova
11. **Detecting and Analysing Cyber Attacks Based on Graph Neural Networks, Ontologies and Large Language Models** 1460  
Igor Kotenko, Georgii Abramenko
12. **Regelum: Graph Dependency Resolution and Execution Orchestration for Control Systems** 1470  
Georgiy Malaniya, Anton Bolychev, Pavel Osinenko, Grigory Yaremenko
13. **Generation of Isabelle/HOL Theory Focused on Proving Verification Conditions of PoST Programs and Based on Derived Requirement Patterns** 1480  
Ivan Chernenko, Igor Anureev
14. **Towards Verification Reflex Programs in the Rodin Platform** 1490  
Margarita Shabanova, Natalia Garanina
15. **A method of protecting a program from unauthorized use that is resistant to a brute force attack** 1500  
Marina Dyachkova, Ivan Nechta
16. **Anomaly Detection in Containerized Systems Based on System Call Histograms and Autoencoder Neural Network** 1510  
Igor Kotenko, Maxim Melnik
17. **Semi-Automated Framework for Feature Engineering in Machine Learning and Data Analysis** 1520  
Nikita Radeev, Kristina Vinogradova

18. <b>Challenges in Automating Error-Fixing Commit Classification for Linux Kernel and Cyber-Physical Systems</b>	1530
Nikolay Golovnev, Nikita Starovoytov, Sergey Staroletov	
19. <b>Using NLP Tools for Linking Materials Within the "Pushkin Digital" Resource</b>	1540
Nikolay Teslya	
20. <b>Linking Related Entities by Textually Described References</b>	1550
Georgii Sipovskii, Nikolay Teslya	
21. <b>Hybrid Analysis for Karakalpak Language: Combining Statistical Model and Rules-based Approach</b>	1560
Nodirbek Boltayev, Umid Kuziyev, Gulchehra Umurzakova, Bakhtiyar Rakhimov, Nargiza Inogamova, Nafisa Erimmetova	
22. <b>Multi-topic Classification of Uzbek Texts Using Rule-based System and Machine Learning</b>	1570
Nodirbek Boltayev, Marina Tsoy, Giyosiddin Abduvakhobov, Kunduz Ibodullayeva, Umida Askarova, Mukhlisa Rashidova	
23. <b>Foreign function interface for managed runtime systems with lightweight threading</b>	1580
Rinchin Zapanov	
24. <b>Simple Software for Training Artificial Neural Network Models Based on the Block Coding Approach</b>	1590
Sergei Smirnov, Anton Ivanov	
25. <b>Application of Machine Learning Methods and Hybrid Modeling for Predicting the Remaining Useful Life of Equipment</b>	1600
Vasiliy Alchakov, Vladislav Pisarev	

Section IX. Biomedical Electronics and Engineering  
Section Chairs: **Gennady S. Evtushenko, Konstantin S. Brazovskii,  
Vasilii I. Borisov**

1. **Assessment of Dose Loads and Radiation Risk as a Result of Exposure to Radon on Basement and Basement Workers in Novosibirsk** 1610  
Nikita Barilo, Evgeniy Udaltsov
2. **Recorder for the Diagnosis of Diseases Protein Markers** 1620  
Alina N. Eremina, Anastasia A. Cheremiskina, Danil E. Serdyuk, Daniel V. Shanshin, Victoria K. Grabezhova, Vladimir M. Generalov
3. **Use of Heart and Lung Auscultation Simulators** 1630  
A.A. Gorodova, A.K. Gerasimov
4. **Compression and Noise-tolerant Coding in Data Transmission in Non-invasive Electrocardiodiagnostic System** 1640  
Oksana Bezborodova, Andrey Bodin, Oleg Bodin, Mikhail Kramm, Mikhail Edemsky, Dmitry Martinov
5. **Simulation Models of Electrophysiological Signals Test Sequences for Monitoring Devices of Medical Diagnostics** 1650  
Margarita Sidorova, Anton Semin
6. **Formation of Carbon Nanomaterials Layers to Create Passive and Active Implantable Devices for Nerve Tissue Repair** 1660  
Denis Murashko, Ulyana Kurilova, Mikhail Savelyev, Sergey Selishchev
7. **Non-Volatile Resistive Switching of Coagulated Blood Film Based Biomemristor under Electric Field and UV Radiation** 1670  
Ekaterina Klyukina, Alexandr Vankaev, Sergey Koveshnikov, Mikhail Fedotov
8. **Development of the Gastro-AI Model for Diagnosing Gastrointestinal Diseases: Based on The Hyperkvasir** 1680  
Husan Olimboyev, Hasan Olimboyev, Gulora Razzakova, Jushkinbek Yuldoshev, Ikrom Djabbarov, Oygul Khujaniyozova
9. **An Improved Method for Assessing Psycho-emotional State Based on Analysis of Body's Functional Systems** 1690  
Oleg Bodin, Vasilii Zhigachev, Mikhail Edemskiy
10. **Modification of Convolutional Neural Networks for Brain Tumor Segmentation on MRI with Limited Computational Resources** 1700  
Nikita M. Gorlov, Anton A. Pashkov, Maxim A. Bakaev
11. **New Effects of Haloperidol** 1710  
Nina Pestereva, Vadim Sizov, Dmitrii Traktirov, Regina Cherkassova
12. **ECG-Based Biometric Identification: An Overview of Professional Equipment and Smartwatch Data** 1720  
Sofia Zhdanova, Anton Dolganov, Aleksei Zhdanov

Section X. Health Informatics and Digital Humanities  
Section Chairs: **Alexander N. Savostyanov, Grigoriy R. Khazankin,  
Vladimir E. Zyubin**

1. **Digital Organizational Culture is Component of Technology Transfer in the Educational Environment** 1730  
Ekaterina Sumina, Artem Badyukov, Alexander Goltsev
2. **Methods of Automatic Selection of Named Entities (NER) in Uzbek Language for Text Tone Analysis** 1740  
Bobur R. Saidov, Vladimir B. Barakhnin, Ulugbek T. Rixsibayev, Ogabek O. Sobirov, Khikmat M. Bekchanov, Elbek J. Sharipov
3. **Development of a Technology for Assessing the Risk of Psychosomatic Disorders in Russian and Foreign Students During Adaptation to Academic Stress** 1750  
Dmitri Lebedkin, Kseniya Zorina, Vladimir Bodur, Ekaterina Ivanova, Sergey Moiseev, Alexander Savostyanov
4. **Analysis of Equivalent EEG Dipoles During Cooperation and Competition in a Computer Game** 1760  
Dmitri Lebedkin, Andrey Bocharov, Sergei Tamozhnikov, Ekaterina Merkulova, Gennady Knyazev
5. **Validation of The Russian Version of the Broad Autism Phenotype Questionnaire in a Russian Speaking Sample of Neurotypical Subjects** 1770  
Dmitriy Kuleshov, Mikhail Vlasov, Evgeny Vergunov
6. **Employing Argumentation Patterns for Genre Classification of Scientific Communication Texts** 1780  
Ivan Pimenov, Natalia Salomatina
7. **Using Machine Learning Methods to Search for EEG and Genetic Markers of Depressive Disorder** 1790  
Kseniya Zorina, Andrey Kriveckiy, Darya Klemeshova, Andrey Bocharov, Vitaliy Karmanov
8. **Development of a Comprehensive Methodology for Assessing Executive Control Measures and Its Validation on Groups of Russian and Foreign Students** 1800  
Kseniya Zorina, Vladimir Bodur, Evgeny Vergunov, Marina Tolstova
9. **BPsim Decision System and Twin Intelligent Language Processing: Developing Domain-Specific Expert Systems** 1810  
Konstantin A. Aksyonov, Lina Sun, Olga P. Aksyonova, Elena K. Aksyonova, Igor A. Kalinin
10. **Depression Detection through EEG Signal Analysis: A Convolutional Autoencoder Deep Learning Model** 1820  
Neda Firoz, Olga Grigorievna Berestneva, Sergey Vladimirovich Aksyonov, Alexander Savostyanov
11. **Development of a Personalized Recommendation System with High Data Protection** 1830  
Olesya Palchunova
12. **Development of a Neurolinguistic Testing Technique to Identify Brain Self-Referential Processes** 1840  
Sofia Zlaia, Nadezhda Istomina, Valentina Stepanova, Vasily Savostyanov, Sergey Tamozhnikov
13. **Prediction of Anxiety Levels Based on Spatial-Frequency Patterns of EEG Activity During Perception of Another Person's Face** 1850  
Victor Lozhnikov

Section XI. Materials Science  
Section Chair: **Ivan A. Bataev**

1. **Sub-THz electrophysical properties of materials for 3D printing radio electronic equipment case** 1860  
Diana Pidotova, Daria Frolova, Alexander Badin, Ivan Vertoprakhov, Anton Elyasov, Daria Katelina
2. **Adsorption and Diffusion of In and Bi adatoms on (0001) surfaces of  $\beta$ -phase  $\text{In}_2\text{Se}_3$  and  $\text{Bi}_2\text{Se}_3$**  1870  
Anastasia Ryabishchenkova, Dmitry Rogilo, Vladimir Kuznetsov, Dmitry Sheglov, Alexander Latyshev
3. **Hybrid Nanostructures Based on Carbon Nanotubes and Graphene, Functionalized with BaO Nanoparticles having Improved Emission Properties** 1880  
Artem Kuksin, Yury Shaman, Evgeny Kitsyuk, Artem Sysa, Elena Eganova, Alexander Gerasimenko
4. **Influence of Generation and Recombination of Oxygen Vacancy-Ion Pairs on Non-Stationary Heat Transfer and Mass Transfer and Their Effect on the Memristor Electrical Properties** 1890  
Baurzhan Gabdulin, Alexander Busygin, Sergey Udovichenko
5. **Optical Properties of Hf-Ti-O Films Obtained by Atomic Layer Deposition** 1900  
Evgeny Khizhnyak, Vladimir Shayapov, Irina Yushina, Mikhail Lebedev
6. **Role of Organic Surfactants in Achieving Optimal Single-Walled Carbon Nanotube Dispersion Media for Biomedical Conductive Composite Coatings** 1910  
Kristina Popovich, Evgenia Kuznetsova, Pavel Vasilevsky, Sergey Selishchev, Alexander Gerasimenko
7. **Mechanochemical In Situ Formation of TiC in a Copper Matrix** 1920  
Tatiana Grigoreva, Natalya Ridel, Svetlana Kovaleva, Evgeniya Devyatkina, Sergey Vosmerikov
8. **Synthesis and Study of Al:HfO<sub>2</sub> Thin Films for Memristors. Structural and Properties** 1930  
Nikita Shulaev, Andrey Bobylev, Maxim Grigoriev, Nikita Azarapin, Sergey Udovichenko
9. **Phase Transformations Kinematic Model in Steel Austenization Process** 1940  
Vyacheslav Parmenov, Fedor Chmilenko, Yuriy Perevalov

# Symposium. Information Technologies, Networks and Telecommunications

## Symposium Chair: **Dmitriy E. Palchunov**

1. **Simulation Models of Sensor Network Nodes Placement Based on Various Distribution Laws** 1950  
Shahzod Sayidmurotov, Laylo Kadirova, Abdugofur Rakhimov, Gulnora Mirazimova
2. **Algorithm for Calculating Technical Parameters of IoT Sensor Reliability** 1960  
Alevtina Muradova, Svetlana Sadchikova, Mubarak Abdujapparova, Dilbar Normatova
3. **Results of Using Fuzzy Neural Subnetworks Method in Intelligent Data Analysis of Internet of Things Image Sensors** 1970  
Alevtina Muradova, Svetlana Sadchikova, Mubarak Abdujapparova, Dilbar Normatova
4. **Development of Clustering and Routing Algorithms in Wireless Sensor Networks** 1980  
Aybek Khaytbaev, Alevtina Muradova, Mubarak Abdujapparova, Svetlana Sadchikova, Dilbar Normatova
5. **AI-Driven Fraud Detection in Telecommunication Billing Systems** 1990  
Ernazar Reygnazarov, Zamira Allamuratova, Tazakhan Babazhanova, Roza Dauletmuratova
6. **Trends and Challenges in Software Engineering in Uzbekistan** 2000  
Yusupova Farogat, Niyozmatova Kumushoy, Masharipov Sanatbek
7. **Using Deep Learning to Detect DDoS Attacks at the Application Layer** 2010  
Hasan Olimboyev, Saida Khamrayeva, Husan Olimboyev, Omonboy Khalmuratov, Khikmat Rakhimboev, Bahodir Ibragimov
8. **Applying Biometric Technologies for Personalized Learning in Education Management Systems** 2020  
Munisa Otaboyeva, Ruza Sharifbaeva, Bakhodir Radjapov, Durдона Xaitbayeva, Sirojbek Sharipov, Azizbek Saparbayev
9. **Tracking the Long-Term Effects of Biometric Adaptive Learning on Student Habits and Performance** 2030  
Munisa Otaboyeva, Ruza Sharifbaeva, Bakhodir Radjapov, Durдона Xaitbayeva, Laylo Rakhimova, Tajieva Zebo
10. **Advanced Strategies for Network Security: Ensuring Resilience in a Digital World** 2040  
Majid M. Karimov, Ikbola M. Karimova, Temur T. Turdiyev
11. **Network Traffic Analysis and Optimization Using Network Analyzers: A Comparative Study** 2050  
Erkin Avazov, O'tkir Matyokubov, Zarina Kutlimuratova
12. **Development and Comparative Analysis of Algorithms for Detecting Dialect Words of the Uzbek Language** 2060  
Anvar Abdullayev, Bahodir Ibragimov, Alisher Ubaydullayev, Mehriniso Abdurazzakova, Nasiba Abdukadirova, Shukhrat Mustafakulov
13. **Analysis of Semantic Relatedness of Terms in Uzbek Electronic Corpus** 2070  
Anvar Abdullayev, Ulugbek Tuliev, Umida Askarova, Oktam Norboev, Mukhriddin Nuriddinov, Ayshe Aliyeva
14. **Dialect-Sensitive Sentiment Analysis for Uzbek News Content Using Traditional Methods** 2080  
Anvar Abdullayev, Shakhida Abdurazakova, Adina Egamberganova, Saodat Boysariyeva, Mahliyo Eshmatova, Gulshoda Shamsieva
15. **Development and Comparative Analysis of Classification Algorithms of Uzbek Taxpayer Complaints and Questions** 2090  
Davlatyor Mengliev, Nilufar Abdurakhmonova, Diloram Fattaxova, Erkin Avazov, Gulnora Khidirova, Nazokat Abdurakhmanova
16. **Educational Text Analysis in Uzbek: Developing an NER Algorithm for Academic and Pedagogical Content** 2100  
Davlatyor Mengliev, Diloron Nabiyeva, Asliddin Abdurakhmonov, Khudoyshukur Makhmudov, Abror Nuritdinov, Aziz Otemisov

17. <b>Evaluation of Transformer-Based Approaches for Sentiment Analysis in Uzbek</b>	2110
Davlatyor Mengliev, Ruzmat Safarov, Samariddin Kushmurotov, Zilolakhon Ruzmetova, Nizomjon Jumaniyazov, Dilrabo Xolbekova	
18. <b>Metadata-Driven Data Interoperability</b>	2120
Boburbek Babajanov, Lukas Hein, Fakhridin Kodirov, Mika Colin Tank, Azadeh Jalilian, Christian Schöninger	
19. <b>Methodology of Using Information Technologies in Literature Lessons in Secondary Schools</b>	2130
Shoira Bekchonova, Gulchekhra Abdullayeva, Khikmat Rakhimboev, Izzatbek Nafasov	
20. <b>Parallel Data Testing Algorithm in the "algo.ubtuit.uz" System</b>	2140
Janar Yusupova, Marks Matyakubov, Nilufar Rakhmonova, Ruzimboy Bekjanov, Sherzod Rajabov, Reyimberganov Bahrom	
21. <b>Osint Analysis Through Geolocation And Imagery: Practical Approaches</b>	2150
Javlonbek B. Uralov, Artem A. Ruzmetov	
22. <b>Using the MITRE ATT&amp;CK Framework in SOC Activities and Analyzing Cyber Attack</b>	2160
Javlonbek Uralov, Shokhidakhon Abdullaeva, Iskandarova Risolat, Mexribon Yusupova, Sardor Kutliev, Mansurbek Qazaqov	
23. <b>Teaching Cybersecurity with CTF: New Pedagogical Methods and Strategies</b>	2170
Adina Egamberganova, Umidbek Abdalov, Soniya Latipova, Shokir Ataev, Dilafruz Ismatova, Nazirakhon Ubaydullayeva	
24. <b>Neural Network-Based Approach to Literary Selection for Grades 5-9</b>	2180
Khabibulla Madatov, Sapura Sattarova	
25. <b>A Methodology for Extracting Basis Words from "Uzbek Primary School Corpus"</b>	2190
Khabibulla Madatov, Khajibaeva Surayyo	
26. <b>Using Artificial Intelligence Models to Assess Physical Activity for Children</b>	2200
Dildora Muhamediyeva, Laylo Rakhimova, Nafisa Ganijonova, Umidbek Babayazov, Dilafruz Atamuratova, Otanazar Jumaniyozov	
27. <b>Application of Mathematical Modeling Methods for the Analysis of Regulatorika of Living Systems</b>	2210
Mohiniso Hidirova, Anvar Abduvaliev, Margarita Gildieva, Abrorjon Turgunov, Alisher Shakarov	
28. <b>Numerical Modeling of Unsteady Heat Transfer in an Axisymmetric Body Made of Non-Homogeneous Material Using the Finite Element Method</b>	2220
Askhad Polatov, Akhmat Ikramov, Shikhnazar Sapayev, Marks Matyakubov	
29. <b>Medical Terminology Extraction Using Hybrid Approach for Uzbek Texts</b>	2230
Omonboy Khalmuratov, Matluba Yakubova, Bahodir Ibragimov, Gayratbek Nurimov, Laziza Bobokhujaeva, Nafisa Ganijonova	
30. <b>Development of Sentiment Analysis Algorithms of Uzbek Patient Reviews</b>	2240
Rano Sayfullaeva, Nilufar Abdurakhmonova, Shodiya Ganiyeva	
31. <b>Term-Driven Classification of Low-Resource Mathematical Documents in Uzbek language</b>	2250
Nodirbek Boltayev, Shoira Urazmetova, Sherzod Yakubov, Xudoyor Shonazarov, Muhabbat Jumaniyazova, Shahzod Fayzullaev	
32. <b>Information and Measuring System for Monitoring the Moisture Content of Grain and Grain Materials</b>	2260
Kalandarov Palvan, Avezov Nodirbek, Ataullaev Sherzod, Bozorov Gayrat, Qurbanbayev Mansurbek, Gulnoza Shermetova, Boyjanov Nodirbek Ilxomovich	
33. <b>A Method of Using a Scoring Algorithm to Find Similar Diagnoses in Medical Information Systems</b>	2270
Otabek Khujaev, Odamboyl Djumanazarov	
34. <b>Methodology for Teaching Programming Based on a Semiotic Approach</b>	2280
Sanobar Khakimova	

35. <b>Comparative Analysis of Decision Tree Algorithms for DotA 2 Match Outcome Prediction</b>	2290
Sukhrob R. Yangibaev, Madina R. Yangibaeva	
36. <b>Topological Properties of Geometric Figures in Computer Graphics and Virtual Modeling</b>	2300
Jamoljon Xudaykulovich Djumanov, Temur Rustamovich Khudayberganov, Bahrombek Ilhombekovich Sabirov, Temur Takhirovich Turdiyev, Javlonbek Bahodir ugli Uralov	
37. <b>Automation of Student Knowledge Assessment on the Basis of Neural Network Technology (on the example of programming subject)</b>	2310
Firnafas Yusupov, Davronbek Yusupov, Muyassar R. Allaberganova, Anorgul I. Ashirova	
38. <b>Adaptive Learning Program for Developing Professional Competence of Future Computer Science Teachers</b>	2320
Anorgul Ashirova, Muyassar Allaberganova, Raximjon Raximov	
39. <b>Methodology for Calculating the Share of Parking-Searching Vehicles in Traffic Congestion on Multi-Lane Roads</b>	2330
Gulirano Khalilova, Azimjon Rakhmonov, Rustam Samatov, Sayyora Razhapova, Erkinjon Abdusamatov, Shamshir Shermatov	
40. <b>Creation of an Educational Platform that Develops the Core Competencies of Engineers</b>	2340
Muyassar Allaberganova, Anorgul Ashirova, Bekchanov Yuldashovich	
41. <b>Information and Measurement Systems in Education</b>	2350
Kalandarov Palvan, Avezov Nodirbek, Ataullov Sherzod, Bozorov Gayrat, Qurbanbayev Mansurbek, Gulnoza Shermetova, Boyjanov Nodirbek Ilxomovich	
42. <b>The Advantages of Using Mathematical Apps in Teaching Mathematical Sciences in Uzbekistan Higher Education Institutions</b>	2360
Nizomjon Jumaniyazov, Sanjar Matkarimov, Umid Karimov	
43. <b>Kazakhstan's Experience in Training STEM Teachers</b>	2370
Galiya Zhusupkalieva, Maxot Rakhmetov, Bayan Kuanbayeva, Anar Tumysheva	
44. <b>Increasing the Efficacy of IoT Device Security Protocols</b>	2380
Zulaykho Kabulova, Onakhon Rustamova	
45. <b>Development of an Adaptive Control System for the Cutting Process Based on the Measurement of Thermoelectromotive Force on CNC Lathes</b>	2390
Abdunabi Abduvaliev	
46. <b>Development of a TDS Measurement System Based on Frequency Impedance Spectroscopy for Water Composition Analysis Integrated with a Well Water Level Meter</b>	2400
Farxat Rajabov, Jamoljon Djumanov, Khudoyarkhan Jamolov, Khusanov Urolboy	
47. <b>Algorithm for Controlling the Movement of an Intellectual Manipulator, Built on the Basis of a Mechatron Module According to the Specified Trajectory and Position</b>	2410
Temurbek Rakhimov, Utkir Matyokubov, Khurshid Sodikov	
48. <b>Application of Numerical Methods Based on Wavelet Transforms for Detection of Homogeneous Areas on Logging Diagrams</b>	2420
Alexander Vlasov, Stanislav Kraynikovskiy	
49. <b>Data Processing Methods and Algorithms Based on Sensor Fusion</b>	2430
Shukurolokh Ismoilov, Asal Babajanova, Doniyor Ibragimov, Allanazar Allanazarov, Zilola Khabibullaeva, Nafisa Erimmetova	
50. <b>Water Quality Forecasting Using a Hybrid Wavelet-ANFIS Model with Cross-Validation</b>	2440
Khudayshukur Kuzibaev, Tohir Urazmatov, Shavkat Ismailov, Umidjon Jurayev, Shakhlo Kuzieva	
51. <b>Accelerating Image Preprocessing with CUDA: High-Speed Gaussian Filtering and Brightness Enhancement</b>	2450
Mekhriddin Rakhimov, Shakhzod Javliev	

52. **Neural Network Synthesis Algorithms of Adaptive Position-trajectory Control Systems of Moving Objects** 2460  
**(in the Case of Multi-link Manipulators)**  
Oripjon Zaripov, Dildora Sevinova