2020 IEEE 2nd International Conference on Advanced Trends in Information Theory (IEEE ATIT 2020)

https:// atit.ieee.org.ua

e-mail: atit@ieee.org.ua

CONFERENCE PROGRAM

25.11.20 - 27.11.20

Kyiv

Ukraine

ORGANIZERS
- **IEEE Ukraine Section.**
- **IEEE Ukraine Section Information Theory Society Chapter.**
- National Academy of the Security Service of Ukraine.
- The National Defence University of Ukraine named after Ivan Cherniakhovskyi, Ukraine.
- National Aviation University of Kyiv, Ukraine.
- Kharkiv National University of Radio Electronics, Ukraine.
- National Aerospace University «Kharkiv Aviation Institute», Kharkiv, Ukraine.

PARTNERS
- Saycom Company Kyiv, Ukraine.

ORGANIZING COMMITTEE

CHAIR
- **Prof. Oleksand Yudin,** National Academy of the Security Service of Ukraine.

CHAIR \ IEEE Ukraine Section Information Theory Society Chapter.

TECHNICAL PROGRAM COMMITTEE CHAIR \ TPC CHAIR

CO-CHAIRS
- **Prof. Volodymyr Barannik,** Kharkov National University of Radio Electronics, Ukraine.
- **Prof. Mieczysław Drabowski**, Cracow University of Technology, Poland.

TECHNICAL PROGRAM COMMITTEE

- **Prof. Volodymyr Samotyy,** Kracow University of Technology, Poland.
- **Prof. Oleksandr Korchenko,** National Aviation University of Kyiv, Ukraine.
- **Prof. Vladimir Hahanov,** Kharkov National University of Radio Electronics, Ukraine
- **Prof. Oleksandr Rolik,** Igor Sikorsky Kyiv Polytechnic Institute, Ukraine.
- **Prof. Sergii Stirenko,** Igor Sikorsky Kyiv Polytechnic Institute, Ukraine.
- **Prof. Sergii Telenyk,** Igor Sikorsky Kyiv Polytechnic Institute, Ukraine.
- **Prof. Yuriy Ryabukha**, I.Kozhedub Kharkiv National Air Force University, Ukraine.
- **Prof. Oleg Fedorovich**, National Aerospace University «Kharkiv Aviation Institute», Kharkiv, Ukraine.
- **Prof. Vladimir Lukin**, National Aerospace University «Kharkiv Aviation Institute», Kharkiv, Ukraine.
- **Prof. Mykola Ponomarenko,** Senior Research Fellow Tampere University, Finland.
- **Prof. Dmytro Aheiev,** Kharkiv National University of Radio Electronics, Ukraine.
- **Prof. Serhiy Pogorily,** Taras Shevchenko National University of Kyiv, Ukraine.
- **Prof. Wojciech Guzewicz,** Uniwersytet Warminsko-Mazurski w Olsztynie, Poland.

CONFERENCE SECRETARY

- **Associate Prof. Viktoriia Ivannikova,** National Aviation University of Kyiv, Ukraine.

PUBLICATION CHAIRS

- **Prof. Sergy Sidchenko**, Kharkov National University of Radio Electronics, Ukraine

PROGRAM COMMITTEE

- Prof. Piotr Gawliczek, Uniwersytet Warminsko-Mazurski w Olsztynie, Poland.
- Prof. Volodymyr Khoma, Opole University of Technology, Opole, Poland.
- Prof.Wojciech Welskop, Rector of The Academy of Business and Health Sciences, Poland.
- Prof. Anna Walulik, Academy of Ignatianum in Krakow, Poland.
- Prof. Aleksandr Kuznetsov, V.N. Karazin Kharkiv National University, Ukraine.
- Prof. Oleksandr Lemeshko, Kharkiv National University of Radio Electronics, Ukraine.
- Prof. Hanna Khakhanova , Kharkov National University of Radio Electronics, Ukraine
- Prof. Iryna Klymenko, Igor Sikorsky Kyiv Polytechnic Institute Ukraine.
- Prof. Eduard Zharikov,Igor Sikorsky Kyiv Polytechnic Institute Ukraine.
- Prof. Oleksandr Rolik, Igor Sikorsky Kyiv Polytechnic Institute, Ukraine.
- Prof. Bogdan Kornienko, Igor Sikorsky Kyiv Polytechnic Institute, Ukraine.
- Prof. Ihor Tereikovskyi, Igor Sikorsky Kyiv Polytechnic Institute, Ukraine.
- Prof. Natalia Korolyova, Ukrainian State University of Railway Transport Kharkiv, Ukraine
- Associate Prof. Elena Chebanyuk, National Aviation University of Kyiv, Ukraine.
- Prof. Svetlana Loboda, National Aviation University of Kyiv, Ukraine.
- Prof. Hennadii Khalimov, Kharkiv National University of Radio Electronics, Ukraine.
- Prof. Emil Faure, Cherkasy State Technological University, Cherkasy, Ukraine.
- Prof. Valeriy Lakhno, National University of Life and Environmental Sciences of Ukraine, Ukraine.
- Prof. Oleksandr Potii, JSC Institute of Information Technology, Kharkiv, Ukraine.
- Prof. Mykhailo Shelest, Chernihiv Polytechnik National University (CPNU), Chernihiv, Ukraine.
- Prof. Volodymyr Buriachok, Borys Grinchenko Kyiv University, Kyiv, Ukraine.
- Prof. Vagif Gasimov, Azerbaijan Technical University, Baku, Azerbaijan
- Prof. Bakhytzhan Akhmetov, Abai Kazakh National Pedagogical University, Almaty, Kazakhstan.
- Olesya Afanasyeva, Pedagogical University in Technics Institute, Krakow, Poland.
- Valeriy Lakhno, National University of Life and Environmental Sciences of Ukraine.
- Dmytro Lande, Head of Department, Institute of Information Recording NAS of Ukraine, Kyiv, Ukraine.
- Serhii Yevseiev, Simon Kuznets Kharkiv National University of Economics, Kharkiv, Ukraine.
- Alla Kobozeva, Odessa national polytechnic university, Odessa, Ukraine.
- Ruslan Hryshchuk, Korolyov Zhytomyr Military Institute, Zhytomyr, Ukraine.
- Kateryna Molodetska, Zhytomyr National Agroecological University, Zhytomyr, Ukraine.
- Ivan Opirskyy, Lviv Polytechnic National University, Lviv, Ukraine.
- Oleksii Smirnov, Central Ukrainian National Technical University, Kropyvnytskyi, Ukraine.
- Associate Prof. Andrii Krasnorutsky, I.Kozhedub Kharkiv National Air Force University, Ukraine

- Associate Prof.Oleg Kulitsa, National University of Civil Defence of Ukraine, Cherkasy, Ukraine
- Associate Prof. Musienko Oleksandr, I.Kozhedub Kharkiv National Air Force University, Ukraine.
- Oleksandr Slobodyanyuk, Kamianets-Podilskyi National Ivan Ohiienko University.
- Associate Prof., Serhii Pidlisnii, Kharkov National University of Radio Electronics, Ukraine.
- Associate Prof. Albert Lekakh Kharkov National University of Radio Electronics, Ukraine.
- Roman Puhachov, National Technical University "Kharkiv Politechnic Institute".
- Associate Prof. Andrii Krasnorutsky, Kharkov National University of Radio Electronics, Ukraine.

LOCAL TECHNICAL COMMITTEE

- Oleh Suprun, Technical secretary, Taras Shevchenko National University of Kyiv, Ukraine.
- Associate Prof. Vitaliy Tverdokhlib, Technical secretary Track 1, Kharkov National University of Radio Electronics, Ukraine.
- Artem Kramov, Technical secretary Track 2, Taras Shevchenko National University of Kyiv, Ukraine.

CONFERENCE SECTIONS

25th November 2020

9.45 - 10.00 – **Registration** *(On-line session in Zoom).*

10.00-11.30 – **Opening of conference. Plenary reports / Part 1** *(On-line session in Zoom).*

Moderators:

Prof. Oleksandr Yudin, IEEE Ukraine Section Information Theory Society Chapter , Ukraine.
Associate Prof. Viktoriia Ivannikova, National Aviation University of Kyiv, Ukraine.

Technical secretary

Oleh Suprun, Taras Shevchenko National University of Kyiv, Ukraine.

10:00 - 10:15	***The role of IEEE in Ukraine. IEEE Ukraine Section.***	*Prof. Felix Yanovsky, CHAIR \ IEEE Ukraine Section. National Aviation University of Kyiv, Ukraine.*
10:15 - 10:30	***Research focus of the IEEE Ukraine Section of Information Theory Society Chapter.***	*Prof. Oleksandr Yudin, CHAIR \ IEEE Ukraine Section Information Theory Society Chapter. National Academy of the Security Service of Ukraine.*
10:30 - 10:45	***Analysis of methods for creating media for long-term data storage***	*Prof. Vyacheslav Petrov Academician of NAS of Ukraine, Institute for Information Recording of the National Academy of Sciences of Ukraine*

10:45 - 11:00	*Synthesis of the Structure of Multilevel Hierarchical Systems of Increased Survivability Based on a Subjective Probability Model*	*Prof. Yurii Kravchenko, Taras Shevchenko National University of Kyiv, Ukraine*
11:00 - 11:15	*Methodological fundamentals of deciphering coding of aerophotography segments on special equipment of unmanned complex.*	*Prof. Vladimir Barannik, Kharkov National University of Radio Electronics.* *Associate Prof. Sergii Shulgin, Kharkov National University of Radio Electronics.*
11:15 - 11:30	*Marginal Utility Approach for Quality of Service evaluation in IT infrastructure*	*Prof. Oleksandr Rolik. Igor Sikorsky Kyiv Polytechnic Institute, Ukraine.*
11:30 - 11:45	*An approach to better portable graphics (bpg) compression with providing a desired quality*	*Fangfang Li National Aerospace University – KhAI Kharkiv, Ukraine.* *Prof. Vladimir Lukin National Aerospace University – KhAI. Sergey Krivenko National Aerospace University – KhAI Kharkiv, Ukraine. Kharkiv, Ukraine*

11:45 - 12:00	*Three-pass cryptographic protocol based on permutations*	*Prof. Emil Faure, Cherkasy State Technological University, Cherkasy, Ukraine.* *Associate Prof. Shcherba Anatoly, Cherkasy State Technological University, Cherkasy, Ukraine.*
12:00 - 12:15	*Determination of signs of information and psychological influence in the tone of sound sequences*	*Prof. Oleksandr Korchenko, National Aviation University, Kyiv, Ukraine.* *Prof. Ihor Tereikovskyi, National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", Kyiv, Ukraine*

12.15-13.00 –Technical break.
13.00-17.30 – Parallel working Tracks groups.

Track 1

Moderators:

Prof. Volodymyr Barannik, Kharkov National University of Radio Electronics, Ukraine.

*Technical s*ecretary:

Associate Prof., Vitaliy Tverdokhlib, Kharkov National University of Radio Electronics, Ukraine.

Track ID - 1	Track 1 Title **Information and Encoding Theory**	Author	Number of accepted papers
Tr.1.1	An approach to better portable graphics (bpg) compression with providing a desired quality	Fangfang Li, Sergey Krivenko, Vladimir Lukin	*23*
Tr.1.2	The Model of Production Complex Elements States Discrete Encoding	Iana Savitskaya Victor Smolii Vitalii Shelestovskii	*48*
Tr.1.3	Comparison of Floating-Point Numbers Absolute Values when Representation of the Exponents with Sign-Inverse Two's Complementary Code	Oleksandr Samoshchenko Heorhii Marhiiev Oleksandr Miroshkin	*11*
Tr.1.4	Technology for protecting video information resources in the info-communication space	Vladimir Barannik, Sergy Sidchenko, Dmitry Barannik	*61*
Tr.1.5	Constructing the code description of the transformant dct taking into account their structural features	Natalia Barannik, Kateryna Zakomorna, Vitaliy Tverdokhlib, Nataliya Vorontsova, Eliseev Evgeniy, Vitalii Shmakov	*65*

Tr.1.6	Methodological fundamentals of deciphering coding of aerophotography segments on special equipment of unmanned complex	Vladimir Barannik, Sergii Shulgin, Andrii Krasnorutsky, Oleksandr Slobodyanyuk, Pavlo Gurzhii, Natalia Korolyova	*66*
Tr.1.7	Advanced method of movement compensation in video coding technologies	Victoriya Himenko Olexandr Shaigas, Oleksii Kolomiitsev, Oksana Stetsenko, Evgeniy Eliseev	*67*
Tr.1.8	The analysis of the internal restructuring method efficiency used for a more compact representation of the encoded data	Valeriy Barannik, Ivan Tupitsya, Olexandr Kovalenko, Yevhenii Sidchenko, Valerii Yroshenko, Oleg Stepanko	*69*
Tr.1.9	Significant microsegment transformants encoding method to increase the availability of video information resource	Volodymyr Barannik, Valeriy Barannik, Olena Matviichuk-Yudina, Yurii Babenko, Andriy Khimenko, Oleg Kulitsa	*70*
Tr.1.10	Method of indirect steganographic coding of information without visual distortion of the video container series	Yuriy Ryabukha, Natalia Barannik	*72*
Tr.1.11	Intelligent multi-service platform for building management	Oleksandr Prokhorov Yurii Pronchakov Oleg Fedorovich	*16 poster*
Tr.1.12	Method of encoding binary structures of stationary component of video stream	Oleksandr Yudin, Anna Hahanova, Olexandr Shaigas Serhii Pchelnikov, Vitalii Shmakov, Maksym Parkhomenko	*62 poster*
Tr.1.13	Fast coding of irregular binary binomial numbers with a set number of units series	Valeriy Barannik	*71 poster*

Tr.1.14	The method of embedding information in the noise domain based on the modification of elements in the pseudo-spatial domain	Natalia Barannik, Oleksandr Yudin, Ali Bekirov, Volodymyr Manakov, Mykhailo Babenko, Valerii Yroshenko	*73 poster*
Tr.1.15	Stegano-compression coding in a non-equalible positional base	Dmitry Barannik	*74 poster*
Tr.1.16	Decoding method of information-psychological destructions in the phonetic space of information resources	Tatyana Belikova	*80 poster*
Tr.1.17	Research of Features and Possibilities of Modern Real Time Video Services	Olha Suprun, Viktor Matviichuk, Yurii Babenko, Anton Sorokun, Serhii Voskoboinikov, Oleh Suprun	*102 poster*
ACCEPTED PAPERS, TOTAL		*17*	
SUBMITTED PAPERS, TOTAL		*18*	
ACCEPTANCE RATE		*0.94*	

26th November 2020

10.00-16.00 – Parallel working Tracks groups.

Track 2

10.00 - 16.00 – **Track 2** *(On-line session in Zoom).*

Moderators:
Prof. Yurii V. Kravchenko, Taras Shevchenko National University of Kyiv. Ukraine.
Prof. Sergiy D. Pogorilyy, Taras Shevchenko National University of Kyiv, Ukraine.

Secretary:
Artem Kramov, Taras Shevchenko National University of Kyiv, Ukraine.

Track ID - 2	Track Title Communication Theory	Author	Number of accepted papers
Tr.2.1	Design and Simulation of Synchronization Systems in Telecommunications with QPSK	Ilya Pyatin Juliy Boiko Oleksander Eromenko	*13*
Tr.2.2	Face recognition systems based on Neural Compute Stick 2, CPU, GPU comparison	Oleksandra Aleksandrova Yevgen Bashkov	*14*
Tr.2.3	Factors affecting synchronization time of tree parity machines in cryptography	Mykyta Aleksandrov Yevgen Bashkov	*15*
Tr.2.4	Method of trajectory control uav in autonomous flight mode using neural network melm algorithm	Oleksii Fesenko Robert Bieliakov Hrygorii Radzivilov Volodymyr Hulii Oleh Kovalchuk Liudmyla Korotchenko	*27*
Tr.2.5	Correlation network of concepts determined by the dynamics of publications	Dmytro Lande Leonard Strashnoy Iryna Balagura	*49*
Tr.2.6	New Traffic Model of M2M Technology in 5G Wireless Sensor Networks	Andrew Bulashenko Stepan Piltyay Alina Polishchuk Oleksandr Bulashenko	*52*
Tr.2.7	Flight safety fuzzy risk assessment for combat aviation system	Yevhen Honcharenko Oleksii Martyniuk Oleh Radko Oleksandr Blyskun Yurii Kolomiiets Mykola Bilokur	*60*

Tr.2.8	Synthesis of the Structure of Multilevel Hierarchical Systems of Increased Survivability Based on a Subjective Probability Model	Viktor Bondarenko Yurii Kravchenko Serhii Salkutsan Maksym Tyshchenko	82
Tr.2.9	Secure Based Traffic Engineering Model in Softwarized Networks	Oleksandr Lemeshko Oleksandra Yeremenko Maryna Yevdokymenko Anastasiia Shapovalova Tamara Radivilova Dmytro Ageyev	87
Tr.2.10	Determining the effectiveness of signals detection during search	Erokhin V. F Romanov O. M. Nikolaev S. N.	98
Tr.2.11	The Network Reliability Assessment and Risk Prevention Measures for the Power System of Kazakhstan Due to High Renewables	Svetlana Zhakiyeva Bekzhan Mukatov Rustam Nassirkhan Nurkhat Zhakiyev	105
Tr.2.12	Mathematical Model for Heterogeneous Databases Parameters Estimation in Distributed Systems with Dynamic Structure	Vadym Mukhin Yaroslav Kornaga Viktor Bondarenko Valerii Zavgorodnii Oksana Herasymenko Oleksii Sholokhov	106
Tr.2.13	Methods of Assessing the Scientific Activity of Scientists and Higher Education Institutions	Andrii Biloshchytskyi Alexander Kuchansky Yurii Andrashko Aidos Mukhatayev Sapar Toxanov Adil Faizullin	111
Tr.2.14	Hierarchical model of a complex of IoT devices based on the use of a wireless sensor network	Yrii Afanasiev Volodymyr Afanasiev Oleksii Sitkov Valerii Chystov Vitalii Surhai Serhii Fediuk	114

Tr.2.15	The method of improving the quality of signal detection by accounting for interference	Oleksandr Laptiev Igor Polovinkin Savchenko Vitalii Oleh Stefurak Oleg Barabash Olena Zelikovska	*10* *poster*
Tr.2.16	The new method for detecting signals of means of covert obtaining information	Oleksandr Laptiev Savchenko Vitalii Serhii Yevseiev Halyna Haidur Sergii Gakhov Spartak Hohoniants	*17* *poster*
Tr.2.17	The Results of System Analysis of Functional Diagrams and Operation Algorithms of Tracking Systems of Tracking Radar of Antiaircraft Missile Armament With Digital Processing of Error Signal	I. Sachuk P. Kushch A. Kalyta P. Open'ko V.Orlenko S. Bondarenko	*19* *poster*
Tr.2.18	Intellectual fuzzy system air pollution control	Yuri Kravchenko Olga Leshchenko Nataliia Dakhno Vladyslav Deinega Halyna Shevchenko Oleksandr Trush	*24* *poster*
Tr.2.19	Usage of Fourier transformation in theoretical studying of signals in data transmission	Andriy Makarchuk Inna Kal'chuk Yurii Kharkevych Tetiana Voloshyna	*38* *poster*
Tr.2.20	Usage of Fourier transformation theory in machine translation	Galyna Kharkevych Yurii Kharkevych Inna Kal'chuk Valentyn Sobchuk	*44* *poster*
Tr.2.21	Development of an all-based method using blockchain technologies and cuda technologies	Tetiana Domkiv Andriy Dudnik Nataliia Dakhno Volodymyr Kvasnikov Olexander Trush Serhii Dorozhynskyi	*63* *poster*

Tr.2.22	Algorithm of control of functionally stable manufacturing processes of enterprises	Valentyn Sobchuk Volodymyr Pichkur Oleg Barabash Oleksandr Laptiev Kovalchuk Igor Amina Zidan	*75* *poster*
Tr.2.23	Intrusion and fire detection method by wireless sensor network	Andriy Dudnik Pokutnia Daria Mykyta Kobylchuk Tetyana Domkiv Natalia Dahno Olga Leshchenko	*76* *poster*
Tr.2.24	Modeling of solving stabilized differential equations by differential-Taylor transformations	Mykhailo Rakushev Yurii Kravchenko Oleksandr Permiakov Oleksandr Lavrinchuk Vasyl Bychenkov Valerii Krainov	*86* *poster*
Tr.2.25	Methods for predicting adjustments to the rates of modern "digital money"	Olga Leshchenko Olexander Trush Natalia Dahno Andriy Dudnik Karina Kazintseva Olexander Kovalenko	*92* *poster*
Tr.2.26	Modeling the characteristics of the stabilization circuit of a hypothetical dynamic system	Sergii M. Korotin Anatolii G. Salii Yurii P. Tselischev Ivan P. Korovin Andrii V. Kotsiuruba Yurii M. Kolomiets	*101* *poster*
Tr.2.27	Information model of decision support in the design of information and communication systems based on the customer's profile	Viacheslav Riabtsev Yurii Kravchenko Serhii Salkutsan Maksym Tyshchenko Dmytro Sharadkin Viktor Bondarenko	*103* *poster*

Tr.2.28	Analysis of methods for creating media for long-term data storage	Vyacheslav Petrov Ievgen Beliak Andriy Kryuchyn Alexey Shikhovets	*115* *poster*
Tr.2.29	Research on the formation level of methodological competence of IT disciplines teachers	Andrii Biloshchytskyi Serik Omirbayev Aidos Mukhatayev Adil Faizullin Sapar Toxanov Khanat Kassenov	*116* *poster*
Tr.2.30	Hidden Transmitter Localization Accuracy Model Based on Multi-Position Range Measurement	Vitalii Savchenko Oleksandr Laptiev Oleksandr Kolos Rostyslav Lisnevskyi Viktoriia Ivannikova Ivan Ablazov	*118* *poster*
ACCEPTED PAPERS, TOTAL		*30*	
SUBMITTED PAPERS, TOTAL		*38*	
ACCEPTANCE RATE		*0.78*	

26th November 2020

10.00-16.00 – Parallel working Tracks groups.

Track 3

10.00 - 14.00 – Track 3 *(On-line session in Zoom).*

Moderators:
Prof. Oleksandr Korchenko, National Aviation University of Kyiv, Ukraine.
Prof. Ihor Tereikovskyi, Igor Sikorsky Kyiv Polytechnic Institute, Ukraine.
Prof. Emil Faure, Cherkasy State Technological University, Cherkasy, Ukraine.

Secretary:
Yurii Dreis, Technical secretary, National Aviation University, Kyiv, Ukraine

Track ID - 3	Track Title **Technologies of Informative Security**	Author	Number of accepted papers

Tr.3.1	The use of a genetic algorithm in the problem of distribution of information security organizational and financial resources	Valeriy Lakhno Andrii Blozva Bakhytzhan Akhmetov Rzaieva Svitlana Saltanat Adilzhanova Rzaiev Dmytro	*32*
Tr.3.2	Method of fuzzy classification of information with limited access	Serhii Falchenko Aleksandr Korchenko Vitalii Hrebeniuk Iryna Manzhul Alla Hrebeniuk Yurii Dreis	*34*
Tr.3.3	Detection and testing of dependencies between input and output data in the implementation of multi-digit algorithms in a parallel computational model	Andrii Tereshchenko Valeriy Zadiraka	*58*
Tr.3.4	Counteraction to strategic manipulations on actors' decision making in social networking services	Kateryna Molodetska	*81*
Tr.3.5	Methods of security authentication and authorization into informational systems	Korchenko Anna Kazmirchuk Svitlana Kryvoruchko Olena Synichuk Olena Kostiuk Mykhailo Zakharov Rostyslav	*89*
Tr.3.6	Determination of signs of information and psychological influence in the tone of sound sequences	Oleksandr Yudin Oleksandr Korchenko Ihor Tereikovskyi Serhii Toliupa Liudmyla Tereikovska Oleh Tereikovskyi	*91*
Tr.3.7	Three-pass cryptographic protocol based on permutations	Emil Faure Shcherba Anatoly Lavdanska Olha	*97*
Tr.3.8	Protection of information in assessing the factors of influence	Tsiutsiura Mykola Terentiev Oleksandr Tsiutsiura Svitlana Kyivska Kateryna Yerukaiev Andrii Kuleba Mykola	*104*
	ACCEPTED PAPERS, TOTAL	*12*	

SUBMITTED PAPERS, TOTAL	*8*	
ACCEPTANCE RATE	*0.67*	

27th November 2020

10.00-18.00 – Parallel working Tracks groups.
12.30-13.00 –Technical break.

Track 4

10.00 - 18.00 – Track 4 *(On-line session in Zoom).*

Moderators:
Prof.   Oleksandr Rolik, Igor Sikorsky Kyiv Polytechnic Institute, Ukraine.
Prof.   Bogdan Korniyenko, Igor Sikorsky Kyiv Polytechnic Institute, Ukraine.

Secretary:

Oleg Suprun, Technical secretary, Taras Shevchenko National University of Kyiv, Ukraine.
Artem Kramov, Technical secretary, Taras Shevchenko National University of Kyiv, Ukraine.

Track ID – 4	Track Title **Information Technologies and Artificial Intelligence**	Author	Number of accepted papers
Tr. 4.1	Synthesis of high-speed Neuro-Fuzzy controllers based on FPGA	Petro Kravets, Viacheslav Nevolko, Volodymyr Shymkovych, Lyubov Shymkovych	*6 poster*
Tr. 4.2	Evaluation of the Coherence of Ukrainian Texts Using a Transformer Architecture	Artem Kramov, Sergiy Pogorilyy	*7*
Tr.4.3	Nonparametric Multiple Comparison Test for Change-Point Detection in Big Data	Dmitriy Klyushin, Kateryna Golubeva	*18*
Tr.4.4	Control System for the Production of Mineral Fertilizers in a Granulator with a Fluidized Bed	Bogdan Korniyenko, Lesya Ladieva, Liliya Galata	*21 poster*
Tr.4.5	System of Control of the Process of Alkylation of Benzene with Peripene in the Liquid Phase	Lesya Ladieva, Tetiana Klusta, Zvenyslava Kozanevych Bogdan Korniyenko	*22 poster*

Tr.4.6	Information Technology for the Recognitionof Semi-Precious Minerals	Mikhail Polishchuk, Mikhail Tkach	*25*
Tr.4.7	Cyber-physical-logistical systems: state-of-the-art	Illia Holovatenko, Andrii Pysarenko	*26* *poster*
Tr.4.8	Adaptive algorithm for variational inequality problem over the set of solutions the equilibrium problems	Sergey Denisov, Vladimir Semenov, Yana Vedel	*28*
Tr.4.9	Mathematical Modeling of Iris-Post Sections for Waveguide Filters, Phase Shifters and Polarizers	Andrew Bulashenko, Stepan Piltyay, Yelyzaveta Kalinichenko, Oleksandr Bulashenko	*29*
Tr.4.10	Semi-Markov mathematical model of a complex radioelectronic system operation process with limited possibilities the internal control means	Volodymyr Mirnenko, Serhii Kitik, Oleksandr Globa, Oleksyi Chornobryvchenko, Dmytro Rieznik, Mykhailo Levchenko	*30*
Tr.4.11	New Tunable Iris-Post Square Waveguide Polarizers for Satellite Information Systems	Stepan Piltyay, Andrew Bulashenko, Hanna Kushnir, Oleksandr Bulashenko	*31*
Tr.4.12	Development of a classifier for the system of automatic document processing with limited sampling	Anton Korotynskyi, Oleksii Zhuchenko	*33*
Tr.4.13	Machine Learning to Improve Numerical Weather Forecasting	Anatoliy Doroshenko, Vitalii Shpyg, Roman Kushnirenko	*37* *poster*
Tr.4.14	FDTD and FEM Simulation of Microwave Waveguide Polarizers	Stepan Piltyay, Andrew Bulashenko, Yevhenii Herhil, Oleksandr Bulashenko	*43*

Tr.4.15	Static Analysis of Resource Consumption in Programs Using Rewriting Rules	Tural Mamedov, Anatoliy Doroshenko, Ruslan Shevchenko	*46* *poster*
Tr.4.16	Generative Adversarial Neural Network for Creating Photorealistic Images	Oleksandr Striuk, Yuriy Kondratenko, Ievgen Sidenko, Alla Vorobyova	*54*
Tr.4.17	Paraphrase Identification Using Dependency Tree and Word Embeddings	Vitalii Vrublevskyi, Oleksandr Marchenko	*64*
Tr.4.18	Multimodular cyberphysical systems: challenges and existing solutions	Yosyp Albrekht, Andrii Pysarenko	*68* *poster*
Tr.4.19	Marginal Utility Approach for Quality of Service evaluation in IT infrastructure	Oleksandr Rolik, Valerii Kolesnik	*78*
Tr.4.20	Analysis of the Calculus Basis Boundary for Redundant Codes	Vadym Poltorak	*84* *poster*
Tr.4.21	Image Segmentation in Loss Detection for Conservation and Restoration of Old Paintings	Roman Mykolaichuk, Vladyslav Lavrynovych, Antonina Mykolaichuk, Tetiana Tymchenko, Iryna Somyk-Ponomarenko	*90*
Tr.4.22	A Method to Ranking Reliability of Sensors of Multisensor System: Interval-Valued Number Case	Mykhailo Popov, Alpert Sofiia, Alpert Maksym, Oleksandr Zaitsev, Ruslana Stambirska	*93*
	ACCEPTED PAPERS, TOTAL	*22*	
	SUBMITTED PAPERS, TOTAL	*37*	
	ACCEPTANCE RATE	*0.59*	