

**Ministry of Education and Science of Ukraine  
Odessa City Council  
Odessa State Environmental University  
Odessa National University of a name I. I. Mechnikov  
Odessa State Academy of Technical Regulation and Quality  
Kharkiv National University of Radio Electronics  
“D. A. Tsenov” Academy of Economics, Bulgaria  
Institute of Special Communications and Information Protection KPI n.a. Igor Sikorsky  
AGH University of Science and Technology  
University of Bielsko-Biala, Poland  
University North, Republic of Croatia  
Polish Academy of Sciences Scientific Center in Kiev  
University of Lodz, Poland  
Lodz University of Technology, Poland**



## **PROGRAM**

**International Scientific and Practical Conference**

**«INTELLECTUAL SYSTEMS  
AND  
INFORMATION TECHNOLOGY»**

**19 – 24 August 2019**

**Odesa**

## CO-CHAIRMEN

**Stepanenko S.**, rector of OSENU, Doctor of Physical and Mathematical Sciences, professor  
**Koval I.**, rector of ONU, Doctor of Political Sciences, professor  
**Kolomiets L.**, rector of OSATRQ, Doctor of Technical Sciences, professor

## PROGRAM COMMITTEE

**Bezkorovainyi V.**, Dr. of Tech.Sc., prof. (Ukraine)  
**Bychkov O.**, Dr. of Tech.Sc., prof. (Ukraine)  
**Buriachok V.**, Dr. of Tech.Sc., prof. (Ukraine)  
**Volkov V.**, Dr. of Tech.Sc., prof. (Ukraine)  
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**Luzhetskyi V.**, Dr. of Tech.Sc., prof. (Ukraine)  
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**Maślanka P.**, Dr. of Tech.Sc., prof. (Poland)  
**Milczarski P.**, PhD, associated prof. (Poland)  
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**Mescheryakov V.**, Dr. of Tech.Sc., prof. (Ukraine)  
**Mirzoakhmedov F.**, Dr. of Tech.Sc., prof. (Tajikistan)  
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**Rychlik A.**, PhD, associated prof. (Poland)  
**Sobczuk H.**, prof. (Poland)  
**Syniehlazov V.**, Dr. of Tech.Sc., prof. (Ukraine)  
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**Sharonova N.**, Dr. of Tech.Sc., prof. (Ukraine)  
**Semenets V.**, Dr. of Tech.Sc., prof. (Ukraine)  
**Shevchenko A.**, Dr. of Tech.Sc., prof., Corresponding member of NSAU (Ukraine)  
**Shvorov S.**, Dr. of Tech.Sc., prof. (Ukraine)  
**Shyshmanov K.**, Dr. of Econ.Sc., prof. (Bulgaria)  
**Shumeiko O.**, Dr. of Tech.Sc., prof. (Ukraine)  
**Svjatnyj V.**, Dr. of Tech.Sc., prof. (Ukraine)  
**Weyrich M.**, Prof. Dr.-Ing. Dr. h. c. (Germany)

## **ORGANIZING COMMITTEE**

### **Deputies**

**Gunchenko Y.**, Dr. of Tech.Sc., prof., ONU  
**Kazakova N.**, Dr. of Tech.Sc., prof., OSATRQ  
**Kuznichenko S.**, PhD, associated prof., OSENU

### **Responsible secretary**

**Kuznichenko S.**, PhD, associated prof., OSENU

### **Working group**

**Hrabovskyi O.**, PhD, associated prof., OSATRQ  
**Fraze-Frazenko O.**, PhD, associated prof., OSATRQ  
**Kovalenko L.**, PhD, associated prof., OSENU  
**Kozlovska V.**, PhD, associated prof., OSENU  
**Perelygin B.**, PhD, associated prof., OSENU  
**Kobziev V.**, PhD, s.r.s., NURE  
**Popov V.**, department of information and public relations of the Odesa city council  
**Shuptar-Poryvaieva N.**, Head of the Scientific Society of Young Scientists, OSENU

### **Technical group**

**Buchynska I.**, Postgraduate Student OSENU  
**Zabozhan O.**, Head of the laboratory, OSENU  
**Yakovenko G.**, first class technician, OSENU  
**Zui O.**, senior laboratory assistant, ONU

## CALENDAR PLAN OF THE CONFERENCE WORK

### Monday, 19 August

- 09<sup>00</sup> – 18<sup>00</sup> – Arrival of participants. Check in.
- 17<sup>00</sup> – 19<sup>00</sup> – Registration (Hotel of the Odessa State Environmental University, Lvivska street 15/1, entrance from the street. Makarenko)

### Tuesday, 20 August

- 9<sup>00</sup> – 11<sup>00</sup> – Registration (The main building of Odessa Environmental University, Lvivska street 15)
- 11<sup>00</sup> – Conference opening
- 11<sup>30</sup> – Plenary session
- 13<sup>30</sup> – 14<sup>30</sup> – Lunch break
- 15<sup>00</sup> – 18<sup>30</sup> – Plenary session
- 18<sup>30</sup> – Dinner

### Wednesday, 21 August

- 9<sup>00</sup> – 12<sup>00</sup> – Round table. Presentation of dissertation works
- 12<sup>00</sup> – 13<sup>30</sup> – Lunch break
- 14<sup>00</sup> – 18<sup>00</sup> – Special sessions

### Thursday, 22 August

- 9<sup>00</sup> – Excursion
- 14<sup>00</sup> – 16<sup>00</sup> – Lunch break
- 16<sup>00</sup> – 19<sup>00</sup> – Special sessions

### Friday, 23 August

- 8<sup>30</sup> – Outgoing meeting (Mayaky, OSENU Research Center)
- 13<sup>30</sup> – 15<sup>00</sup> – Lunch break
- 15<sup>00</sup> – 17<sup>30</sup> – Special session
- 17<sup>30</sup> – Departure to Odessa

### Saturday, 24 August

- 10<sup>00</sup> – 12<sup>00</sup> – Final meeting of the Organizing and Program Committees

## RECOMMENDED REGULATION OF THE CONFERENCE WORK

- Speech in plenary session - up to 25 minutes
- Speech at a breakout session - up to 15 minutes

## **OPENING, INTRODUCTION WORD**

Tuesday, 20 August

11<sup>00</sup> – 11<sup>30</sup>

**Stepanenko S.**, rector of OSENU, Doctor of Physical and Mathematical Sciences, professor

**Koval I.**, rector of ONU, Doctor of Political Sciences, professor

**Kolomiets L.**, rector of OSATRQ, Doctor of Technical Sciences, professor

**Gunchenko Y.**, Dr. of Tech.Sc., prof., ONU

**Kazakova N.**, Dr. of Tech.Sc., prof., OSATRQ

**Kuznichenko S.**, PhD, associated prof., OSENU

## **PLENARY SESSION**

11<sup>30</sup> – 18<sup>30</sup>

### **1. Quantifying Preferences in Choosing Multiple Criteria Decisions**

Valery Semenets, Volodymyr Beskorovainyi (Kharkiv, Ukraine)

### **2. A Limit of Digitalization in 5G Technology Period**

Andrzej Rychlik (Lodz, Poland)

### **3. Telecommunication Technologies of the Unified National Synchronous Information System**

Valerii Koval, Vitaliy Lysenko, Mykola Khudyntsev, Mykhaylo Klymash, Dmytro Kalian, Borys Kravchenko (Kyiv, Ukraine)

### **4. Using Spherical Splines in Computer Graphics**

O.Shumejko (Kamianske, Ukraine)

### **5. APIs and Web Services Consolidation**

Denis Trček (Ljubljana, Slovenia)

### **6. Intelligence System For Emotional Facial State Estimation During Inspection Control**

Viktor Sineglazov, Roman Pantyeyev, Ilya Boryndo (Kyiv, Ukraine)

### **7. The First Single Platform for E-Democracy “EDEM”**

I. Kopychenko (Odesa, Ukraine)

### **8. Toward the Methodology for Considering Mentality Properties in eGovernment Problems**

Alexander Makarenko (Kyiv, Ukraine)

### **9. Mathematical Fibonacci-Processors of High Reliability**

Volodymyr Luzhetskyi (Vinnitsa, Ukraine)

### **10. Problems and Prospects of Practical Application of Blockchain Information Technology in Smart-Contracts**

N.V. Sharonova (Kharkiv, Ukraine)

### **11. Blockchain as a transaction protocol for guaranteed transfer of values between digital twins**

R. Kravchenko (Odesa, Ukraine)

## SPECIAL SESSIONS

### SECTION: INFORMATION TECHNOLOGIES

Wednesday, 21 August

14<sup>00</sup> – 18<sup>00</sup>

**Heads of section:** Bychkov O,  
Golub S.

1. **Methods of Virtual Environment Design on Basis of UML Diagrams and Petri Nets**  
S. Antoshchuk, Y. Troianovska
2. **General Methodical Approach to Cognitive Modeling of Complex Dynamic Processes in AnyLogic-7.02 Environment Based on Kolmogorov Differential Equations System**  
B. Butvin, Y. Shtyfurak, O. Zastelo
3. **Mathematical Method for Evaluating the Effectiveness of the Process on the Basis of Vibration and Vibro-impact Equipment**  
Y. Ivanchuk
4. **Mathematical Modeling of Myocardium Phase Convergent Dynamics**  
O. Kirik, A. Yakovleva
5. **Reliable High Bandwidth Decentralized Live Streaming**  
I. Mazurok, V. Penko, Y. Leonchuk
6. **Compression and Multilevel Segmentation for Face Images by Piecewise Linear Approximation**  
R. Melnyk, R. Tushnytskyy
7. **Formalization And Generalization of Information Model of Technological Operations of Strengthening And Restoration of Steel Surfaces**  
T. Smirnova, O. Drieiev, O. Smirnov
8. **The Order of Projective Edwards Curve Over Finite Field**  
R. Skuratovskii, A. Williams
9. **Lyapunov Stability of a New Class of Fuzzy Differential Equations**  
O. Bychkov
10. **Simulation of Motion of a Quasi-Solid Under the Action of a Moment of Force of Light Pressure**  
A. Rachinska, A. Kupchak

## **SECTION: SYSTEMS AND ARTIFICIAL INTELLIGENCE TECHNIQUES**

Wednesday, 21 August

14<sup>00</sup> – 18<sup>00</sup>

**Heads of section: Syniehlazov V.,  
Rybalskyi O.**

- 1. Structural And Functional Scheme of Airborne Expert-Advisory System of Military Aircraft**  
O. Babich, S. Kalkamanov
- 2. Analysis of the Modular Topology of Hybrid Neural Networks**  
O. Chumachenko, K. Riazanovskiy, A. Kot
- 3. Methods of Development Intelligent Monitoring Systems**  
S. Holub, I. Zhyriakova, S. Kunytska, A. Avramenko
- 4. Formation of a Dictionary of Features For the Classification of Ukrainian-Language Texts In the Information Technology of Multilevel Intelligent Monitoring**  
M. Holub
- 5. Carbon Footprint Calculation and Optimization Approach for CFOOD Project**  
P. Milczarski, A. Hłobaż, P. Maślanka, B. Zieliński, Z. Stawska, K. Podlaski, P. Kosiński
- 6. Intelligence System For Emotional Facial State Estimation During Inspection Control**  
V. Sineglazov, R. Pantyeyev, I. Boryndo  
**About Connection of Classic Models with Binary Classification of Objects in the Neuron Networks of the Deep Learning**  
V. Solovyov, O. Rybalskiy, V. Zhuravel, A. Shablya
- 7. Application of Convolutional Neural Networks to Road Objects Recognition Under Noise Conditions**  
A. Yakovleva, O. Zhenchuk
- 8. Intelligent System of Support For Making a Medical Decision**  
O. Muntian, M. Muntian, A. Iarovenko

**SECTION: COMPUTERS, SYSTEMS, NETWORKS AND THEIR  
COMPONENTS**

Wednesday, 21 August

14<sup>00</sup> – 18<sup>00</sup>

**Heads of section: Luzhetskyi V.  
Svjatnyj V.**

- 1. Mathematical Fibonacci-Processors of High Reliability**  
V. Luzhetskyi
- 2. Microcontroller Based Corelometer for Light Beating Spectroscopy**  
V. Rolshchikov, V. Gotsulskiy, Y. Melnik
- 3. A Limit of Digitalization in 5G Technology Period**  
A. Rychlik
- 4. Development of Block Numerical Method Based Parallel Solver For Differential Equations**  
V. Svyatnyy, O. Miroshkin, H. Marhiiev
- 5. NTP Monitoring In Modern Telecommunications**  
V. Vakas, O. Manko, D. Domin, N. Fedorova
- 6. Problems of Automation of the Workflow Process in the Higher Education Institutions**  
V. Kyrychenko, V. Volkov
- 7. Telecommunication Technologies of the Unified National Synchronous Information System**  
V. Koval, V. Lysenko, M. Khudyntsev, M. Klymash, D. Kalian, B. Kravchenko



## **SECTION: CYBERNETIC AND INFORMATION SECURITY**

Wednesday, 21 August

**14<sup>00</sup> – 18<sup>00</sup>**

**Heads of section: Ivanchenko S.,  
Khoroshko V.**

**1. Protection of Industrial Wireless Networks**

S. Asabashvili

**2. Analysis of the Security of Blocks of Projects In the Market of Ukrainian Services**

A. Havrylova, S. Yevseiev

**3. The Main Sources of Technical Channels of Information Leakage And Justification of the Risk of Their Security**

S. Ivanchenko, O. Puchkov, Y. Peleshok, V. Nekoz

**4. Ensuring Security In Cyberspace**

V. Khoroshko, Y. Khokhlachova, A. Ayasrah

**5. Simulation Modeling Distribution of Investments In Cyber Security Systems**

O. Milov, S. Yevseiev

**6. Approach to Modeling Information Operation in Social Networking Services**

K. Molodetska, T. Yurii

**7. Analysis Of Attacks In Modern Cyberphysical Systems**

Y. Shcherbyna, N. Kazakova, O. Frazze-Frazenko, L. Parchuts, S. Schneider

**8. Using the Flawed Codes In Niederreiter CryptoCode Structure**

O. Tsyhanenko, S. Yevseiev

**SECTION: INFORMATION TECHNOLOGIES**

Thursday, 22 August

16<sup>00</sup> – 19<sup>00</sup>

**Heads of section: Shumeiko O.,  
Polozhaienko S.**

- 1. Information Technology With the Transformation of Multi-Dimensional Data To Predict the State of Technical Systems**  
A. Levchenko
- 2. Improving the Efficiency of Transport Enterprises Through the Use of Innovative Information Technologies In Logistics**  
T. Melenchuk, N. Artsybasheva, O. Ilko, O. Kovra
- 3. Semantic Level of Digital Governance Architecture**  
Y. Pigarev
- 4. Information Technology for Analysis and Mathematical Modeling of Bulk Cargoes Transported by Rail**  
S. Polozhaenko, O. Rydkovskiy
- 5. Acquisition of eWuś System Data in Android Application**  
J. Rogowski
- 6. Modeling the Technological Decisions Choice Task**  
V. Beskorovainyi, O. Shevchenko, O. Draz
- 7. Integrated Information System for Regional Flood Monitoring Using Internet of Things**  
S. Kuznichenko, I. Buchynska, L. Kovalenko, T. Tereshchenko
- 8. Intellectual Control System For Unmanned Energy Crop Combine**  
Y. Gunchenko, S. Shvorov, V. Lukin, V. Mezhuyev
- 9. Local Biquadratic Splines and Their Applications**  
O. Shumeiko, D. Kravtsov
- 10. Method For 3D Imaging Of Objects With Random Motion Components In InISAR**  
H.Bratchenko, M.Milković, I.Seniva , H.Smahliuk

**SECTION: AUTOMATION OF CONTROL SYSTEMS AND PROCESSES**

Thursday, 22 August

**16<sup>00</sup> – 19<sup>00</sup>**

**Heads of section: Petryshyn L.,  
Volkov V.**

- 1. Synthesis of Active Piezoelectric Lowpass Filters by Methods of Optimization For CAD**  
G. Yergiev
- 2. Agent-Based Simulation of Human Behavior In the Case of Dangerous Events**  
M. Grotowski, J. Mikulik
- 3. Information Model for Potentially Detonative Object**  
A. Kovalenko, V.Volkov
- 4. Processes Analysis Technique of Distributed Management Systems**  
L. Petryshyn, W. Cieřlik, V. Glushchenko, M. Kostiak
- 5. Processes Visualization Modeling in Distributed Management Systems**  
L. Petryshyn, W. Cieřlik, M. Petryshyn
- 6. Automation of Creating Contour Maps in Golden Software Surfer**  
A. Tityapkin, V. Ukrayinskyy
- 7. Experimental Studies of the System of Automated Monitoring of Time Stamp Signals**  
V. Koval, O. Samkov, V. Slynko, O. Osinskiy, R. Kaminskyi, V. Dosenko

## **SECTION: PROJECT MANAGEMENT**

Thursday, 22 August

**16<sup>00</sup> – 19<sup>00</sup>**

**Heads of section:** V. Kobziev,  
S. Velykodniy.

- 1. Enhancing E-government Services by Using Cloud Computing**  
Mohamed Alkilani, V. Kobziev
- 2. City Information Models in Spatial Development**  
I. Azarova
- 3. Searching For Resilient Project Structure**  
J. Ciemcioch, G.Ginda
- 4. Implementation of Regional and Local Concepts of Electronic Democracy. Opportunities and Challenges**  
Ivan Kopychenko
- 5. Approaches To the Formation of Biomass Conversion Management Projects For Biofuel Production**  
N. Pryshlaik
- 6. High-Precision Technologies for Hydro-Acoustic Studies of Complex Bottom Relief are One of the Areas of the Special Economic Zone of the High-Tech Park**  
N. Puchenko, M.Levkovska, O. Tsyra, V. Solodka, G. Kovalova
- 7. Features of Project Management For Using Waste To Ensure Energy Autonomy of Agrarian Enterprises**  
D. Tokarchuk
- 8. Software for automated design of network graphics of software systems reengineering**  
S. Velykodniy, Z. Burlachenko, S. Zaitseva-Velykodna

## **SECTION: INFORMATION TECHNOLOGIES**

Friday, 23 August

15<sup>00</sup> – 17<sup>30</sup>

**Heads of section: Bezkorovainyi V.**

**Sharonova N.**

**1. Quantifying Preferences in Choosing Multiple Criteria Decisions**

V. Semenets, V. Beskorovainyi

**2. Problems and Prospects of Practical Application of Blockchain Information Technology in Smart-Contracts**

N.V. Sharonova, I.V. Kyrychenki, G.Y. Tereshchenko

**3. APIs and Web Services Consolidation**

Denis Trček

**4. Modified Method of Binaryized Images Segmentation**

S. Udovenko, A. Pogorelov, O. Dudinova

**5. Procedure of Medical Observations Data Complex Statistical Analysis and It's Program Realization**

S. Yegorov, L. Koriashkina

**6. Toward the Methodology for Considering Mentality Properties in eGovernment Problems**

A. Makarenko

**7. Definition of Gender Pronouns Corefertility in Automatic Analysis Systems for English Texts**

V. Bilotserkovskiy, L. Chala, V. Shergin

**8. Use of Proactive Approach In IT Projects**

O. Kalnichenko

**9. Technique of the Testing of Pseudorandom Sequences using Multidimensional Statistics**

S. Popereshniak

**FINAL MEETING OF THE ORGANIZING  
AND PROGRAM COMMITTEES**

Saturday, 24 August

10<sup>00</sup> – 12<sup>00</sup>

**Formation of the report and recommendations on the results of the meeting**

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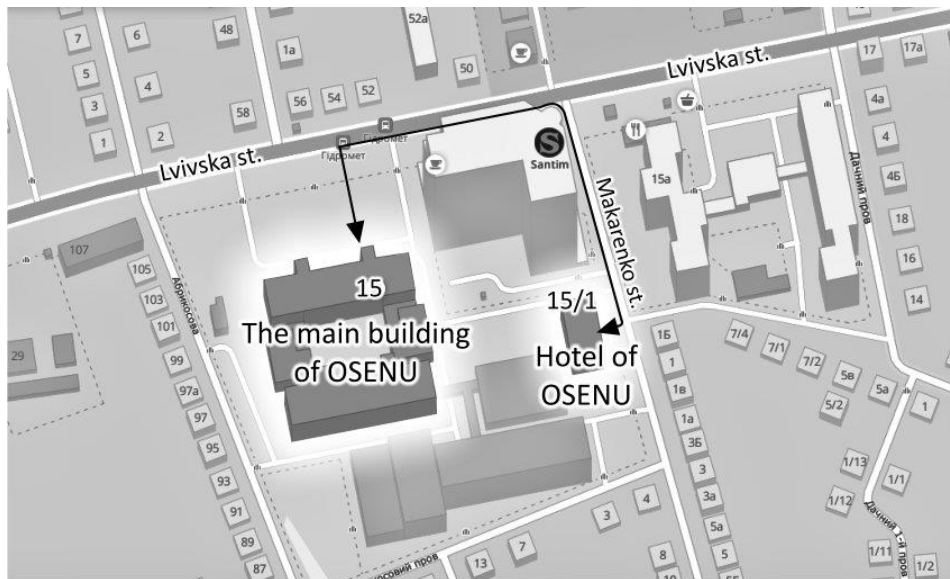
**Odesa**

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**USEFUL INFORMATION**

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**Kuznichenko Svitlana, mob. (095) 710-07-95**

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E-Governance for Accountability and Participation (EGAP) (Program is funded by Swiss Confederation)



482.solutions is an R&D company specialized in Open source software, DLT protocols, Blockchain platforms in the domain of the IoT, Robotics, and GameDev.