

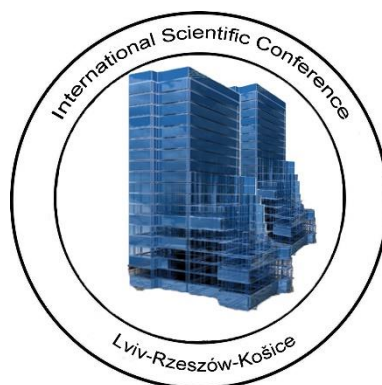
 <p><b>Institute of Civil and Environmental Engineering</b></p> <p><b>LVIV POLYTECHNIC NATIONAL UNIVERSITY</b></p>	<p><b>TECHNICAL UNIVERSITY OF KOŠICE</b> FACULTY OF CIVIL ENGINEERING</p>  <p><b>Faculty of Civil Engineering</b></p> <p><b>TECHNICAL UNIVERSITY OF KOSICE</b></p>	 <p><b>Faculty of Civil and Environmental Engineering and Architecture</b></p> <p><b>RZESZOW UNIVERSITY OF TECHNOLOGY</b></p>
---	---	--

## CONFERENCE PROGRAMME

### XVII International Scientific Conference Lviv- Košice - Rzeszów Current Issues of Civil and Environmental Engineering Lviv- Košice – Rzeszów



Dedicated to

the 125th anniversary of reinforced concrete in Halychyna

and

the 130th anniversary of professor A.KURYLLO (1889-1980)



LVIV, UKRAINE

SEPTEMBER 11-13, 2019

# CONFERENCE PROGRAMME

## XVII International Scientific Conference Lviv- Košice - Rzeszów

### Current Issues of Civil and Environmental Engineering

Lviv- Košice - Rzeszów

**First day** - September 11, 2019

10<sup>00</sup> - 14<sup>00</sup> Arrival of Participants. Registration in the Main building of Lviv Polytechnic National University, Assembly Hall

14<sup>00</sup> – 15<sup>00</sup> Opening Ceremony

Prof. Yuriy Bobalo, Sc.D., rector of Lviv Polytechnic National University (Ukraine )

Prof. Zinoviy Blikharskyy, Sc.D., Director of the Institute of Building and Environmental Engineering of the Lviv Polytechnic National University (Ukraine)

Prof. Piotr Koszelnik, Sc.D., Head of the Department of Environmental Engineering and Chemistry, Rzeszów University of Technology (Poland)

Prof. Peter Mesároš, Ph.D., Dean at Faculty of Civil Engineering, Technical University of Košice (Slovakia)

15<sup>00</sup> - 16<sup>00</sup> Plenary Session

1. Piątek, Bartosz (et al.) [Development of Strip Anchoring for CFRP Strengthening System](#)
2. M. Sanytsky [Alkali-activated multi-composite cements and nanomodified High Performance concrete](#)

16<sup>00</sup> - Transfer to training center Maidan "Magic lakes", Lviv region, Zhovkva district, village Maidan. Coordinates: 50 ° 0'44 "N 23 ° 50'0" E

**Second day** - September 12, 2019

9<sup>00</sup> - 10<sup>00</sup> Breakfast

10<sup>00</sup> - 13<sup>00</sup> Section meetings\*

13<sup>00</sup> - 14<sup>00</sup> Lunch

14<sup>00</sup> - 17<sup>00</sup> Section meetings

19<sup>00</sup> - 00<sup>00</sup> Social Evening, Dinner

\*Section 1 - Construction and Structural Mechanics

	<b>Moderators – Bartosz Miller, Roman Khmil</b>
10 <sup>00</sup> – 10 <sup>10</sup>	1. M. Lobodanov, P. Vejera, and Z. Blikharskyy - <a href="#">Planning Experiment for Researching Reinforced Concrete Beams with Damages</a>
10 <sup>10</sup> – 10 <sup>20</sup>	2. A. Duda and T. Siwowski - <a href="#">Experimental Investigation and First Application of Lightweight Abutment Backfill Made of Used Tyre Bales</a>
10 <sup>20</sup> – 10 <sup>30</sup>	3. Peter Mésároš, Jana Smetanková, and Katarína Krajníková - <a href="#">Sustainability of Buildings and Its Support Through Innovative Technologies</a>

10 <sup>30</sup> – 10 <sup>40</sup>	4. R. Ulewicz and M. Ulewicz - <a href="#">Problems in the Implementation of the Lean Concept in the Construction Industries</a>
10 <sup>40</sup> – 10 <sup>50</sup>	5. Maciej Major, Mariusz Kosiń - <a href="#">Numerical analysis of the propagation of a disturbance in steel using the ANSYS program</a>
10 <sup>50</sup> – 11 <sup>00</sup>	6. Z. Blikharskyy, R. Vashkevych, P. Vegera, and Y. Blikharskyy - <a href="#">Crack Resistance of RC Beams on the Shear</a>
11 <sup>00</sup> – 11 <sup>30</sup>	7. Presentation from SIKA-Ukraine - Yuriy Sobko, Oleksandr Cherniak – <a href="#">Concrete repair and protection – innovative Sika technologies</a>
11 <sup>30</sup> – 11 <sup>50</sup>	Coffee break
11 <sup>50</sup> – 12 <sup>00</sup>	8. Serhiy Zolotov, Pavlo Firsov, and Hamze Muhamad - <a href="#">Evaluation of Stress-Deformed Condition Level of Glued Materials for the Without Anchor Steel-Concrete Joint</a>
12 <sup>00</sup> – 12 <sup>10</sup>	9. V. Karpiuk, Yu. Somina, and O. Maistrenko - <a href="#">Engineering Method of Calculation of Beam Structures Inclined Sections Based on the Fatigue Fracture Model</a>
12 <sup>10</sup> – 12 <sup>20</sup>	10. Jacek Selejdak, Yaroslav Blikharskyy, Roman Khmil, and Zinoviy Blikharskyy - <a href="#">Calculation of Reinforced Concrete Columns Strengthened by CFRP</a>
12 <sup>20</sup> – 12 <sup>30</sup>	11. Aleksander Kozłowski and Krzysztof Ostrowski - <a href="#">Application of Theory of Experimental Design and FEA to Assessment of Rotation Capacity of Steel Joints</a>
12 <sup>30</sup> – 12 <sup>40</sup>	12. A. Wojnar and K. Sieńkowska - <a href="#">Computer Aided Design - Optimisation of Cross-Sections of Steel Profiles of Industrial Sliding Gate</a>
12 <sup>40</sup> – 12 <sup>50</sup>	13. Szczepan Woliński - <a href="#">Surface Reinforcement in Concrete Beams to Ensure Controlled Cracking</a>
12 <sup>50</sup> – 13 <sup>00</sup>	14. Olena Chernieva and Gennadiy Plahotny - <a href="#">Preservation and Maintenance of the Odesa's Historical Building Heritage – Nowadays Problem</a>
13 <sup>00</sup> – 14 <sup>00</sup>	Lunch
	<b>Moderatots – Aleksander Kozłowski, Roman Khmil</b>
14 <sup>00</sup> – 14 <sup>10</sup>	15. Maciej Kulpa and Tomasz Siwowski - <a href="#">FE Analysis Versus Experimental Test Results of FRP Deck System</a>
14 <sup>10</sup> – 14 <sup>20</sup>	16. Pavlo Krainskyi, Yaroslav Blikharskyy, Roman Khmil, and Pavlo Vegera - <a href="#">Crack Resistance of RC Columns Strengthened by Jacketing</a>
14 <sup>20</sup> – 14 <sup>30</sup>	17. A. Makhinko and N. Makhinko - <a href="#">To the Calculation of the Optimal Level of Reliability by Using Economic Indicators</a>
14 <sup>30</sup> – 14 <sup>40</sup>	18. Zbigniew Plewako, Grzegorz Bajorek, and Zakarya Kamel - <a href="#">Comments on Eurocode 2 Crack Control Reinforcement for T-Beams Under Flexure</a>
14 <sup>40</sup> – 14 <sup>50</sup>	19. Z. Pisarek and P. Sudoł - <a href="#">Experimental Tests of Joints in Scaffolding System</a>
14 <sup>50</sup> – 15 <sup>00</sup>	20. E. Bernatowska, D. Leń, and L. Ślęczka - <a href="#">Comparative Study of Fatigue Life Assessment Made by Different Approaches</a>
15 <sup>00</sup> – 15 <sup>20</sup>	Coffee break
15 <sup>20</sup> – 15 <sup>30</sup>	21. Mariusz Maslak and Michal Pazdanowski - <a href="#">Modernization of Old Steel Tanks Used to Store Liquid Fuels – Selected Tasks Caused by Increasing Environmental Requirements</a>
15 <sup>30</sup> – 15 <sup>40</sup>	22. Krzysztof Trojnar - <a href="#">Numerical Analysis of the Landslide Geohazards - Case Study with Gabions and Piles Solutions</a>
15 <sup>40</sup> – 15 <sup>50</sup>	23. R. Tkach, B. Demchyna, M. Surmai, J. Niemiec, L. Voznyuk - <a href="#">A study of mutual adhesion of glass plates under static loading</a>
15 <sup>50</sup> – 16 <sup>00</sup>	24. David Vazquez Cacho and Yuriy Sobko - <a href="#">Fire Situation in Case of RC Members by Sika CFRP Strengthening</a>
16 <sup>00</sup> – 16 <sup>10</sup>	25. Ye. Klymenko, I. Grynyova, and Z. Kos - <a href="#">The Method of Calculating the Bearing Capacity of Compressed Stone Pillars</a>
16 <sup>10</sup> – 16 <sup>20</sup>	26. A. Kramarchuk, B. Ilnytskyy, T. Bobalo, and O. Lytvyniak - <a href="#">The Research Bearing Capacity of Crane Beams for Possible Establishment of Bridge Crane on Them</a>
16 <sup>20</sup> – 16 <sup>30</sup>	27. V. M. Kushchenko and D. O. Khomitskyi - <a href="#">Vibration Monitoring of Steel Shaft Headgears</a>
16 <sup>30</sup> – 16 <sup>40</sup>	28. T. Azizov, D. Kochkarev, and T. Galinska - <a href="#">Reinforced Concrete Rod Elements Stiffness Considering Concrete Nonlinear Properties</a>
16 <sup>40</sup> – 16 <sup>45</sup>	29. R. Bašková, Z. Struková, and M. Kozlovská - <a href="#">Construction Cost Saving Through Adoption of IoT Applications in Concrete Works</a>
16 <sup>35</sup> – 16 <sup>40</sup>	30. Valeriy Shmukler, Feirusha Salih Hamad, and Petro Reznik - <a href="#">Experimental Test Method for Structures Under the Impact of Temperature Actions</a>

16 <sup>40</sup> – 16 <sup>45</sup>	31. Valerii Shmukler, Olena Petrova, and Valerii Nikulin - <a href="#">Highly Combinatorial Reinforced Concrete Slab System</a>
16 <sup>45</sup> – 16 <sup>50</sup>	32. Glib L. Vatulia, Sophia D. Komagorova, Olena V. Opanasenko, and Oleksii V. Lobiak - <a href="#">Optimal Design of a Three-Hinged Arch with Given Topology Under Constant Load</a>
16 <sup>55</sup> – 17 <sup>00</sup>	33. O. Kichaeva - <a href="#">Operation Life-Cycle Model of the “Building - Base” System</a>

**\*Section 2 - Building Materials**

	<b>Moderatots – Myroslav Sanytsky, Stanisław Fic</b>
10 <sup>00</sup> – 10 <sup>10</sup>	1. Andrii A. Plugin, Oleksii A. Pluhin, Olga S. Borziak, and Olena V. Kaliuzhna - <a href="#">The Mechanism of a Penetrative Action for Portland Cement-Based Waterproofing Compositions</a>
10 <sup>10</sup> – 10 <sup>20</sup>	2. Marek Pszczola, Dawid Rys, and Piotr Jaskula - <a href="#">The Application of the Superpave Method of Climatic Zones Analysis in Poland with Regard to Bitumen Performance Grading</a>
10 <sup>20</sup> – 10 <sup>30</sup>	3. Yurii Turba, Sergii Solodkyy, and Taras Markiv - <a href="#">Strength and Fracture Toughness of Cement Concrete, Dispersedly Reinforced by Combination of Polypropylene Fibers of Two Types</a>
10 <sup>30</sup> – 10 <sup>40</sup>	4. Robert Figmig - <a href="#">Influence of Aggregate on Properties of Semi-dry Concrete in Hardened State</a>
10 <sup>40</sup> – 10 <sup>50</sup>	5. Volodymyr Gunka, Iurii Sidun, Serhiy Solodkyy, and Nataliya Vytrykush - <a href="#">Hot Asphalt Concrete with Application of Formaldehyde Modified Bitumen</a>
10 <sup>50</sup> – 11 <sup>00</sup>	6. Tetiana Kropyvnytska, Teresa Rucinska, Hanna Ivashchyshyn, and Roman Kotiv - <a href="#">Development of Eco-Efficient Composite Cements with High Early Strength</a>
11 <sup>00</sup> – 11 <sup>10</sup>	7. Taras Markiv, Khrystyna Sobol, Nadiya Petrovska, and Oleksii Hunyak - <a href="#">The Effect of Porous Pozzolanic Polydisperse Mineral Components on Properties of Concrete</a>
11 <sup>10</sup> – 11 <sup>20</sup>	8. Andrii A. Plugin, Dmytro A. Plugin, Oleksii A. Pluhin, and Olga S. Borziak - <a href="#">The Influence of the Molecular Structure of Polyurethane on Vibro– and Electroinsulation Properties of the Tramway Structures</a>
11 <sup>20</sup> – 11 <sup>30</sup>	9. Petro V. Novosad, Oksana R. Pozniak, Volodymyr M. Melnyk, and Serhii P. Braichenko - <a href="#">Porous Thermal Insulation Materials on Organic and Mineral Fillers</a>
11 <sup>30</sup> – 11 <sup>50</sup>	Coffee break
11 <sup>50</sup> – 12 <sup>30</sup>	10. Presentation from SIKA-Ukraine - Oleksandr Hizhevskiy – <a href="#">Sika innovative concrete products and systems</a>
12 <sup>30</sup> – 12 <sup>40</sup>	11. Iurii Sidun, Oleksiy Vollis, Serhiy Solodkyy, and Volodymyr Gunka - <a href="#">Cohesion of Slurry Surfacing Mix with Slow Setting Bitumen Emulsions</a>
12 <sup>40</sup> – 12 <sup>50</sup>	12. Marcela Spisakova and Maria Kozlovska - <a href="#">Options of Customization in Industrialized Methods of Construction in Terms of Construction 4.0</a>
12 <sup>50</sup> – 13 <sup>00</sup>	13. M. Sanytsky, U. Marushchak, Y. Olevych, and Y. Novytskyi - <a href="#">Nano-modified Ultra-rapid Hardening Portland Cement Compositions for High Strength Concretes</a>
13 <sup>00</sup> – 14 <sup>00</sup>	Lunch
	<b>Moderatots – Taras Markiv, Uliana Marushchak</b>
14 <sup>00</sup> – 14 <sup>10</sup>	14. S. Harabinová, E. Panulinová, E. Kormaníková, K. Kotrasová - <a href="#">Importance of soil shear strength parameters for optimal design of the building foundation</a>
14 <sup>10</sup> – 14 <sup>20</sup>	15. Serhiy Y. Solodkyy, Zinovii M. Ilnytskyi, Ihor P. Poliuzhyn, and Fedir I. Tsiupko - <a href="#">Application Features for the Activator of Mineral Materials “RENA-Aquador” for Asphalt Concrete Pavings</a>
14 <sup>20</sup> – 14 <sup>30</sup>	16. Lucjan Gazda and Mykola Bevez - <a href="#">Medieval Material and Technological Experiment in the Construction of King Daniel Romanovich’s Residence in Cholm.</a>
14 <sup>30</sup> – 14 <sup>40</sup>	17. W. Szewczenko and G. Kotsay - <a href="#">Effect of Silicate Additives on the Impact Strength of Cement Pastes</a>
14 <sup>40</sup> – 15 <sup>00</sup>	18. Taras Bobalo, Yaroslav Blikharskyy, Nadiia Kopyika, and Mykhailo Volynets - <a href="#">Serviceability of RC Beams Reinforced with High Strength Rebar’s and Steel Plate</a>
15 <sup>00</sup> – 15 <sup>00</sup>	Coffee break

\*Section 3 - Environmental Engineering and Sustainability

	<b>Moderatots – Orest Voznyak, Zuzanna Vranayova</b>
10 <sup>00</sup> – 10 <sup>10</sup>	1. V. V. Cherniuk, V. V. Ivaniv, I. V. Bihun, and Ja. M. Wojtowicz - <a href="#">Coefficient of Flow Rate of Inlet Cylindrical Nozzles with Lateral Orthogonal Inflow</a>
10 <sup>10</sup> – 10 <sup>20</sup>	2. F. Vranay and Z. Vranayova - <a href="#">Influence of Heat Source Choice on Building Energy Certification Process and CO<sub>2</sub> Emissions</a>
10 <sup>20</sup> – 10 <sup>30</sup>	3. G. Kalda, I. Piegdoń, and W. Gaweł - <a href="#">Analysis of the Utilization of Plastics in Water and Wastewater Systems of Poland's Podkarpackie Region, and Methods for Their Identification</a>
10 <sup>30</sup> – 10 <sup>40</sup>	4. Stepan Shapoval, Vasyl Zhelykh, Iryna Venhryn, and Khrystyna Kozak - <a href="#">Simulation of Thermal Processes in the Solar Collector Which Is Combined with External Fence of an Energy Efficient House</a>
10 <sup>40</sup> – 10 <sup>50</sup>	5. J. R. Rak and J. Żywiec - <a href="#">Selected Aspects of the Water Supply System Safety</a>
10 <sup>50</sup> – 11 <sup>00</sup>	6. O. A. Riabenko, O. O. Klyuha, V. S. Tymoshchuk, and O. O. Halych - <a href="#">Current Tendencies of Water Resources Using for Providing the Energy Needs of Society</a>
11 <sup>00</sup> – 11 <sup>30</sup>	7. Presentation from Instalplast
11 <sup>30</sup> – 11 <sup>50</sup>	Coffee break
11 <sup>50</sup> – 12 <sup>00</sup>	8. P. Kapalo, H. Klymenko, V. Zhelykh, and M. Adamski - <a href="#">Investigation of Indoor Air Quality in the Selected Ukraine Classroom – Case Study</a>
12 <sup>00</sup> – 12 <sup>10</sup>	9. M. Ulewicz, V. Zhelykh, Kh. Kozak, and Y. Furdas - <a href="#">Application of Thermosiphon Solar Collectors for Ventilation of Premises</a>
12 <sup>10</sup> – 12 <sup>20</sup>	10. D. Katunsky and E. Dolnikova - <a href="#">Assessment of the Working Environment in Terms of Visual Perception</a>
12 <sup>20</sup> – 12 <sup>30</sup>	11. H. Klymenko, V. Labay, V. Yaroslav, and M. Gensetskyi - <a href="#">Criterial Equation for the Description of Low-Speed Air Distributor Operation</a>
12 <sup>30</sup> – 12 <sup>40</sup>	12. D. Papciak, A. Domoń, A. Wojtuś, and M. Zdeb - <a href="#">Optimization of the Sample Preparation Method for the Determination of Biofilm in the Water Supply System</a>
12 <sup>40</sup> – 12 <sup>50</sup>	13. Andrzej Studzinski - <a href="#">Analysis of Cost of Building Equipment Used for Removal of Water Conduits Failure</a>
12 <sup>50</sup> – 13 <sup>00</sup>	14. Stefan Demcak, Zdenka Kovacova, and Magdalena Balintova - <a href="#">The Utilization of Cherry Wood Sawdust for Heavy Metals Removal from Wastewaters</a>
13 <sup>00</sup> – 14 <sup>00</sup>	Lunch
	<b>Moderatots – Dusan Katunsky, Volodymyr Cherniuk</b>
14 <sup>00</sup> – 14 <sup>20</sup>	15. Presentation from SIKA-Ukraine - Yuriy Sobko, Oleksandr Cherniak - <a href="#">Biogenic corrosion in Sewers – Sika MonoTop®-4400 MIC</a>
14 <sup>20</sup> – 14 <sup>30</sup>	16. L. Koval, V. Yehorchenkov, and O. Sergeychuk - <a href="#">Technological Approaches to Design of Artificial Lighting Approximated to the Properties of Natural Lighting</a>
14 <sup>30</sup> – 14 <sup>40</sup>	17. Orest Voznyak, Vadym Korbut, Borys Davydenko, and Iryna Sukholova - <a href="#">Air Distribution Efficiency in a Room by a Two-Flow Device</a>
14 <sup>40</sup> – 14 <sup>50</sup>	18. O. Gumen, I. Bilyk, and M. Kruzhkova - <a href="#">Geometrical Simulation of Optimized Vacuum-Condensation Spraying Technology for Titanium Nitride on Structural Steel</a>
14 <sup>50</sup> – 15 <sup>00</sup>	19. M. Zeleňáková and L. Zvijáková - <a href="#">Selection of the Best Variant of Flood Protection</a>
15 <sup>00</sup> – 15 <sup>20</sup>	Coffee break
15 <sup>20</sup> – 15 <sup>30</sup>	20. O. Matsiyevska, P. Kapalo, and L. Vovk - <a href="#">Analysis of the Water Demand in the Slovak Republic and Ukraine</a>
15 <sup>30</sup> – 15 <sup>40</sup>	21. B. Hulai, O. Dovbush, B. Piznak, and M. Kasynets - <a href="#">Studying Equalization of the Radial Fan's Discharge Flow</a>
15 <sup>40</sup> – 15 <sup>50</sup>	22. V. Yehorchenkov, L. Koval, O. Sergeychuk, and V. Buravchenko - <a href="#">Simulation of Solar Energy Gain through Natural Lighting Systems of Complex Geometry</a>
15 <sup>50</sup> – 16 <sup>00</sup>	23. Adam Masłoń - <a href="#">An Analysis of Sewage Sludge and Biogas Production at the Zamość WWTP</a>
16 <sup>00</sup> – 16 <sup>10</sup>	24. N. Maksyiuta and Yu. Golik - <a href="#">Comparative Analysis of Pollution of Atmospheric Air in Cities (an Example of Leipzig and Poltava)</a>

16 <sup>10</sup> – 16 <sup>20</sup>	25. N. M. Fialko, N. P. Tymchenko, and Ju. V. Sherenkovskiy - <a href="#">Fourth Generation of District Heating and Centralized Heating Supply Systems of Ukraine</a>
16 <sup>20</sup> – 16 <sup>30</sup>	26. Viktoria Grankina, Olga Maliavina, Aleksandr Romashko, and Roman Tkachenko - <a href="#">Correction Factors for the Calculation of Consumable Heat Energy Taking into Consideration Climatic Pattern of the Ukrainian Regions</a>
16 <sup>30</sup> – 16 <sup>40</sup>	27. Orest Voznyak, Yuriy Yurkevych, Oleksandr Dovbush, and Yaroslav Serediuk - <a href="#">The Influence of Chairs and Passengers on Air Velocity in Bus Passenger Compartment</a>
16 <sup>40</sup> – 16 <sup>50</sup>	28. Orest Voznyak, Khrystyna Myroniuk, Iryna Sukholova, and Peter Kapalo - <a href="#">The Impact of Air Flows on the Environment</a>

**Third day - September 13, 2019**

- 9<sup>00</sup> - 10<sup>00</sup> Breakfast
- 10<sup>00</sup> Departure of Participants to Lviv
- 11<sup>00</sup> - 13<sup>00</sup> Outgoing session - Excursion to Lviv for everyone
- 13<sup>00</sup> Departure of Participants