

# 12<sup>th</sup> Eastern European Young Water Professionals Conference



## Preliminary Conference Program

# WATER RESEARCH AND INNOVATIONS IN DIGITAL ERA

31 March - 2 April 2021, Riga, Latvia

<http://iwa-ywp.eu/>



### Organised by:



**YOUNG WATER  
PROFESSIONALS**



**Riga Technical  
University**



Riga Technical University  
Water Research Laboratory



Riga Technical University  
Department of Water  
Engineering and Technology

### Co-organised by:



University of Latvia



Latvia University of Life Sciences  
and Technologies



Institute for Environmental Solutions



Institute of Food Safety, Animal  
Health and Environment



Latvian Environment, Geology and  
Meteorology Centre



Latvian Water and  
Wastewater Works Association



Tallinn University of Technology  
Department of Civil Engineering  
and Architecture



Vilnius Gedeminas Technical  
University



Ministry of Agriculture Republic of  
Latvia



Ministry of Environmental  
Protection and Regional  
Development Republic of Latvia



Ministry of Education and Science  
Republic of Latvia



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## Pre-conference workshops

9:00 – 13:00

### **FROM SCIENCE TO PRODUCT**

Often the results from scientific research lays on the shelves and is not commercialized, thus the acquired results do not utilize its potential. In terms of the workshop you will gain the knowledge how to proceed from scientific results to commercialized product.

Murnieks T.

Riga Technical University Design Factory (LATVIA)

14:00 – 15:30

### **REACHING SUSTAINABILITY IN THE WATER SECTOR. ARE YOU A PART OF IT?**

This workshop is sponsored by IWA's Specialist Group on Sustainability in the Water Sector, which promotes water use in ways that support people, the planet, and prosperity. The keynote presentations in this workshop will be used to stimulate discussion among Young Professionals about how these issues apply to the water sector in Eastern Europe, as well as contributions Young Professionals in Eastern Europe may be able to make to sustainability at a global level.

Goethals P. Ghent University (BELGIUM) and Bjerre T.K. VCS Denmark (DENMARK)

9:00 – 17:00

### **FROM DESIGN TO OPERATION TO DESIGN**

Designing, financing, building and operating a municipal wastewater treatment plant with anaerobic sludge treatment includes numerous stakeholders. Each one has a different approach and goal. With start-up of the plant, the optimisation has only just begun. In terms of the workshop you will gain a perspective of plant operation and optimisation. The differences between "state of the art" design and its consequences on plant operation are defined.

Heinrichmeier J.

WTE Wassertechnik GmbH (GERMANY)

16:00 – 18:00

### **WELCOME DRINK & QUIZ**

Here you can meet your friends from the previous conferences or have a chat with new participants. This will be a nice warm up before the conference.

08:30 – 9:00

## CONFERENCE OPENING

### WELCOME WORDS

Dr. Maryna Feierabend - Chair Organising Committee IWA YWP (GERMANY)

Prof., Dr.sc.ing Talis Juhna - Chair Program Committee, Vice-rector for Research, Riga Technical University (LATVIA)

### ABOUT RIGA AND UNIVERSITY

Assist. Prof., Dr.sc.ing Sandis Dejus - Co-Chair Organising Committee, Riga Technical University, Water Research and Environmental Biotechnology Laboratory (LATVIA)

### IWA and YWP

Liudmyla Odud, The IWA *Emerging Water Leaders* Steering Committee (UKRAINE)

### PRESENTATIONS OF SPONSORS

Chair: Dr. Maryna Feierabend - Chair Organising Committee (GERMANY)

Gold Sponsor - company WTE - presented by Mertens D. (GERMANY)

Gold Sponsor - company E+H - presented by Sifferlen E., Head of Global Industry Management (GERMANY)

### ABOUT CONFERENCE PROGRAM

Chair: Dr. Maryna Feierabend - Chair Organising Committee (GERMANY)



Prof., Dr.sc.ing Talis Juhna



Dr.-Ing. Maryna Feierabend



Assist. Prof., Dr.sc.ing Sandis Dejus



Liudmyla Odud



Daniel Mertens



Eric Sifferlen



9:00 – 10:30

**Session 1A. DRINKING WATER TREATMENT AND DISTRIBUTION**

Chair: Intriago Zambrano J.C. (Delft University of Technology, THE NETHERLANDS) and Filipić A. (National Institute of Biology, SLOVENIA)

9:00 – 9:05

THE SENSITIVITY BASED TOPOLOGY OPTIMISATION OF WATER DISTRIBUTION NETWORKS  
Dellei A.  
Budapest University of Technology and Economics (HUNGARY)

9:05 – 9:10

OZONATION AND COAGULATION OF NON-PROTEINACEOUS ALGAL ORGANIC MATTER  
Prokopová M.  
Institute of Hydrodynamics of the Czech Academy of Sciences (CZECH REPUBLIC)

9:10 – 9:15

SYNTHESIS AND INVESTIGATION OF METAL NANOPARTICLES FOR KILLING MICROBES FOR TREATMENT OF WATER  
Singh H.  
Desh Bhagat University (INDIA)

9:15 – 9:20

FORMATION OF ODOROUS ALDEHYDES, NITRILES AND N-CHLOROALDIMINES FROM COMBINED LEUCINE IN SHORT OLIGOPEPTIDES DURING CHLORINATION  
Luyang C.  
Tongji University (CHINA)

9:20 – 9:25

REMOVAL OF CYANOBACTERIAL AMINO ACIDS FROM WATER BY ACTIVATED CARBON: EFFECT OF TEMPERATURE  
Fialová K.  
Institute of Hydrodynamics of the Czech Academy of Sciences (CZECH REPUBLIC )

9:25 – 9:30

MODELING OF THE ADSORPTIVE REMOVAL OF PENTAVALENT ARSENIC FROM DRINKING WATER  
Zakhar R.  
Slovak University of Technology (SLOVAKIA)

9:30 - 9:35

THE EFFECT OF CHITOSAN NANOPARTICLES ON *ESCHERICHIA COLI* VIABILITY IN DRINKING WATER DISINFECTION  
Denisova V.; Mezule L.  
Riga Technical University (LATVIA)

9:35 – 9:40

MONITORING DICLOFENAC REMOVAL BY SELECTED ADSORPTION MATERIALS  
Moravčíková S.; Biela R.  
Brno University of Technology (CZECH REPUBLIC)

9:40 – 9:45

EVALUATION OF THE EFFICIENCY OF *ESCHERICHIA COLI* INACTIVATION AND WATER PRESERVATION USING LOW PRESSURE CO<sub>2</sub>  
Saprykina M.  
National Academy of Sciences of Ukraine (UKRAINE)

9:45 - 9:50

DEEP LEARNING IDENTIFIES LEAK IN PIPELINE SYSTEM USING TRANSIENT FREQUENCY RESPONSE  
Liao Z.; Yan H.; Tang Z.; Chu X.; Tao T.  
Tongji University (CHINA); Hong Kong Baptist University (CHINA)

9:50 – 9:55

INACTIVATION OF PEPPER MILD MOTILE VIRUS BY COLD ATMOSPHERIC  
Filipić A.; Dobnik D.; Gutierrez-Aguirre I.; Tušek Žnidarič M.; Primc G.; Mozetič M.; Ravnikar M.; Žel J.  
National Institute of Biology (SLOVENIA)

9:55 – 10:00

SHORT-TERM WATER DEMAND FORECAST BASED ON CONV1D EXTRACTION FEATURES  
Chen L., Tao T.  
Tongji University (CHINA)

10:00 – 10:30

**Questions**

10:30 – 11:00

**Coffee-break**

11:00 – 12:30

**Session 2A. SURFACE AND GROUND WATERS**

Chair: Zakhar R. (Slovak University of Technology, SLOVAKIA) and Rudic Z. (Jaroslav Černi Institute for the Development of Water Resources, SERBIA)

11:00 – 11:05

POLLUTION LAKE SEVAN (ARMENIA) BY SELECTED ORGANIC POLLUTANTS OF THE EU WATER FRAMEWORK DIRECTIVE  
Mkhitarian L.; Minasyan S.; Shahnazaryan G.; Manukyan Z.; Khocharyan G.; Harutyunyan L.  
National Academy of Sciences of the Republic of Armenia (ARMENIA)

11:05 – 11:10	<p>INVESTIGATION OF WAVE DYNAMICS AROUND A VEGETATION PATCH IN A SHALLOW LAKE Szilagyi M.; Homorodi K.; Kramer T. Budapest University of Technology and Economics (HUNGARY)</p>
11:10 – 11:15	<p>IDENTIFICATION OF PESTICIDES IN WETLAND WATER Mihajlović I.; Sremački M.; Novaković M.; Živančev N.; Gvoić V.; Spanik I.; Petrović M. University of Novi Sad (SERBIA)</p>
11:15 – 11:20	<p>50 AND 100 YEAR FLOOD SIMULATION ON LOWER PART OF VISKAN RIVER FLOODPLAIN, SWEDEN Tazin T.; Kafashtehrani M. KTH Royal Institute of Technology (SWEDEN)</p>
11:20 – 11:25	<p>ESTIMATION OF SSC IN RIVERS USING ADCP BACKSCATTER DATA Cvijanovic N. Jaroslav Černi Water Institute (SERBIA)</p>
11:25 – 11:30	<p>A CLADOCERA BASED PALEOLIMNOLOGICAL ASSESSMENT OF RECENT ENVIRONMENTAL CHANGES IN LAKE FROM DRINKING WATER SUPPLY SYSTEM IN RIGA VICINITY, LATVIA Lanka A.; Zawiska I.; Tylmann W.; Dimante-Deimantovica I.; Stivrins N. Latvian Institute of Aquatic Ecology (LATVIA); Polish Academy of Sciences (POLAND); University of Gdansk (POLAND); Norwegian Institute for Nature Research (NORWAY); University of Latvia LATVIA</p>
11:30 – 11:35	<p>AN APPLICATION OF GEO-ECOLOGICAL RISK ASSESSMENT INDICES TO EVALUATE THE SURFACE SEDIMENT QUALITIES: A CASE STUDY IN THE NORTH-WEST PART OF TURKEY Tokatlı C. Trakya University (TURKEY)</p>
11:35 – 11:40	<p>GROUNDWATER QUALITY IMPACTS ON HUMAN HEALTH AND INTERNAL CONSISTENCY OF PUBLIC PERCEPTION: AN EXPLORATORY STUDY Didar-UI Islam S.M.; Zhang F. Tsinghua University (CHINA)</p>
11:40 – 11:45	<p>THE ANALYSIS OF RUNOFF GENERATION IN SMALL SCALE CATCHMENTS Veinbergs A.; Lagzdins A. Latvia University of Life Sciences and Technologies (LATVIA)</p>
11:45 – 12:30	<b>Questions</b>
12:30 – 14:00	<b>Lunch</b>
14:00 – 15:30	<p><b><u>Session 3A. SURFACE AND GROUND WATERS</u></b></p> <p><u>Chair:</u> Rudic Z. (Jaroslav Černi Institute for the Development of Water Resources, SERBIA)</p>
14:00 – 14:05	<p>LAGRANGIAN FIELD EXPERIMENT OF SURFACE MIXING DURING A FLOOD WAVE AT A RIVER CONFLUENCE Zsugyel M.; Gábor Szabó K. MTA-BME Water Management Research Group (HUNGARY); Budapest University of Technology &amp; Economics (HUNGARY)</p>
14:05 – 14:10	<p>APPLICATION OF FACTOR ANALYSIS FOR EVALUATING FRESHWATER QUALITY: A CASE STUDY OF ANADERE STREAM BASIN (THRACE REGION, TURKEY) Tokatlı C. Trakya University (TURKEY)</p>
14:10 – 14:15	<p>VARIABLE SPEED PUMP MODELING USING PID CONTROL IN EPA SWMM Sretenović Ž.; Govedarica O.; Vasilčić Ž.; Popović M.; Dukić A. Jaroslav Černi Water Institute (SERBIA); University of Belgrade (SERBIA)</p>
14:15 – 14:20	<p>LONG-TERM FUTURE IMPACT OF RUNOFF CHANGES ON HYDROTECHNICAL STRUCTURES IN LOW-LAND RIVERS Jakimavičius D.; Kriauciūnienė J.; Šarauskienė D. Lithuanian Energy Institute (LITHUANIA)</p>
15:50 – 16:00	<p>COMPARISON OF EFFICIENCY OF ACTIVATED CHARCOAL AND FERRATES IN REMOVAL OF PHARMACEUTICALS FROM WASTEWATER Pavukova D.; Faskova L.; Kubinakova E.; Stibranyi L.; Hives J.</p>

14:20 – 14:25	AN APPLICATION OF WATER QUALITY INDEX TO EVALUATE THE CONTAMINATION RATES OF A LENTIC HABITAT USED FOR AGRICULTURAL PURPOSES IN TEKİRDAĞ (TURKEY) Tokatlı C. Trakya University (TURKEY)
14:25 – 14:30	EVALUATION OF RIVERS RENATURALIZATION IN REFERENCE TO ECOLOGICAL POTENTIAL Gervyte J.; Litvinaitiene L.; Litvinaitis A. Vilnius Gediminas Technical University (LITHUANIA)
14:30 – 14:35	A COMPREHENSIVE APPROACH TO MODELLING THE TRANSPORT OF AGRICULTURAL POLLUTION FROM FARM TO THE COASTAL ZONE Dybowski D.; Janecki M.; Dzierzbicka-Głowacka L. Institute of Oceanology of the Polish Academy of Sciences (POLAND)
14:35 – 14:40	MICROBIOLOGICAL QUALITY, ECOLOGICAL STATUS, AND POTENTIAL SOURCES OF CONTAMINATION OF THE RIVER WATER Todorović I., Ključev I., Jovičić-Petrović J., Lalević B., Karličić V., I, Prijepoljac M., Raičević V. University in Belgrade (SERBIA)
14:40 – 14:45	HYDROLOGICAL TIME-SERIES MODELING BY MLR, MARS, SVR AND RF TECHNIQUES Kumar P. Govind Ballabh Pant University Of Agriculture And Technology (INDIA)
14:45 – 14:50	ANALYSIS OF GEO-ECOLOGICAL RISKS OF GROUNDWATER VULNERABILITY WITHIN THE PRIPYAT RIVER BASIN (UKRAINE) Kasiyanchuk D. V.; Tymkiv M. M.; Davybida L. I. Ivano-Frankivsk National Technical University of Oil and Gas (UKRAINE)
14:50 – 15:30	<b>Questions</b>

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15:30 – 16:00      **Coffee-break**

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16:00 – 17:00      **ROUND TABLE DISCUSSION**

1      **ROUND TABLE "SMART WATER TECHNOLOGIES" DANIEL**

Smart water refers to a movement in the water industry involving emerging technology that includes hardware, software, and analytics to help water and wastewater utilities solve problems through automation, data gathering and data analysis. Smart water systems use sensors, information and communication technology (ICT) to provide real-time monitoring of data such as pressure, water quality, moisture, etc. with the capability to detect any abnormalities such as water losses or water contamination in the water distribution system.

2      **ROUND TABLE "PHD IN PANDEMIC TIME" MONICA AND ARIJANA**

Pandemic time made us adapt to the new normal, creating our own PhD path within the COVID-19 restrictions, while blending in a virtual and physically distanced research environment. In reflection of the one year COVID-19 impact on the PhD students, a new perspective of being proactive instead of reactive, has been a challenging way to make the best out of what we can do from uncertain and mentally demanding times.

3      **ROUND TABLE "WATER ENTREPRENEURSHIP" TALIS AND MARIA**

There are two ways how to move knowledges and technology from science lab to real application: via existing company or by establishing your own. Both ways are distinctly different. If the former is well known – basically licencing your idea, then the latter requires establishing ecosystem within universities and research institute. Because of rapid change in the technology development cycle more and more focus might shift to “making your start-up approach”. That is an opportunity especially to young scientists. One of the challenges in water sector, which mostly owned by municipal companies, is how to keep up to the speed with technology changes. We will discuss these and other questions in session of Water Entrepreneurship.

4      **ROUND TABLE "SLUDGE MANAGEMENT" SANDIS AND VIKTORIJA**

Due to the revision process of Wastewater sludge directive wastewater sludge management and treatment technologies are at the crossroads and in the next decade the direction of the wastewater sludge will be treated as a waste or recyclable material. Should we burn it or use in farmlands? How much and who is ready to pay for wastewater sludge treatment?

5      **ROUND TABLE "CLIMATE CHANGE & CIRCULAR ECONOMY" MICHELA AND STEVO**

Circular economy is getting more importance both in science and everyday life. In order to reduce pollution and improve environmental conditions it is important to close the cycle whenever possible. This is of particular significance in the water sector since water, energy, nutrients and other resources can be recovered from wastewater and reused in different areas. For example, treated wastewater can be reused in agriculture in order to fill the gap that exists between overall water need and water availability, which can be rather big in the world regions that suffer from water scarcity. Join us on 1st April at to let us know what is your opinion and to discuss this interesting topic together.

9:00 – 10:30

### **Session 1B. WASTEWATER - NUTRIENT REMOVAL / RESIDUAL MICROPOLLUTANTS**

Chair: Lavrnić S. (University of Bologna, ITALY/SERBIA) and Petrovic M. (University of Novi Sad, SERBIA)

9:00 – 9:05

FACILITATING THE GRANULATION OF HALOPHILIC ACTIVATED SLUDGE INOCULATED WITH ESTUARINE SEDIMENTS BY DIVALENT CATION ADDITION

Huang J.; Cui Y.

Beijing University of Technology (CHINA)

9:05 – 9:10

OPTIMIZATION OF CARRIER FILLING DEGREE IN POST-DENITRIFICATION STAGE AT MOVING BED BIOFILM REACTOR PROCESS

Strade E.; Neibergs M.; Gedusevs J.; Kazulis R.

Riga Technical University (LATVIA); JSC "Grindeks" (LATVIA)

9:10 – 9:15

AMMONIUM AND PHOSPHATE REMOVAL USING MAGNETIC NANOPARTICLES

Kara B.

Marmara University (TURKEY)

9:15 – 9:20

SURVEILLANCE OF SARS-COV-2 IN EXTENSIVE MONITORING OF MUNICIPAL WASTEWATER: KEY ISSUES TO YIELD RELIABLE RESULTS

Cutrupi F.; Cadonna M.; Manara S.; Foladori P.

University of Trento (ITALY)

9:20 – 9:25

CUO NMS/PEROXYMONOSULFATE OXIDATION SYSTEM FOR OPTIMIZATION OF RHODAMINE B REMOVAL EMPLOYING TAGUCHI EXPERIMENTAL DESIGN

Yu X.; Kamali M.; Van Aken P.; Van der Bruggen B.; Dewil R.

KU Leuven (BELGIUM )

9:25 – 9:30

NITRATES-POLLUTED WATER REMEDIATION BY FUNCTIONAL POLYURETHANE-BASED FOAMS

Barroso Solares S.

University of Valladolid (SPAIN)

9:30 – 9:35

NAPHTHALENE MINERALIZATION BY SUPERCRITICAL WATER OXIDATION AND DETERMINATION OF BY-PRODUCTS USING NON-TARGET ANALYSIS

Ateş H.; Argun M.E.; Kurt N.

Konya Technical University (TURKEY)

9:35 – 9:40

PHARMACEUTICALS AND ANOTHER GROUPS OF EMERGING CONTAMINANTS: OCCURRENCE AND SOURCES IN ADMIRALTY BAY (KING GEORGE ISLAND, MARITIME ANTARCTICA)

Szopińska M.; Fudala-Książek S.; Svahn O.; Björklund E.; Luczkiewicz A.

Gdansk University of Technology (POLAND); Kristianstad University (SWEDEN)

9:40 – 9:45

PROPAGATION AND SPREAD OF ANTIBIOTIC RESISTANCE DURING GREYWATER RECYCLING - A PRELIMINARY STUDY

Ojober B.

University of Chemistry and Technology, Prague (CZECH REPUBLIC)

9:45 – 9:50

COMPARATIVE STUDY ON CR(VI) REMOVAL FROM AQUATIC SYSTEMS BY DIFFERENT BIO-SORBENTS, NANO POWDERS, AND IRON-BASED NANOMATERIALS

Maamoun I.; Bensaida K.; Eljamal R.; Falyona O.; Mokete R.; Eljamal O.

Kyushu University (JAPAN)

9:50 – 9:55

HYDROCHAR DERIVED ADSORBENT FOR POLLUTANTS REMOVAL FROM WASTEWATER

Ferrentino R.; Fiori L.; Andreottola G.

University of Trento (ITALY)

9:55 – 10:00

PERFORMANCE EVALUATION OF ELECTROCOAGULATION FOR THE REMOVAL OF NICKEL AND CHROMIUM FROM WASTEWATER USING ZINC ELECTRODES

Shaker O.A.; Safwat S.M.; Matta M.E.

Cairo University (EGYPT)

10:00 – 10:05

MICROALGAE STARVATION FOR ENHANCED PHOSPHORUS UPTAKE FROM MUNICIPAL WASTEWATER

Lavrinovics A.

Riga Technical University/Institute for Environmental Solutions (LATVIA)

10:00 – 10:30

**Questions**

10:30 – 11:00

**Coffee-break**

11:00 – 12:30

## **Session 2B. DOMESTIC WASTEWATER AND SLUDGE TREATMENT**

Chair: Langone M. (University of Trento, ITALY) and Basitere M. (Cape Peninsula University of Technology, SOUTH AFRICA)

11:00 – 11:05

REMOVAL OF PHOSPHATE FROM AQUEOUS SOLUTIONS USING SUPPORTED ENGINEERED NANOPARTICLES  
Hür C., Erdim E.  
Marmara University (TURKEY)

11:05 – 11:10

BIOCORROSION IN CONCRETE SEWERS: STATUS AND TREATMENT  
Fytianos G.  
International Hellenic University (GREECE)

11:10 – 11:15

THE MUTUAL INTERACTION BETWEEN DIFFERENT OPERATIONAL FACTORS WITHIN NITRIFICATION PROCESS  
Shourjeh M.; Kowal P.; Drewnowski J.  
Gdansk University of Technology (POLAND)

11:15 – 11:20

PHARMACEUTICALS DEGRADATION IN SURFACE WATER: OCCURRENCE AND PURIFICATION BY SOLAR PHOTOCATALYSIS  
Mikleč K.; Loborec J.; Grčić I.  
University of Zagreb (CROATIA)

11:20 – 11:25

EFFECTIVE MICROORGANISMS – AN EFFECTIVE METHOD TO IMPROVE THE WASTEWATER PURIFICATION?  
Paweska K.; Bawiec A.; Samborska P.; Marek K.  
Wrocław University of Environmental and Life Sciences (POLAND)

11:25 – 11:30

INCREASED TOURIST TRAFFIC AND PROBLEMS WITH WASTEWATER TREATMENT IN MOUNTAIN PROTECTED AREAS  
Paweska K.; Bawiec A.; Dąbek P.B.; Baran J.  
Wrocław University of Environmental and Life Sciences (POLAND)

11:30 – 11:35

ENERGY AND MATERIAL RECOVERY FROM BEACH-CAST SEAGRASS: THE CASE STUDY OF HIGH -ADRIATIC COAST  
Mainardis M.  
University of Udine (ITALY)

11:35 – 11:40

ANALYSIS OF WASTEWATER TREATMENT EFFICIENCY  
Šarko J.; Mažeikienė A.  
Vilnius Gediminas Technical University (LITHUANIA)

11:40 – 11:45

SONOZONE PROCESS TO RECOVER WASTEWATER FOR FERTIGATION  
Moretti A.  
University of Udine (ITALY)

11:45 – 11:50

POTENTIAL METHANE PRODUCTION FOR WILD SALT-TOLERANT BIOMASS BASED ON ANAEROBIC RESPIROMETER TESTS  
Amen T.W.M.  
The University of Kitakyushu (JAPAN)

11:50 – 11:55

MICROBIAL FUEL CELL BASED BIOSENSOR FOR THE DETERMINATION OF BIOCHEMICAL OXYGEN DEMAND OF WASTEWATER SAMPLES  
Lóránt B.  
Budapest University of Technology and Economics (HUNGARY)

11:55 – 12:00

DESIGNING WEB-APP FOR A DECISION SUPPORT SYSTEM FOR UPGRADING SLUM SANITATION  
Apriadi D.P., Barjenbruch M.  
Technical University of Berlin (GERMANY)

12:00 – 12:05

MODERNIZATION OF SMALL WASTEWATER TREATMENT PLANT  
Kulakov A.  
MIREA - Russian Technological University (RUSSIA)

12:05 – 12:30

**Questions**

12:30 – 14:00

**Lunch**



14:00 – 15:30

### **Session 3B. MANURE TREATMENTS**

Chair: Langone M. (University of Trento, ITALY) and Basitere M. (Cape Peninsula University of Technology, SOUTH AFRICA)

14:00 – 14:10

TRINAL SIMULATOR STAGES FOR MODELLING A PILOT SCALE POULTRY SLAUGHTERHOUSE WASTEWATER TREATMENT PLANT USING SUMO

Bingo N.; Basitere M.; Ntwampe K.

Cape Peninsula University of Technology (SOUTH AFRICA); North-West University (SOUTH AFRICA)

14:10 – 14:20

TREATMENT OF POULTRY SLAUGHTERHOUSE WASTEWATER USING AN EXPANDED GRANULAR SLUDGE BED REACTOR COUPLED WITH A SIMULTANEOUS NITRIFICATION-DENITRIFICATION, AN ULTRAFILTRATION SUBMERGED MEMBRANE AND UV SYSTEMS

Meyo H.

Cape Peninsula University of Technology (SOUTH AFRICA)

14:20 – 14:30

OPTIMIZATION OF THE COD REMOVAL EFFICIENCY FOR A STATIC GRANULAR BED REACTOR TREATING POULTRY SLAUGHTERHOUSE WASTEWATER

Rinquest Z.; Basitere M.; Mewa-Ngongang M.; Ntwampe K.

Cape Peninsula University of Technology (SOUTH AFRICA); North-West University (SOUTH AFRICA)

14:30 – 14:40

CAPABILITY ANALYSIS OF A MULTI-STAGE PROCESS DESIGN IN POULTRY SLAUGHTERHOUSE WASTEWATER TREATMENT SYSTEMS

Nsanzimana N.; Ntwampe S.; Basitere M.; Dewa M.

Cape Peninsula University of Technology (SOUTH AFRICA); North-West University (SOUTH AFRICA)

14:40 – 14:50

POULTRY SLAUGHTERHOUSE WASTEWATER TREATMENT USING A DOWN-FLOW EXPANDED GRANULAR BED REACTOR COUPLED WITH SINGLE STAGE NITRIFICATION-DENITRIFICATION SYSTEM, SUBMERGED MEMBRANE, AND ULTRAVIOLET SYSTEM

Dyosile P.; Basitere M.; Ntwampe K.

Cape Peninsula University of Technology (SOUTH AFRICA); North-West University (SOUTH AFRICA)

14:50 – 15:00

THE AEROBIC PRETREATMENT OF POULTRY SLAUGHTERHOUSE WASTEWATER COUPLED WITH REMEDIATION IN AN EXPANDED GRANULAR SLUDGE BED REACTOR

Cebisa; Basitere M.; Ntwampe K.

Cape Peninsula University of Technology (SOUTH AFRICA);

15:00 – 15:10

PERFORMANCE OF A BIOLOGICAL PRE-TREATMENT SYSTEM COUPLED WITH STATIC GRANULAR BED REACTOR (SGBR) FOR POULTRY SLAUGHTERHOUSE WASTEWATER TREATMENT

Dlamini D.; Basitere M.; Ntwampe K.

Cape Peninsula University of Technology (SOUTH AFRICA); North-West University (SOUTH AFRICA)

15:10 – 15:30

**Questions**

15:30 – 16:00

**Coffee-break**

16:00 – 17:00

### **ROUND TABLE DISCUSSION**

9:00 – 10:30

### Session 4A. WATER MANAGEMENT

Chair: Rudic Z. (Jaroslav Černi Institute for the Development of Water Resources, SERBIA) and Odud L. (Rivne Regional Water Supply Company, UKRAINE)

9:00 – 9:05

SENTILAKE: DEVELOPMENT OF SENTINEL-2 SATELLITE DATA-BASED SERVICE FOR WATER QUALITY MONITORING IN LATVIAN LAKES

Jakovels D.; Brauns A.; Filipovs J.; Vecvanags A.; Soomets T.  
Institute for Environmental Solutions (LATVIA)

9:05 – 9:10

BIONS (BUSINESS INTELLIGENCE OF NETWORK SOLUTIONS): THE CHALLENGE OF INTEGRATING AI INTO WATER BUSINESS  
Campos A.  
ACCIONA-Water Business (SPAIN)

9:10 – 9:15

SEWER AND RAINWATER DRAINAGE NETWORKS' DESIGN: THE USE OF MODELLING SOFTWARE

Daksa G.; Urbanovics V.; Zemite M.; Rubulis J.; Kajinka M.  
Riga Technical University (LATVIA)

9:15 – 9:20

GIS-BASED ASSESSMENT OF SUB-WATERSHED ECOSYSTEMS DEGRADATION RATE FOR RIVER RESTORATION  
PRIORITISATION

Vesnovskii P.; Zengina T.  
Moscow State Institute of International Relations (RUSSIA); Moscow State University (RUSSIA)

9:20 – 9:25

DOES FLOATING TREATMENT WETLAND CAN EFFECTIVELY TREAT AGRICULTURAL AND URBAN RUNOFF ENRICHED WITH NUTRIENTS, HEAVY METALS, AND AS METALLOID IN THE STORMWATER RECEIVERS?

Nawrot N.; Wojciechowska E.; Walkusz-Miotk J.; Pazdro K.  
Gdansk University of Technology (POLAND); Institute of Oceanology of Polish Academy of Sciences (POLAND)

9:25 – 9:30

SAR ANALYTICAL SOLUTIONS TO LOCATE SUB-SURFACE WATER

Jacobi J.  
Utilis Corporate (ISRAEL)

9:30 – 9:35

WATER DIVERSITY AND PROBLEMS IN WATER RE-USE IN PHARMACEUTICAL ENTERPRISES

Strade E.; Daina Kalnina D.; Kulczycka J.  
Riga Technical University (LATVIA); Mineral and Energy Economy Research Institute (POLAND)

9:35 – 9:40

MAPPING THE WATER SECTOR OF LATVIA

Daksa G.  
Riga Technical University (LATVIA)

9:40 – 9:45

A NOVEL DISTRIBUTED MODULAR ECOLOGICAL WATER INFRASTRUCTURE SYSTEM FOR ERA OF ENVIRONMENTAL PROTECTION AND GREEN

Xiong X.  
International WYNNBEAR Advanced Innovation (UNITED STATES)

9:45 – 9:50

USE OF CLOUD-COMPUTING AND PREDICTIVE WASTEWATER ANALYSIS

Andreides M.  
University of Chemistry and Technology, Prague (CZECH REPUBLIC)

09:50 – 10:30

Questions

10:30 – 11:00

Coffee-break

11:00 – 12:30

### Session 5A. WATER MANAGEMENT

Chair: Zemite M. (Riga Technical University, LATVIA) and Intriago Zambrano J.C. (Delft University of Technology, THE NETHERLANDS)

11:00 – 11:05

ADAPTIVE LANDSCAPES: THE ANIENE RIVER CORRIDOR BETWEEN GREEN AREAS, BUILT-UP SPACE AND RESILIENCE

Di Giacomo T.V.  
Sapienza University of Rome (ITALY)

11:05 – 11:10	CASE: DATA ANALYTICS PROVIDE TOOLS FOR FASTER REACTIONS AND MORE ACCURATE PREDICTIONS – A STARTUP’S JOURNEY Koskinen T., Kariniemi J. Neuroflux (FINLAND)
11:10 – 11:15	SHOULD THE TWO-PHASE EULER REPLACE THE VOLUME-OF FLUID TO SIMULATE LOCALISED AERATION IN HYDRAULIC STRUCTURES? Mendes L. National Laboratory for Civil Engineering (PORTUGAL)
11:15 – 11:20	INCORPORATING NATURE-BASED SOLUTIONS IN THE DEVELOPMENT OF A CLIMATE CHANGE ADAPTATION PLAN: A CASE STUDY OF KURUNEGALA, SRI LANKA Reyes N.J.; Geronimo F.K.; Guerra H.; Jeon M.; Hyeseon C.; Lee-Hyung K. Kongju National University (SOUTH KOREA)
11:20 – 11:25	MATHEMATICAL MODEL USED FOR MICROAERATION IN SEQUENCING BATCH REACTOR FOR H <sub>2</sub> S REMOVAL Andreides M. University of Chemistry and Technology, Prague (CZECH REPUBLIC)
11:25 – 11:30	IMPLICATIONS OF MICROORGANISM SURVIVAL IN DIFFERENT CONSTRUCTED WETLAND ENVIRONMENT Choi H.; Geronimo F.K.; Jeon M.; Reyes N.J.; Lee-Hyung K. Kongju National University (SOUTH KOREA)
11:30 – 11:35	ASSESSMENT OF THE POLLUTANT REMOVAL PERFORMANCE OF A RAIN GARDEN FACILITY TREATING URBAN STORMWATER RUNOFF Jeon M.; Reyes N.J.; Geronimo F.K.; Choi H.; Lee-Hyung K. Kongju National University (SOUTH KOREA)
11:35 – 11:40	COMPARATIVE STUDY OF LOW IMPACT DEVELOPMENT STRUCTURES WITH HIGH AND LOW INFILTRATION SOILS Guerra H.; Geronimo F.K.; Choi H.; Kim Y.; Lee-Hyung K. Kongju National University (SOUTH KOREA)
11:40 – 11:45	INVESTIGATION ON THE FACTORS AFFECTING THE GROWTH AND SURVIVAL OF MICROORGANISMS IN STORMWATER NATURE-BASED SOLUTIONS Geronimo F.K.; Guerra H.; Choi H.; Jeon M.; Reyes N.J.; Lee-Hyung K. Kongju National University (SOUTH KOREA)
11:45 – 11:50	EFFECTS OF ORGANIC CARBON CONTENT ON IN-SITU REMEDIATION TIME USING STEAM-AIR INJECTION Awandu W. Masinde Muliro University of Science & Technology, Kakamega (KENYA) Trötschler O. University of Stuttgart, Stuttgart (GERMANY)
11:50 – 12:30	Questions
12:30 – 14:00	Lunch
14:00 – 15:30	<b><u>Session 6A. WATER MANAGEMENT</u></b>  <u>Chair:</u> Lavrnić S. (University of Bologna, ITALY/SERBIA) and Odud L. (Rivne Regional Water Supply Company, UKRAINE)
14:00 – 14:05	A NOVEL APPROACH TO FAULT DETECTION & ISOLATION IN INDUSTRIAL WATER DISTRIBUTION SYSTEMS USING STATISTICAL METHOD. A CASE-STUDY Hashim H. National University of Ireland (IRELAND)
14:05 – 14:10	THE BARSHA PUMP: ONE WAY TO (CLEANLY) LIFT WATER, MANY WAYS TO DELIVER SMALLHOLDER IRRIGATION Intriago Zambrano J.C.; Michavila J.; Diehl J.C.; Ertsen M.W. Delft University of Technology (THE NETHERLANDS); aQysta B.V. (THE NETHERLANDS)
14:10 – 14:15	THE EFFICIENCY OF SUSPENDED SOLIDS REMOVAL IN THE OPEN TRAYS WITH DIFFERENT TEXTURE OF THE INNER SURFACE Dezhina I. Moscow State University of Civil Engineering (RUSSIA)
14:15 – 14:20	WATER SOURCE PROTECTION - WATER CIRCULATION Xhafa S.; Spahiu S. Regional Water Company Prishtina (KOSOVO)

14:20 – 14:25	<p>CONTINUOUS MICROPLASTIC MONITORING TO UNDERSTAND MICROPLASTIC CONTAMINATION AND ITS' SEASONAL DYNAMICS IN FRESHWATER ECOSYSTEM</p> <p>Barone M.; Robeznieks M.; Lietina S.; Borg Olesen K.; Vianello A.; Lanka A.; Dimante-Deimantovica I. Latvian Institute of Aquatic Ecology (LATVIA); University of Latvia LATVIA); Aalborg University (DENMARK); Norwegian Institute for Nature Research (NORWAY);</p>
14:25 – 14:30	<p>PRELIMINARY APPLICATION OF CITIZEN SCIENCE FOR LAKE WATER QUALITY MONITORING</p> <p>Kendir Cakmak E.; Anbaroglu B.; Ugurlu A. Hacettepe University (TURKEY)</p>
14:30 – 14:35	<p>THE RESULTS OF COMPARATIVE SANITARY-VIROLOGICAL STUDIES OF DRINKING WATER AND WATER SOURCES</p> <p>Amvrosieva T.; Belskaya I.; Paklonskaya N.; Laziuk S.; Shilova Y. The Republican Research and Practical Center for Epidemiology and Microbiology (BELARUS)</p>
14:35 – 14:40	<p>DERIVING NUTRIENT CRITERIA USING STATISTICAL METHODS IN HUNGARY</p> <p>Szomolányi O.; Clement A. Budapest University of Technology and Economics (HUNGARY)</p>
14:40 – 15:00	Questions

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15:00 – 15:30	Coffee-break
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15:30 – 16:00	<b><u>AWARD FOR THE BEST PLATFORM PRESENTATIONS &amp; CLOSING CEREMONY</u></b>
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Dr. Maryna Feierabend - Chair Organising Committee IWA YWP (GERMANY)

Prof., Dr.sc.ing Talis Juhna - Chair Program Committee, Vice-rector for Research, Riga Technical University (LATVIA)

Assist. Prof., Dr.sc.ing Sandis Dejus - Co-Chair Organising Committee, Riga Technical University, Water Research and Environmental Biotechnology Laboratory (LATVIA)



9:00 – 10:30	<b><u>Session 4B. INDUSTRIAL WASTEWATER</u></b>  <b>Chair:</b> Dejus S. (Riga Technical University, LATVIA) and Ekaterina Vasyukova E. (WTE, Germany)
9:00 – 9:05	REMOVAL AND YEARLY VARIABILITY OF SELECTED NON-STEROIDAL ANTI-INFLAMMATORY DRUGS AND ANTIBIOTICS IN A LARGE-SCALE MUNICIPAL WASTEWATER TREATMENT PLANT Dolu T.; Nas B. Konya Technical University (TURKEY)
9:05 – 9:10	PERFORMANCE AND KINETIC EVALUATION OF STARCH DEGRADATION BY THERMOPHILIC ANAEROBIC MOVING BED BIOREACTOR Shahzad H.M.A.; Khan S.J.; Habib Z. National University of Sciences and Technology (PAKISTAN)
9:10 – 9:15	ARE SIDE-STREAM LOADS OF PHARMACEUTICAL COMPOUNDS IMPORTANT FOR THE LARGE-SCALE WASTEWATER TREATMENT PLANTS? Dolu T.; Nas B. Konya Technical University (TURKEY)
9:15 – 9:20	SELECTION OF THE MOST EFFICIENT TEXTILE WASTEWATER PRETREATMENT FOR TREATMENT WITH MEMBRANE SEPARATION PROCESSES Ćurić I.; Dolar D. University of Zagreb (CROATIA)
9:20 – 9:25	CHEMICAL DEPOSITION OF IRON NANOPARTICLES (Fe <sup>0</sup> ) ON TITANIUM NANOWIRES FOR EFFICIENT ADSORPTION OF CIPROFLOXACIN FROM WATER Falyona O.; Maamoun I.; Bensaida K.; Tahara A.; Sugihara Y.; Eljamal O. Kyushu University (JAPAN)
9:25 – 9:30	BREWERY WASTE BY-PRODUCT SACCHAROMYCES CEREVISIAE AS AN ADSORBENT FOR REMAZOL DYE REMOVAL Rápo E.; Tonk S.; Posta K.; Tamás M.; Suciú M. Sapientia Hungarian University of Transylvania (ROMANIA); Szent István University (HUNGARY); National Institute for Research and Development of Isotopic and Molecular Technologies (ROMANIA)
9:30 – 9:35	MINIMIZATION OF THE NATURE INTENSITY OF SULPHATE-CELLULOSE PRODUCTION OF VARIOUS PRODUCTS TYPES Stroganova M. Higher School of Technology and Energy, Saint Petersburg State University of Industrial Technologies and Design (RUSSIA)
9:35 – 9:40	PHENOL REMEDIATION OF OILY WASTEWATER USING A NOVEL OZONIZED ELECTRO-MEMBRANE REACTOR Khalifa O.; Banat F.; Srinivasakannan C.; Hasan S.W. Khalifa University of Science and Technology (UNITED ARAB EMIRATES)
9:40 – 9:45	DEGRADATIONAL BEHAVIOUR OF 2-AND 4-METHOXYANILINES BY THE APPLICATION OF LATERITE SOIL IN FENTON-LIKE OXIDATION: A RATIONAL ANALYSIS Chaturvedi N.K. National Institute of Technology Hamirpur (INDIA)
9:45 – 9:50	ADSORPTION OF PHENOL FROM AQUEOUS SOLUTIONS USING ALUMINUM OXIDE NANOPARTICLES: KINETICS, EQUILIBRIUM, AND THERMODYNAMICS Safwat S.M.; Mohamed N.Y. Cairo University (EGYPT); Housing And Building National Research Center (EGYPT)
9:50 – 9:55	ELECTRO OXIDATION OF FISH MEAL INDUSTRY WASTEWATER IN BATCH STIRRED REACTOR USING Ti/RUO <sub>2</sub> ANODE Raju M. Anna University BIT-Campus (INDIA)
9:55 – 10:30	<b>Questions</b>
10:30 – 11:00	<b>Coffee-break</b>

11:00 – 12:30

### **Session 5B. INDUSTRIAL WASTEWATER TREATMENT**

Chair: Denisova V. (Riga Technical University, LATVIA) and Danilycheva M. (Russia)

11:00 – 11:05

INCIDENTS OF INDUSTRIAL WASTEWATER DISCHARGE TO MUNICIPAL SEWERAGE SYSTEM IN BALTIC SEA REGION COUNTRIES

Dejus S.

Riga Technical University (LATVIA)

11:05 – 11:10

REMOVAL OF HEAVY METALS FROM WASTEWATER BY ELECTROCOAGULATION

Govedarica O.; Rajakovic-Ognjenovic V.N.; Dukic A.; Babic B.

University of Belgrade (SERBIA)

11:10 – 11:15

GROWTH KINETICS OF ACINETOBACTER STRAIN FOR PHENOL REMOVAL SUBJECTED TO SUBSTRATE INHIBITION WITH DIFFERENT KINETIC MODELS

Szilveszter S.; Fiko D.R.; Raduly B.

Sapientia Hungarian University of Transylvania (ROMANIA); University Politehnica of Bucharest (ROMANIA);

11:15 – 11:20

CHARACTERIZATION OF THE WASTEWATER DISCHARGED FROM A LATVIAN DAIRY INDUSTRY

Ekka B.; Juhna T.

Riga Technical University (LATVIA)

11:20 – 11:25

A SEQUENTIAL ELECTROCOAGULATION/ELECTROCHEMICAL OXIDATION PROCESS TO TREAT A MILD STERILIZE LEACHATE

Yakameran E.; Aygun A.

Bursa Technical University (TURKEY)

11:25 – 11:30

POLLUTION MINIMIZATION OF BIODIESEL PROCESSING WASTEWATER BY MEANS OF OPTIMIZATION

Kiliçarslan M.N.; Argun M.E.

Konya Technical University (TURKEY)

11:30 – 11:35

OXIDATIVE DEGRADATION OF BLACK AZO PRINTING DYE WITH HOMOGENEOUS FENTON TREATMENT AND ITS OPTIMIZATION BY DEFINITIVE SCREENING DESIGN

Gvoic V.; Prica M.; Kerkez D.; Petrovic M. ; Kulic Mandic A.; Becelic-Tomin M.; Dalmacija B.

University of Novi Sad (SERBIA)

11:35 – 11:40

REMOVAL OF ACID DYE FROM AQUEOUS SOLUTIONS USING ORANGE AND LEMON PEEL AS BIO-SORBENTS

Ahmed A.E.

Wroclaw University of Science of technology (POLAND)

11:40 – 12:30

**Questions**

12:30 – 14:00

**Lunch**

14:00 – 15:30

### **Session 6B. URBAN RUNOFF AND OTHER TOPICS**

Chair: Petrović M. (University of Novi Sad, SERBIA)

14:00 – 14:05

CONTAMINATION ASSESSMENT OF LEACHATES FROM MSW LANDFILL IN NOVI SAD, SERBIA

Živenčev N.; Novaković M.; Maoduš N.; Mihajlović I.; Ubavin D.; Milovanović D.; Petrović M.

University of Novi Sad (SERBIA)

14:05 – 14:10

URBAN RUNOFF QUALITY: PRELIMINARY RESULTS OF CASE STUDY FROM THREE LATVIAN MUNICIPALITIES

Zemite M.; Daksa G.; Urbanovics V.; Rubulis J.

Riga Technical University (LATVIA); Jurmalas Udens Ltd. (LATVIA)

14:10 – 14:15

GOOD PRACTICES OF A CIRCULAR ECONOMY IMPLEMENTATION: A COMPREHENSIVE REVIEW IN CONTEXT OF WASTEWATER SECTOR

Preisner M.

Mineral and Energy Economy Research Institute (POLAND)

14:15 – 14:20	<p>MICROBIOLOGICAL SAFETY OF AN INDOOR POOL WATER DISINFECTED WITH COMBINED CHLORINATION / UV WATER DISINFECTION</p> <p>Zekanovic M.S.; Pucar B.; Gobin I. Ilirija d.d. (CROATIA); Zadar Public Health Institute (CROATIA); University of Rijeka (CROATIA)</p>
14:20 – 14:25	<p>PROFILING OF AMINO ACIDS AND THEIR INTERACTIONS WITH PROTEINACEOUS COMPOUNDS FOR SEWAGE SLUDGE DEWATERING</p> <p>Xiao K. Huazhong University of Science and Technology (CHINA)</p>
14:25 – 14:30	<p>THE EFFECTS OF THE VEHICLE TRAFFIC AT THE URBAN AREA ON HEAVY METAL CONTAMINATION STATUS IN ROAD SWEEPING WASTE AND BOTTOM SEDIMENTS OF RETENTION TANKS</p> <p>Nawrot N.; Wojciechowska E. Gdansk University of Technology (POLAND)</p>
14:30 – 14:35	<p>GRAVIMETRIC SELECTION OF ACTIVATED SLUDGE FOR SETTLING PROPERTIES IMPROVEMENT AND GRANULAR SLUDGE FORMATION – FULL SCALE CASE STUDY</p> <p>Gemza N. Wroclaw University of Science of Technology (POLAND)</p>
14:35 – 15:00	Questions

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15:00 – 15:30      **Coffee-break**

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15:30 – 16:00      **AWARD FOR THE BEST PLATFORM AND POSTER PRESENTATIONS & CLOSING CEREMONY**

Chairs: Dr. Maryna Feierabend - Chair Organising Committee IWA YWP (GERMANY)

Prof., Dr.sc.ing Talis Juhna - Chair Program Committee, Vice-rector for Research, Riga Technical University (LATVIA)

Assist. Prof., Dr.sc.ing Sandis Dejus - Co-Chair Organising Committee, Riga Technical University, Water Research and Environmental Biotechnology Laboratory (LATVIA)

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**Chair:** Dr. Feierabend M. (IWA YWP, Germany)

**Co-Chair:** Dr. Dejus S. (Riga Technical University, Latvia)

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Dalecka B. (Riga Technical University/KTH, Latvia/Sweden)  
Sebestyén É. (UTB Envirotec Ltd., Hungary)  
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Dr. Sabic Runjavec M. (University of Zagreb, Faculty of Chemical Engineering and Technology, Croatia)  
Dr. Nuić I. (University of Split, Faculty of Chemistry and Technology, Croatia)  
Ikizoglu Z. R. (Tübitak Marmara Research Center, Turkey)  
Lavrinovics A. (Riga Technical University/Institute for Environmental Solutions, Latvia)  
Zemite M. (Riga Technical University, Latvia)  
Mertens D. (WTE, Germany)  
Zakhar R. (Slovak University of Technology, Slovakia)  
Intriago J.C. (Delft University of Technology, The Netherlands)  
Kaljunen J. (Aalto University Water Laboratory, Finland)  
Denisova V. (Riga Technical University, Latvia)  
Aleksiev D. (Organising Partner, Russia)

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**Co-Chair:** Prof. Jobbágy A. (Budapest University of Technology & Economic, Hungary)

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