Latvia University of Life Sciences and Technologies
Faculty of Engineering and Information Technologies
Latvian Academy of Agricultural and Forestry Sciences

25th International Scientific Conference

ENGINEERING FOR RURAL DEVELOPMENT

PROGRAMME

Jelgava, Latvia, May 27-29, 2026

Wednesday, 27 May

16^{00} – 17^{00} Registration of participants,
Faculty of Engineering and Information Technologies, LBTU,
5 J. Cakstes blvd., lobby

Thursday, 28 May

9^{00} – 10^{00} Registration of participants,
Faculty of Engineering and Information Technologies, LBTU,
5 J. Cakstes blvd., lobby

10^{00} –10^{15} Plenary session,
5 J. Cakstes blvd., Room 410
Welcome speech
Gatis Vitols,
Latvia University of Life Sciences and Technologies,
Vice-rector of science
Aivars Aboltins,
Conference programme committee,
Chairman

Join Zoom Meeting
Meeting ID: 951 2358 9784
Passcode: aXKQ93GqC

10^{15} –10^{45} Challenges in laser weeder design
Vitalijs Osadcuks,
Latvia University of Life Sciences and Technologies

https://zoom.us/j/95123589784?pwd=IL8CgtT9ZMYmZ9lv2AC11zgvEo1V2a.1

11^{00} – 13^{00} Work in sections
13^{00} – 14^{20} Photo, Lunch, Liela str. 2, Jelgava palace
14^{20} – 16^{00} Work in sections
16^{00} – 16^{30} Coffee break
5 J. Cakstes blvd., Room 212
16^{30} – 18^{30} Work in sections
19^{00} Conference dinner
5 J. Cakstes blvd., Room 212

The conference will be held in hybrid (on-site and on-line) format.
Sections may be attended and reports may be presented in both formats.
Regulations: presentation – **15** min
discussion – **5** min
EEST time used in all timetables
Conference language – **English**

Friday, 29 May

8^{30} – 18^{00} Social tour

WiFi Internet access during the conference:
network access using vouchers, ask at the registration table.

PROGRAMME COMMITTEE

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Yang Zhang, University of Sheffield, United Kingdom

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Latvian Academy of Agricultural and Forestry Sciences, Unit of Engineering Sciences
http://llmza.lv/index.php/en/units/unit-of-engineering-sciences

International Symposium on Hydrogen Energy, Renewable Energy and Materials
http://www.herem.org/

Weedbot - High precision laser weeding technology
https://weedbot.eu/

Nordic Association of Agricultural Science
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5 J.Cakstes blvd., **Room 326, ONLINE SECTION**
Join Zoom Meeting
https://zoom.us/j/91082515004?pwd=XMFgBNWRWvx3uORyTmbWqlnMFAbqOj.1
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Chairman: Dr.sc.ing. **Adolfs Rucins**,
Latvia University of Life Sciences and Technologies, Latvia
Vice-chairman: Dr.sc.ing. **Volodymyr Bulgakov**
National University of Life and Environmental Sciences of Ukraine, Ukraine

11:00 TF155 JUSTIFICATION OF SCHEME AND PARAMETERS OF PNEUMATIC WORKING BODY FOR PRECISE APPLICATION OF TECHNOLOGICAL MATERIALS IN CROP PRODUCTION
Martin Aller, Yevhen Ihnatiev, Tormi Lillerand, Juri Olt
Estonian University of Life Sciences, Estonia; Dmytro Motornyi Tavria State Agrotechnological University, Ukraine

11:20 TF065 DEVELOPMENT OF TRACTION CONTROL SYSTEM FOR ELECTRIC UNMANNED GROUND VEHICLE
Joonas Paales, Gregor Randla, Yevhen Ihnatiev, Tormi Lillerand, Juri Olt
Estonian University of Life Sciences, Estonia; Dmytro Motornyi Tavria State Agrotechnological University, Ukraine

11:40 TF103 ANALYSIS OF ROOT CROP SCREW GRINDER-MIXER PERFORMANCE
Viktor Baranovsky, Vitalii Pankiv, Roman Komar, Viktor Tesliuk, Viktor Makarov
Ternopil Ivan Puluj National Technical University, Ukraine; National University of Life and Environmental Sciences of Ukraine, Ukraine

12:00 TF104 EXPERIMENTAL STUDIES OF SPECIFIC POWER CONSUMPTION OF COMBINED SCREW CONVEYOR
Vitalii Pankiv, Viktor Baranovsky, Natalia Dubchak, Oleg Huryk, Andrii Pastushenko
Ternopil Ivan Puluj National Technical University, Ukraine; Separate unit National University of Life Resources and Environmental Management of Ukraine "Berezhana Agrotechnical Institute", Ukraine

12:20 TF106 RESEARCH ON PROCESS OF CLEANING TABLE BEET ROOT CROPS WITH SPIRAL CLEANER
Volodymyr Bulgakov, Ivan Holovach, Volodymyr Martyniuk, Oleksandra Trokhaniak, Dainis Viesturs, Adolfs Rucins, Juri Olt, Yevhen Ihnatiev
National University of Life and Environmental Sciences of Ukraine, Ukraine; Latvia University of Life Sciences and Technologies, Latvia; Estonian University of Life Sciences, Estonia; Dmytro Motornyi Tavria State Agrotechnological University, Ukraine

12:40 TF107 INVESTIGATION OF DEGREE OF DAMAGE TO TABLE BEET ROOTS DURING CLEANING WITH SPIRAL CLEANER
Volodymyr Bulgakov, Ivan Holovach, Volodymyr Martyniuk, Oleksandra Trokhaniak, Aivars Aboltins, Adolfs Rucins
National University of Life and Environmental Sciences of Ukraine, Ukraine; Latvia University of Life Sciences and Technologies, Latvia

13:00 *PHOTO, LUNCH*

14:20 TF108 STUDY OF DEVICE WITH FLEXIBLE SCREW CONVEYOR FOR REMOVING DAMAGED SOIL CLEARED FROM CRATER
Oleksandra Trokhaniak
National University of Life and Environmental Sciences of Ukraine, Ukraine

14:40 TF109 IMPROVEMENT OF MOVEMENT STABILITY OF TRACTOR-MACHINE UNIT DURING INTER-ROW CULTIVATION OF SUGAR BEET
Volodymyr Bulgakov, Aivars Aboltins, Adolfs Rucins, Viktor Antoshchenkov, Ivan Holovach, Oleksandra Trokhaniak, Juri Olt, Yevhen Ihnatiev, Nadia Khomyk, Roman Antoshchenkov, Vadym Yaremenko
National University of Life and Environmental Sciences of Ukraine, Ukraine; Latvia University of Life Sciences and Technologies, Latvia; Kharkiv Petro Vasylenko National Technical University of Agriculture, Ukraine; Estonian University of Life Sciences, Estonia; Dmytro Motornyi Tavria State Agrotechnological University, Ukraine; Ternopil Ivan Puluj National Technical University, Ukraine; State Biotechnological University, Ukraine

15:00 TF110 SYNTHESIS OF MACHINE-TRACTOR UNIT AUTOMATIC CONTROL SYSTEM FOR INTER-ROW CULTIVATION OF SUGAR BEET
Volodymyr Bulgakov, Aivars Aboltins, Adolfs Rucins, Roman Antoshchenkov, Viktor Kis, Ivan Holovach, Oleksandra Trokhaniak, Viktor Antoshchenkov, Oleh Chernysh, Yevhen Ihnatiev
National University of Life and Environmental Sciences of Ukraine, Ukraine; Latvia University of Life Sciences and Technologies, Latvia; State Biotechnological University, Ukraine; Kharkiv Petro Vasylenko National Technical University of Agriculture, Ukraine; Estonian University of Life Sciences, Estonia; Dmytro Motornyi Tavria State Agrotechnological University, Ukraine

15:20 TF112 STUDY ON EFFECTS OF MICROCLIMATIC PARAMETERS ON DEVELOPMENT AND PRODUCTIVITY OF INSECT CULTURES
Volodymyr Belchenko, Nonna Pishchanska, Aivars Aboltins, Adolfs Rucins, Igor Podmazko, Oksana Bulgakova, Andrii Pylypenko
Engineering and Technological Institute "Biotekhnika" of NAAS, Ukraine; Latvia University of Life Sciences and Technologies, Latvia; National University of Life and Environmental Sciences of Ukraine, Ukraine

15:40 TF113 TECHNICAL AND TECHNOLOGICAL SOLUTION FOR SMALL-SCALE PRODUCTION OF LIQUID MICROBIOLOGICAL RODENTICIDE IN FERMENTER
Igor Bespalov, Nina Pyliak, Aivars Aboltins, Adolfs Rucins, Raisa Vozhehova, Oksana Bulgakova, Maksym Porodko
Engineering and Technological Institute "Biotekhnika" of NAAS, Ukraine; Latvia University of Life Sciences and Technologies, Latvia; Institute of Climate Smart Agriculture of the National Academy of Agrarian Sciences of Ukraine, Ukraine; National University of Life and Environmental Sciences of Ukraine, Ukraine; National Scientific Center "Institute of Agriculture" of the National Academy of Agrarian Sciences of Ukraine, Ukraine

16:00 *COFFEE BREAK*

16:20 TF114 HARDWARE AND SOFTWARE SYSTEM FOR RECORDING BIOPREPARATION PRODUCTION PROCESS PARAMETERS
Dmytro Kovalchuk, Viktor Dorovskikh, Dainis Viesturs, Adolfs Rucins, Oksana Bulgakova, Margarita Stepanova, Oleh Zhurylo
Engineering and Technological Institute "Biotekhnika" of NAAS, Ukraine; Latvia University of Life Sciences and Technologies, Latvia; National University of Life and Environmental Sciences of Ukraine, Ukraine; Institute of Climate Smart Agriculture of the National Academy of Agrarian Sciences of Ukraine, Ukraine; Kharkiv National University of Radio Electronics, Ukraine

16:40 TF115 TECHNOLOGY FOR OBTAINING COMPLEX MICROBIAL PREPARATION FOR BIOLOGICAL PROTECTION OF PLANTS FROM PESTS AND DISEASES USING BIOREACTOR
Nina Pyliak, Vladislav Yaroshevsky, Mycola Tkachenko, Aivars Aboltins, Adolfs Rucins, Oksana Bulgakova, Oleksandra Trokhaniak, Hanna Tsyon
Engineering and Technological Institute "Biotekhnika" of NAAS, Ukraine; National Scientific Center "Institute of Agriculture" of the National Academy of Agrarian Sciences of Ukraine, Ukraine; Latvia University of Life Sciences and Technologies, Latvia; National University of Life and Environmental Sciences of Ukraine, Ukraine; Ternopil Ivan Puluj National Technical University, Ukraine

17:00 TF116 INVESTIGATION OF JET-LOOP BIOREACTOR JET AERATOR OPERATION MODES
Vladislav Yaroshevsky, Serhii Yasynskyi, Tetiana Osypenko, Volodymyr Bulgakov, Yevhenii Bakulin, Dainis Viesturs, Valentina Bakulina
Engineering and Technological Institute "Biotekhnika" of NAAS, Ukraine; National University of Life and Environmental Sciences of Ukraine, Ukraine; Latvia University of Life Sciences and Technologies, Latvia

17:20 TF117 BIOLOGIZED TECHNOLOGY ELEMENTS IN CONFECTIONERY SUNFLOWER: EFFECTIVENESS ASSESSMENT
Olga Onyshchenko, Ivan Semenenko, Yevheniia Holub, Iaroslav Gadzalo, Viktor Kaminskyi, Adolfs Rucins, Aivars Aboltins, Volodymyr Bulgakov
Engineering and Technological Institute "Biotekhnika" of NAAS, Ukraine; National Academy of Agrarian Sciences of Ukraine, Ukraine; Latvia University of Life Sciences and Technologies, Latvia; National University of Life and Environmental Sciences of Ukraine, Ukraine

17:40 TF118 STUDY OF FORCE PARAMETERS OF FLEXIBLE SCREW CONVEYOR DURING TRANSPORTATION OF EXCAVATED CONTAMINATED SOIL FROM CRATER CENTER
Oleksandra Trokhaniak, Myroslav Budzanivskyi, Volodymyr Martyniuk, Aivars Aboltins, Adolfs Rucins
National University of Life and Environmental Sciences of Ukraine, Ukraine; Institute of Mechanics and Automatics of Agroindustrial Production of the National Academy of Agrarian Sciences of Ukraine, Ukraine; Latvia University of Life Sciences and Technologies, Latvia

18:00 TF119 STUDY OF WORKING BODY FOR REMOVING DAMAGED SOIL LAYER INSIDE CRATER
Oleksandra Trokhaniak, Stanislav Kovalchuk
National University of Life and Environmental Sciences of Ukraine, Ukraine

18:20 TF192 OSCILLATIONS OF HEATING PLATFORM FOR 3D PRINTING OF AGRICULTURAL DRONE PARTS
Ivan Rogovskii, Viktor Krushelnytskyi, Maksym Dombrovskyi
National University of Life and Environmental Sciences of Ukraine, Ukraine

18:40 TF207 STUDY OF FINGER-TYPE SAFETY CLUTCH
Volodymyr Bulgakov, Aivars Aboltins, Adolfs Rucins, Dainis Viesturs, Olena Glazunova, Oleksandra Trokhaniak, Zinoviy Ruzhylo, Mykhailo Chernovol, Arlindo Almeida
National University of Life and Environmental Sciences of Ukraine, Ukraine; Latvia University of Life Sciences and Technologies, Latvia; Central Ukrainian National Technical University, Ukraine; Polytechnic Institute of Braganca (ESAB/IPB), Mountain Research Center (CIMO), Portugal

19:00 TF208 STUDY OF UNIT ENERGY PARAMETERS TILLING SOIL WITH HARROW USING SCREW WORKING BODIES
Volodymyr Bulgakov, Simone Pascuzzi, Dainis Viesturs, Adolfs Rucins, Olena Glazunova, Oleksandra Trokhaniak, Mariia Ruzhylo, Mykola Klendii, Mykhailo Chernovol
National University of Life and Environmental Sciences of Ukraine, Ukraine; University of Bari Aldo Moro, Italy; Latvia University of Life Sciences and Technologies, Latvia; Separate unit National University of Life Resources and Environmental Management of Ukraine "Berezhana Agrotechnical Institute", Ukraine; Central Ukrainian National Technical University, Ukraine

Section 2: **ENGINEERING TECHNOLOGIES**

5 J.Cakstes blvd., **Room 319**,
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Latvia University of Life Sciences and Technologies, Latvia
Vice-chairman: Dr.sc.ing. **Egle Jotautiene**
Vytautas Magnus University, Lithuania

11:00	TF120	EVOLUTION OF POWER AND MASS IN SPECIALISED AGRICULTURAL TRACTORS: TREND ANALYSIS **Deepak Kumar Yadav, Tatevik Yezekyan, Alessia Cogato, Marco Sozzi, Francesco Marinello** *University of Padova, Italy*
11:20	TF121	CONSTRUCTION OF MODEL SERIES OF CARS, TRACTORS, AND SELF-PROPELLED CHASSIS USING CONDITIONAL ENTROPY **Mikhail Podryhalo, Nikolay Artiomov, Volodymyr Krasnokutskyi, Vitalii Shein** *Kharkiv National Automobile and Highway University, Ukraine; State Biotechnological University, Ukraine; National Technical University " Kharkiv Polytechnic Institute", Ukraine*
11:40	TF053	ENGINEERING AND TECHNOLOGICAL JUSTIFICATION FOR THE BIOTECHNOLOGICAL PRODUCTION OF A MYCOBIOLOGICAL PREPARATION **Viktor Tesliuk, Yulia Kolomiyets, Viktor Baranovsky, Raisa Kovbasenko** *National University of Life and Environmental Sciences of Ukraine, Ukraine; Ternopil Ivan Puluj National Technical University, Ukraine; Institute of Cell Biology and Genetic Engineering , Ukraine*
12:00	TF085	INTEGRATED MANAGEMENT OF RELIABILITY AND TECHNO-ECONOMIC EFFICIENCY OF VEHICLES BASED ON ENGINE AIR FILTER REPLACEMENT LOGISTICS **Andriy Novitskiy, Valentyna Melnyk, Zinoviy Ruzhylo, Oleksandr Bannyi, Yuriy Novitskiy** *National University of Life and Environmental Sciences of Ukraine, Ukraine*
12:20	TF153	RESEARCH OF INDICATORS OF HUMUS CONTENT IN SOILS OF POLTAVA REGION (UKRAINE) AND TECHNOLOGIES OF ITS RESTORATION AND INCREASE **Sergii Liashenko, Anton Kelemesh, Oleksii Burlaka, Andrii Lazorenko** *Poltava State Agrarian University, Ukraine*
12:40	TF177	CONTACT INTERACTION COEFFICIENT BETWEEN ROOT AND SCREW TURN **Maria Pankiv, Viktor Baranovsky, Natalia Dubchak, Valentin Potapenko, Vasyl Ramsh** *Ternopil Ivan Puluj National Technical University, Ukraine; Separate unit National University of Life Resources and Environmental Management of Ukraine "Berezhana Agrotechnical Institute", Ukraine*
13:00		*PHOTO, LUNCH*
14:20	TF031	EXPERIMENTAL STUDY OF PRECISION SEEDING METERING SYSTEM SEED FALL RATE **Egle Jotautiene, Davut Karayel, Hasan Yilmaz, Sigitas Petkevicius** *Vytautas Magnus University, Lithuania; Akdeniz University, Turkey*
14:40	TF034	GREEN COMPOSITE BASED ON RECYCLED RUBBER FOR TRACKED DRIVE OF MULTI-PURPOSE AGRICULTURAL ROBOTIC PLATFORM **Olena Nalobina, Mykola Holotiuk, Oleh Bundza, Artem Mykhailov** *National University of Water and Environmental Engineering, Ukraine*

15:00 TF079 MICROWAVE-ASSISTED FREEZE-DRYING: PHYSICAL LIMITATIONS AND PLASMA-AWARE SYSTEM ARCHITECTURE
Sergey Kravchenko, Natalia Kravchenko, Viktor Kravchenko, Nikolajs Kulesovs, Kristine Carjova, Daria Panova
SIA " Cryogenic and vacuum systems", Latvia; vik.works UG, Germany; Tallinn University of Technology, Estonia

15:20 TF090 NATURE-BASED MOSS BARRIERS FOR URBAN NOISE ABSORPTION: IMPEDANCE TUBE ASSESSMENT OF BOREAL MOSS SPECIES
Juta Karklina, Edgars Karklins
Latvia University of Life Sciences and Technologies, Latvia

15:40 TF160 FROM TECHNICAL SPECIFICATIONS TO OPERATIONAL ALIGNMENT: FIREFIGHTING VEHICLE PLANNING IN RURAL AREAS
Viktorija Politika, Andrejs Sisovs, Jelena Pundure, Tatjana Tambovceva
Riga Technical University, Latvia

16:00 *COFFEE BREAK*

16:20 TF173 SURVIVAL SKILLS IN EVENT OF NATURAL DISASTER
Uldis Karlsons, Dace Brizga
Latvia University of Life Sciences and Technologies, Latvia

16:40 TF227 DEVELOPMENT AND TESTING OF SELF-CLEANING SAND RETENTION SCREENS FOR HIGH-TEMPERATURE WELLS
Gulzada Umirova, Aidar Kuttybayev, Mars Narbaev, Irzabek Tovassarov
Kazakh National Research Technical University named after K.I. Satpayev, Kazakhstan

17:00 TF195 SOME INDICATORS OF MILKING ROBOT EFFICIENCY: CASE STUDY ON POLISH FARM WITH ONE-STALL AMS
Marek Gaworski, Slawomir Maciejak
Warsaw University of Life Sciences, Poland

17:20 TF210 RESEARCH ON WEED DESTRUCTION MECHANIZED PROCESS BY FLAME CULTIVATION OF VEGETABLE AND ROW CROPS IN ORGANIC FARMING
Valerii Adamchuk, Igor Savchenko, Petro Rykhlivskyi, Aivars Aboltins, Adolfs Rucins
Institute of Mechanics and Automatics of Agroindustrial Production of the National Academy of Agrarian Sciences of Ukraine, Ukraine; Latvia University of Life Sciences and Technologies, Latvia

17:40 TF213 CFD MODELLING OF NEW DESIGNED HEAT EXCHANGER
Viktor Trokhaniak, Dainis Viesturs, Adolfs Rucins, Yevhenii Bakulin, Oleksandr Synyavskiy, Larysa Kolomyets, Valentina Bakulina
National University of Life and Environmental Sciences of Ukraine, Ukraine; Latvia University of Life Sciences and Technologies, Latvia; National Scientific Center "Institute of Agriculture" of the National Academy of Agrarian Sciences of Ukraine, Ukraine

18:00 TF209 USAGE OF MICROBIAL FUNGICIDAL PREPARATIONS IN APPLE ORCHARDS AND THEIR EFFECT ON FRUIT STORAGE UNDER REFRIGERATION CONDITIONS
Nina Pyliak, Olena Nikipelova, Antonina Barabash, Oksana Bulgakova, Aivars Aboltins, Adolfs Rucins, Anatoliy Zaryshnyak, Anatoliy Bondarchuk
Engineering and Technological Institute "Biotekhnika" of NAAS, Ukraine; National University of Life and Environmental Sciences of Ukraine, Ukraine; Latvia University of Life Sciences and Technologies, Latvia; National Academy of Agrarian Sciences of Ukraine, Ukraine; National Scientific Center "Institute of Agriculture" of the National Academy of Agrarian Sciences of Ukraine, Ukraine

18:20 TF226 SIMULATION AND EXPERIMENTAL EVALUATION OF EROSION WEAR OF ANTI-SAND FILTERS AT HIGH FLOW VELOCITIES AND PRESENCE OF FINE SAND
Gulzada Umirova, Zaira Matayeva, Oleksandr Kamyshatskyi, Zhanel Aubakirova
Kazakh National Research Technical University named after K.I. Satpayev, Kazakhstan; Dnipro University of Technology, Ukraine

18:40 TF048 ASSESSMENT OF OPERATIONAL RELIABILITY OF MIXER-FEEDER MACHINES UNDER CONDITIONS OF LIVESTOCK ENTERPRISES
Andriy Novitskyy, Ivan Holovach, Oleksandr Bannyi, Yuriy Novitskyy
National University of Life and Environmental Sciences of Ukraine, Ukraine

19:00 *CONFERENCE DINNER*

5 J.Cakstes blvd., **Room 312**,
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Latvia University of Life Sciences and Technologies, Latvia
Vice-chairman: Dr.oec. **Ilze Balode**,
Riga Stradins University, Latvia

11:00 TF142 EARLY-STAGE TESTING OF MINERAL-BASED SORBENT PROTOTYPE SYSTEMS FOR PHOSPHORUS CAPTURE IN EUTROPHIC LAKES OF LATVIA AND ESTONIA
Dagnija Grabuza, Ruta Ozola-Davidane, Linda Grinberga, Kersti Kangro, Krista Alikas, Mirjam Uusoue
Latvia University of Life Sciences and Technologies, Latvia; University of Tartu, Estonia

11:20 TF076 ARCHITECTURE OF DISTRIBUTED DIAGNOSTIC SYSTEM FOR AGRICULTURAL PROCESSING EQUIPMENT: CASE STUDY OF FREEZE-DRYING SYSTEMS
Sergey Kravchenko, Natalia Kravchenko, Viktor Kravchenko, Nikolajs Kulesovs, Kristine Carjova, Daria Panova
SIA " Cryogenic and vacuum systems", Latvia; vik.works UG, Germany; Tallinn University of Technology, Estonia

11:40 TF081 OPERATIONAL ROBUSTNESS ASSESSMENT OF DISTRIBUTED MONITORING SYSTEMS APPLIED TO FREEZE-DRYING EQUIPMENT
Sergey Kravchenko, Natalia Kravchenko, Nikolajs Kulesovs, Kristine Carjova, Daria Panova
SIA " Cryogenic and vacuum systems", Latvia; Tallinn University of Technology, Estonia

12:00 TF078 EXPERIMENTAL VALIDATION OF LOG-BASED DIAGNOSTIC METHODS FOR FREEZE-DRYING EQUIPMENT USING DISTRIBUTED LABORATORY TEST PLATFORM
Sergey Kravchenko, Natalia Kravchenko, Nikolajs Kulesovs, Kristine Carjova, Daria Panova
SIA " Cryogenic and vacuum systems", Latvia; Tallinn University of Technology, Estonia

12:20 TF091 HIQCES: UNIFIED QUANTUM COGNITIVE ARCHITECTURE FOR EXPLAINABLE, OPTIMIZED RURAL ENGINEERING DECISION SUPPORT
Muhammad Aamir Mahmood
Virtual University of Pakistan, Pakistan

12:40 TF168 PREDICTIVE ANGULAR POSITION CONTROL USING EVENT-TIME ESTIMATION AND LATERALLY POLARIZED PERMANENT MAGNET
Uldis Zaimis, Edgars Skruodis
Riga Technical University Liepaja Academy, Latvia; Vidzeme University of Applied Sciences, Latvia

13:00 *PHOTO, LUNCH*

14:20 TF220 SYNERGY: HIERARCHICAL PREDICTIVE CONTROL FRAMEWORK FOR SUSTAINABLE BIO-INDUSTRIAL SYSTEMS
Muhammad Aamir Mahmood
Virtual University of Pakistan, Pakistan

14:40 TF229 DEVELOPMENT OF REAL-TIME FORECASTING METHODOLOGY FOR DRILLING FLUID PROPERTY CHANGES BASED ON SURFACE SENSOR DATA
Samal Muratova, Volodymyr Khomenko, Oleksandr Pashchenko, Kuanysh Tavasarov
Kazakh National Research Technical University named after K.I. Satpayev, Kazakhstan; Dnipro University of Technology, Ukraine

15:00 TF233 AGRO-CPS: INTEGRATED CYBER-PHYSICAL FRAMEWORK FOR MULTI-AGENT SMART AGRICULTURE WITH SAFETY AND CARBON OPTIMIZATION
Muhammad Aamir Mahmood, Abdul Waqas
Virtual University of Pakistan, Pakistan; Latvia University of Life Sciences and Technologies, Latvia

15:20 TF017 ENGINEERING-ECONOMIC ASSESSMENT OF UKRAINE DIGITAL LAND CADASTRE: QUANTIFYING ADDED VALUE FROM GEODATA ACROSS AGRICULTURE, ENERGY AND TRANSPORT PROJECTS
Andrii Martyn, Liudmyla Hunko, Nataliia Medynska, Anatolii Poltavets, Liudmyla Kolosa
National University of Life and Environmental Sciences of Ukraine, Ukraine

15:40 TF029 INVESTIGATION OF AGRICULTURAL LAND MARKET IN UKRAINE
Olha Tykhenko, Andrii Martyn, Oleksandr Shevchenko, Ruslan Tykhenko, Ivan Openko, Andrii Synieutskyi
National University of Life and Environmental Sciences of Ukraine, Ukraine

16:00 *COFFEE BREAK*

16:20 TF156 REAL ESTATE DEVELOPMENT STRATEGY IN EMERGING REGIONAL CITIES: DATA-DRIVEN FRAMEWORK FOR INFRASTRUCTURE AND SUSTAINABILITY PLANNING
Rashmi Jaymin-Sanchaniya, Ganesalingam Kireksi Romenath, Nikunj Niranjanbhai Pandya, Antra Kundzina, Janis Vanags
Riga Technical University, Latvia; Maharaja Sayajirao University of Baroda, India

16:40 TF075 PRODUCTIVITY OF COKE AND REFINED PETROLEUM USE IN AGRICULTURE, FORESTRY AND FISHING INDUSTRIES IN THE BALTIC STATES AND FINLAND
Ilze Balode, Andrejs Jaunzems
Riga Stradins University, Latvia; Ventspils University of Applied Sciences, Latvia

17:00 TF172 COMPARATIVE ANALYSIS OF TECHNOLOGY TRANSFER EFFICIENCY IN AGRI-FOOD SECTORS OF EUROPEAN COUNTRIES
Aleksejs Hilkevics
Ventspils University of Applied Sciences, Latvia

17:20 TF174 IMPLEMENTATION PROFILE OF SOLAR ENERGY SOLUTIONS THROUGH EU FUNDED ENERGY PROJECTS
Eliza Elza Lipsane, Gunita Mazure
Latvia University of Life Sciences and Technologies, Latvia

17:40 TF187 HOW FAST DEVELOPMENT AND ADOPTION OF DIGITIZED PROCESSES ALLOW MANUFACTURING COMPANIES TO MANAGE COMPLEXITY: BIBLIOMETRIC NETWORK ANALYSIS
Florian Zill, Inese Mavlutova
BA School of Business and Finance of the University of Latvia, Latvia

18:00 TF217 TECHNO-ECONOMIC ASSESSMENT OF PV-PEM INTEGRATION FOR KURZEME COASTAL REGION
Andris Backurs, Leo Jansons, Aigars Laizans, Sanda Lapuke
Latvia University of Life Sciences and Technologies, Latvia; Riga Technical University, Latvia

18:20 TF158 ECONOMIC DETERMINANTS OF URBAN HOUSING AFFORDABILITY: COST-BENEFIT ANALYSIS OF CONSTRUCTION AND FINANCING FACTORS
Rashmi Jaymin-Sanchaniya, Vihanga Akushla De Silva Weligodage, Nikunj Niranjanbhai Pandya, Antra Kundzina, Janis Vanags
Riga Technical University, Latvia; Maharaja Sayajirao University of Baroda, India

19:00 *CONFERENCE DINNER*

5 J.Cakstes blvd., **Room 410**,
Join Zoom Meeting
https://zoom.us/j/94627357142?pwd=eE4bhor4rAwZsh6OZBSIqHYVew4dwq.1
Meeting ID: 946 2735 7142
Passcode: K9eQbzbpR

Chairman: Dr.sc.ing. **Gints Birzietis**,
Latvia University of Life Sciences and Technologies, Latvia
Vice-chairman: Dr.hab.ing. **Miroslaw Rucki**
Casimir Pulaski Radom University, Poland

11:00 TF063 ASSESSMENT OF NOX EMISSION CHARACTERISTICS OF E85-FUELLED VEHICLE WITH IMPLICATIONS FOR RURAL TRANSPORT SYSTEMS
Edward Kozlowski, Piotr Laskowski, Magdalena Zimakowska-Laskowska, Piotr Wisniowski, Andrzej Swiderski
Lublin University of Technology, Poland; Warsaw University of Technology, Poland; Motor Transport. Institute, Poland; Environment Protection Centre, Motor Transport. Institute, Poland

11:20 TF157 IMPACT OF HYDROGEN INJECTION ON PERFORMANCE AND EMISSIONS OF TRACTOR DIESEL ENGINE OPERATING ON HVO
Karlis Amatnieks, Ruslans Smigins, Gunars Krikscuns, Aivars Birkavs
Latvia University of Life Sciences and Technologies, Latvia; VTUA, Latvia

11:40 TF165 COST-EFFECTIVE DUAL-FUEL COMBUSTION STRATEGY COMBINING LPG WITH PROTECTIVE INTAKE WATER INJECTION
Uldis Zaimis, Alberto Bonomi, Armands Jurjevs
Riga Technical University Liepaja Academy, Latvia; SIA "ABLabs", Latvia

12:00 TF070 IMPACT OF RECLAIMED WASTEWATER FILTER CAKE MATERIAL ON RHEOLOGY AND COMPRESSIVE STRENGTH OF CONCRETE MADE WITH CEM II AND CEM III BINDERS
Ernests Ozolins, Arturs Macanovskis, Nikola Sinica, Maris Tupesis
SIA "Dzelzsbetons MB", Latvia; SIA "Betona petijumu centrs", Latvia

12:20 TF126 UNDERSTANDING GREENWASHING AND CONSUMER TRUST IN HUNGARIAN CONTEXT
Andras Szeberenyi, Agnes Furesz, Imre Matyas Kovacs
Szent Istvan University, Hungary; Hungarian University of Agriculture and Life Sciences, Hungary

12:40 TF129 MODULAR BOILER HOUSE FOR DISTRIBUTED BIOMASS AND RDF CO-INCINERATION
Dmitrijs Rusovs, Sandis Gromovs, Janis Meikulans
Riga Technical University, Latvia; SIA "EcoHeat Technologies", Latvia

13:00 *PHOTO, LUNCH*

14:20 TF183 EFFECT OF WHEAT STRAW AND PEAT ADDITIVES ON MECHANICAL STRENGTH OF POULTRY MANURE GRANULES
Imants Plume, Aleksandrs Adamovics, Aivars Kakitis, Lauris Plume
Latvia University of Life Sciences and Technologies, Latvia

14:40 TF042 ENHANCEMENT OF $C_{DIAMOND}$-(WC-Co)-CrB_2-ZrO_2 COMPOSITE WITH ALUMINA NANOPOWDER
Boranbay Ratov, Volodymyr Mechnik, Edvin Hevorkian, Miroslaw Rucki
Kazakh National Research Technical University named after K.I. Satpayev, Kazakhstan; V.Bakul Institute for Superhard Materials NAS, Ukraine; University of Life Sciences in Lublin, Poland; Casimir Pulaski Radom University, Poland

15:00 TF044 IMPROVEMENT OF REACTION TO FIRE PERFORMANCE FOR WOOD RIBBON PANELS MADE OF ASPEN OR THERMALLY MODIFIED ASPEN WOOD LAMELLAS
Edgars Buksans, Kristaps Grinbergs
Forest and Wood Products Research and Development Institute, Latvia; SIA "4PLUS", Latvia

15:20 TF058 INFLUENCE OF EXTERNAL DEFECTS ON MECHANICAL PROPERTIES OF BIMETALLIC CASTINGS AND CAST-WELDED BIMETALLIC CONSTRUCTIONS
Yevhenii Aftandiliants, Svyatoslav Gnyloskurenko, Iulia Kvasnytska, Kateryna Kvasnytska, Volodymyr Noha
Physico-technological Institute of Metals and Alloys, Ukraine; National University of Life and Environmental Sciences of Ukraine, Ukraine

15:40 TF069 IMPACT OF INCORPORATING GRAPHENE NANOPLATELET DISPERSIONS ON STRENGTH DEVELOPMENT OF LOW-CARBON CEMENTITIOUS MATRICES
Ernests Ozolins, Arturs Macanovskis, Nikola Sinica, Maris Tupesis
SIA "Dzelzsbetons MB", Latvia; SIA "Betona petijumu centrs", Latvia

16:00 *COFFEE BREAK*

16:20 TF144 EFFECT OF PINE WOOD MOISTURE CONTENT ON COATING ADHESION AND PROCESS STABILITY UNDER UV-LED AND UV MERCURY CURING
Arturs Dzenis, Ainars Uzuls, Vilnis Jakovlevs, Uldis Spulle
Latvia University of Life Sciences and Technologies, Latvia; SIA "Kokparstrade 98", Latvia; Latvia University of Life Sciences and Technologies Malnava College, Latvia; Institute of Civil Engineering and Woodworking, Latvia

16:40 TF150 MECHANICAL AND THERMAL PROPERTIES OF RECYCLED HIGH-DENSITY POLYETHYLENE: EXPERIMENTAL INVESTIGATION
Harikrishnan Krishnan Muraleedharan, Vishnu Vijayan, Abhaydev Kavalackal Prasad, Jaymin Vrajlal Sanchaniya
Riga Technical University, Latvia; Kaunas University of Technology, Lithuania

17:00 TF152 EFFECT OF BUILD ORIENTATION ANGLE ON MECHANICAL PROPERTIES AND FRACTURE BEHAVIOUR OF FDM 3D PRINTED PLA
Harikrishnan Krishnan Muraleedharan, Anandhu Aravind, Vishnu Vijayan, Jaymin Vrajlal Sanchaniya
Riga Technical University, Latvia; Kaunas University of Technology, Lithuania

17:20 TF154 FUNCTIONALLY GRADED INFILL FOR ENHANCED FLEXURAL PERFORMANCE IN 3D-PRINTED PLA
Vishnu Vijayan, Abhishek Kottapadikkal Pradeep, Abhaydev Kavalackal Prasad, Jaymin Vrajlal Sanchaniya
Riga Technical University, Latvia; Kaunas University of Technology, Lithuania

17:40 TF139 DEVELOPMENT OF DATA-SUPPORTED METHODOLOGY FOR CREATING DIGITAL CO_2 EMISSION CALCULATOR TO PROMOTE BEHAVIOURAL CHANGES IN PUBLIC TRANSPORT PASSENGERS
Adolfs Rucins, Dainis Viesturs, Aivars Aboltins, Ikars Melnalksnis, Pavel Semenchuk, Artem Slobolinskyi
Latvia University of Life Sciences and Technologies, Latvia; SIA "Xperience", Latvia

18:00 TF037 INVESTIGATION OF EFFECTS OF OIL ADDITIVE IN INTERNAL COMBUSTION ENGINE
Tomas Mickevicius, Rytis Zautra, Povilas Saulys
Kauno kolegija Higher Education Institution, Lithuania

18:20 TF140 A COMPARISON OF DIESEL ENGINE CAR PERFORMANCE USING H2O-CH TECHNOLOGY
Gints Birzietis, Vilnis Pirs, Dainis Berjoza
Latvia University of Life Sciences and Technologies, Latvia

19:00 *CONFERENCE DINNER*

Section 5: **ENERGY AND TRANSPORT**

5 J.Cakstes blvd., **Room 247**,
Join Zoom Meeting
https://zoom.us/j/98957584015?pwd=iJ3ta16wMwslxlVIX0I4IKr9J3qflH.1
Meeting ID: 989 5758 4015
Passcode: qd6Z45uyv

Chairman: Dr.sc.ing. **Dainis Berjoza**,
Latvia University of Life Sciences and Technologies, Latvia
Vice-chairman: Dr.sc.ing. **Jaroslaw Senko**
Warsaw University of Technology, Poland

11:00	TF216	PORTFOLIO-STRUCTURED SEGMENTATION AND FORECAST-GUIDED TARGETING OF DAYTIME-COMMERCIAL SMES ELECTRIC ENERGY USAGE PATTERNS **Aigars Laizans, Andris Backurs, Martins Tisenkopfs, Nikita Roldugins** *Latvia University of Life Sciences and Technologies, Latvia; SIA "TET", Latvia*
11:20	TF002	SELECTING LOCATION FOR SOLAR POWER PLANTS USING GIS TECHNOLOGIES: EXAMPLE OF SKIRSNEMUNE ELDERSHIP **Ruta Puziene** *Vilnius Gediminas Technical University, Lithuania*
11:40	TF008	ACTIVATED THERMAL DECOMPOSITION OF BIOMASS MIXTURES BY MICROWAVE PRETREATMENT OF COMPONENTS **Raimonds Valdmanis, Maija Zake** *Institute of Physics, University of Latvia, Latvia*
12:00	TF009	ASSESSMENT OF ELECTRICITY STORAGE OPTIONS FOR INTEGRATING RENEWABLE ENERGY IN RURAL KAZAKHSTAN **Vladislav Zavadskiy, Gita Revalde** *UNEP CCC TNA Kazakhstan National Energy Expert, Denmark; Riga Technical University, Latvia*
12:20	TF083	DYNAMICS OF ENERGY WOOD QUALITY DURING LONG-TERM STORAGE IN WOOD PILES IN LATVIA **Agris Zimelis, Santa Kaleja, Jordane Champion** *Latvian State Forest Research Institute "Silava", Latvia*
12:40	TF093	PRODUCTIVITY AND FUEL CONSUMPTION ANALYSIS OF PONSSE FORWARDERS BASED ON DATA ACCUMULATED UNDER PRODUCTION CONDITIONS **Aigars Strubergs, Nikolass Jaunzems, Agris Zimelis** *Latvia University of Life Sciences and Technologies, Latvia; Latvian State Forest Research Institute "Silava", Latvia*
13:00		*PHOTO, LUNCH*
14:20	TF163	DOUBLE ROTATION WIND TURBINE **Adrian PANDELE, Bogdan Ovidiu DURAN, Dragos Mihail PREDA, Gheorghe Voicu** *National University of Science and Technology Politehnica of Bucharest, Romania; ARROW SRL, Romania; ROLIX IMPEX SERIES SRL, Romania*
14:40	TF219	EXPERIMENTAL INVESTIGATION OF ACCELERATION PERFORMANCE OF LOW-POWER TWO-WHEELED ELECTRIC VEHICLES **Dainis Berjoza, Inara Jurgena, Janis Laceklis-Bertmanis** *Latvia University of Life Sciences and Technologies, Latvia*
15:00	TF225	HIERARCHICAL PHYSICS INFORMED GRAPH META REINFORCEMENT LEARNING FOR RESILIENT HYBRID ENERGY GRID OPTIMIZATION SYSTEMS **Ahmad Raza Khan, Muhammad Aamir Mahmood, Hafiz Ayyaz Ahmed** *Latvia University of Life Sciences and Technologies, Latvia; Virtual University of Pakistan, Pakistan; Islamia University of Bahawalpur, Pakistan*

15:20 TF018 STRATEGIES FOR OPTIMIZING SINGLE-CHANNEL MASS SERVICE SYSTEM WITH NON-STATIONARY INPUT FLOW
Oleg Zagurskiy, Liliya Savchenko, Oleksandr Domin, Maksym Odnorog
National University of Life and Environmental Sciences of Ukraine, Ukraine; Bila Tserkva National Agrarian University, Ukraine

15:40 TF019 IMPLEMENTATION OF DIGITAL TWIN OF LOGISTICS SUPPLY CHAIN BASED ON ANT-LOGISTICS FOR ASSESSING RESILIENCE TO PEAK LOADS
Liliya Savchenko, Oleg Zagurskiy, Viktoriia Opalko, Daria Lemishko
National University of Life and Environmental Sciences of Ukraine, Ukraine

16:00 *COFFEE BREAK*

16:20 TF030 ASSESSMENT OF TRANSPORT PROCESS QUALITY IN CONTEXT OF LOGISTICS DIGITALIZATION
Oleg Zagurskiy, Liliya Savchenko, Viktoriia Opalko, Sergii Bondariev
National University of Life and Environmental Sciences of Ukraine, Ukraine

16:40 TF052 IMPACT OF SIMPLIFIED ELECTRONIC CYLINDER DEACTIVATION ON SPECIFIC FUEL CONSUMPTION OF SPARK-IGNITION ENGINE
Vadims Serguns, Maris Gailis
Riga Technical University, Latvia; European University of Technology, European Union

17:00 TF077 ROAD SAFETY OF SENIORS IN LATVIA
Nadezda Kilupe, Gundars Zalcmanis, Juris Kreicbergs
Riga Technical University, Latvia; Road Traffic Safety Directorate, Latvia

17:20 TF088 INDICATOR-BASED METHOD FOR EVALUATING RURAL TRANSPORT ACCESSIBILITY
Inguna Jurgelane-Kaldava, Viktorija Tabakurska
Riga Technical University, Latvia

17:40 TF180 USING AI TOOLS TO MODEL PASSENGER FLOW IN PUBLIC TRANSPORT
Jaroslaw Senko, Mikolaj Szyca, Przemyslaw Rumianek, Maciej Jurewicz
Warsaw University of Technology, Poland; Warsaw University of Life Sciences, Poland

18:00 TF105 RESEARCH ON WEAR VARIATION OF BRAKE PADS AND DISCS OF ROMANIAN DACIA LOGAN CARS
Gheorghe Voicu, Cristina Apetrei, Paula Tudor, Gabriel-Alexandru Constantin, Gabriel Musuroi, Sorin-Dan Iordache, Marina-Teodora Dudau
National University of Science and Technology Politehnica of Bucharest, Romania; George Bibescu Technological High School Craiova, Romania; DMT Teodora Distribution SRL, Romania

18:20 TF092 SCENARIO-BASED INUNDATION RISK ANALYSIS OF POTENTIAL SHIP LOCK GATE FAILURE AT KAUNAS HYDROPOWER PLANT
Roberta Snapkauskiene, Egidijus Kasiulis, Linas Jurevicius
Vytautas Magnus University, Lithuania; Lietuvos InÅ¾inerijos Kolegija, Higher Education Institution, Lithuania

19:00 *CONFERENCE DINNER*

5 J.Cakstes blvd., **Room 215**,
Join Zoom Meeting
https://zoom.us/j/93248053281?pwd=5QXJvh0lov7jZiSYSmn54bb5dubaJY.1
Meeting ID: 932 4805 3281
Passcode: Y8tWfbsCk

Chairman: Dr.sc.ing. **Aivars Aboltins**,
Latvia University of Life Sciences and Technologies, Latvia
Vice-chairman: Dr.mat. **Svetlana Atslega**
Latvia University of Life Sciences and Technologies, Institute of Mathematics and Computer Science, University of Latvia, Latvia

11:00	TF221	AGRI-OMNI: MULTI-SCALE, VALIDATED COMPUTATIONAL FRAMEWORK FOR INTEGRATED AGRICULTURAL SYSTEMS ENGINEERING **Muhammad Aamir Mahmood** *Virtual University of Pakistan, Pakistan*
11:20	TF025	SIMULATIONS OF PIEZOELECTRIC ENERGY HARVESTING SYSTEM FOR DIESEL ENGINE **Jacek Caban, Jakub Skoczylas, Mateusz Waskowicz, Petr Jilek** *Lublin University of Technology, Poland; University of Pardubice, Czech Republic*
11:40	TF224	INTELLIGENT IUDGO FOR ADAPTIVE CITY-SCALE SIMULATION: INTEGRATING DYNAMIC CAPABILITIES, COMPLEX ADAPTIVE SYSTEMS AND INSTITUTIONAL THEORY **Abdul Waqas, Gatis Vitols, Muhammad Aamir Mahmood** *Latvia University of Life Sciences and Technologies, Latvia; Virtual University of Pakistan, Pakistan*
12:00	TF189	APPLICATION OF ARTIFICIAL INTELLIGENCE FOR DETECTION OF LAND PLOTS **Olena Glazunova, Ihor Bolbot, Volodymyr Kravchenko, Roman Rudenskyi, Oleksii Tsyganov** *National University of Life and Environmental Sciences of Ukraine, Ukraine*
12:20	TF099	MODELLING OF ENERGY WOOD FLOWS IN COUNTRIES WITH ABUNDANT FOREST RESOURCES AND EXPORT-ORIENTED FOREST INDUSTRIES **Igors Krasavcevs, Astra Auzina-Emsina** *Latvian State Forest Research Institute "Silava", Latvia; Riga Technical University, Latvia*
12:40	TF100	QUALITATIVE ANALYSIS AND CHAOTIC DYNAMICS OF NONLINEAR THREE-DIMENSIONAL SYSTEM **Anna Levicka, Inna Samuilik** *Riga Technical University, Latvia; Daugavpils University, Latvia*
13:00	📷🍽	*PHOTO, LUNCH*
14:20	TF125	MODELLING AGRICULTURAL COMPETITIVENESS SENSITIVITY TO FACTOR PRICE FLUCTUATIONS IN THE EU **Astra Auzina-Emsina, Alberts Auzins, Armands Veveris, Andris Lismanis** *Riga Technical University, Latvia; Institute of Agricultural Resources and Economics, Latvia; Edo Consult, Ltd., Latvia*
14:40	TF145	ON MODELLING AND SIMULATION OF BUOYANCY-DRIVEN BALLOONS WITH EVOLVING ENVELOPES **Uldis Strautins, Maksims Marinaki, Vanesa Vevere** *Institute of Mathematics and Computer Science, University of Latvia, Latvia*
15:00	TF151	DESIGN AND EXPERIMENTAL VALIDATION OF FLUTED ROLLER FOR FERTILISER METERING SYSTEM **Gregor Randla, Yevhen Ihnatiev, Tormi Lillerand, Juri Olt** *Estonian University of Life Sciences, Estonia; Dmytro Motornyi Tavria State Agrotechnological University, Ukraine*

15:20 TF169 MATHEMATICAL MODELING OF TEXTILE ABRASION IN MARTINDALE TEST
Rolands Breza, Uldis Strautins
University of Latvia, Latvia; Institute of Mathematics and Computer Science, University of Latvia, Latvia

15:40 TF228 INFLUENCE OF THERMO-CYCLIC LOADS AND ABRASIVE WEAR ON DURABILITY OF PDC CUTTERS IN HIGH-TEMPERATURE WELLS
Boranbay Ratov, Oleksandr Pashchenko, Arailym Zhanggirkhanova, Nursulu Tovbasarova
Kazakh National Research Technical University named after K.I. Satpayev, Kazakhstan; Dnipro University of Technology, Ukraine

16:00 *COFFEE BREAK*

16:20 TF176 ENERGY APPROACH TO STUDY ON DUFFING EQUATION
Svetlana Atslega, Marija Dobkevich, Felix Sadyrbaev
Latvia University of Life Sciences and Technologies, Latvia; Institute of Mathematics and Computer Science, University of Latvia, Latvia; Riga Technical University, Latvia; Daugavpils University, Latvia

16:40 TF179 MODELING STABILITY OF ZIEGLER COLUMN WITH CONSIDERATION OF DRY FRICTION
Sebastian Krakowiak, Radoslaw Nowak, Jaroslaw Senko
Warsaw University of Technology, Poland

17:00 TF043 PROBLEMS OF USING PLANAR FINITE ELEMENTS (THIN PLATE THEORY) AND THEIR ENGINEERING SOLUTION IN THE ANALYSIS OF REINFORCED CONCRETE SLABS
Taliat Azizov, Nataliia Sribniak, Liudmyla Tsyhanenko, Dmytro Volkov
Sumy National Agrarian University, Ukraine

17:20 TF045 STEEL STRUCTURAL SOLUTION FOR EFFICIENT ROOF SYSTEM
Nataliia Sribniak, Liudmyla Tsyhanenko, Hennadii Tsyhanenko, Valerii Lutskovskyi, Serhii Halushka, Oleksandr Dranyk
Sumy National Agrarian University, Ukraine

17:40 TF178 AERODYNAMIC ANALYSIS OF FORMULA STUDENT FRONT WING USING CFD
Abbas Abasov, Nikoloz Kapanadze, Svetlana Sokolova
Riga Technical University, Latvia; Politecnico di Torino, Italy

18:00 TF230 COMPARATIVE ANALYSIS OF RHEOLOGICAL MODELS FOR WATER-BASED DRILLING FLUIDS BASED ON VISCOMETRIC MEASUREMENTS
Samal Muratova, Volodymyr Khomenko, Yersain Jalgassov, Nursulu Tovbasarova
Kazakh National Research Technical University named after K.I. Satpayev, Kazakhstan; Dnipro University of Technology, Ukraine; Yessenov University, Kazakhstan

18:20 TF215 TRIBOLOGICAL ANALYSES OF COMPOSITE MULTILAYER COATINGS APPLIED FOR MOLDS IN TIRE PRODUCTION
Jan Novotny, Stefan Michna
J. E. Purkyne University in Usti nad Labem, Czech Republic

19:00 *CONFERENCE DINNER*

5 J.Cakstes blvd., **Room 212**,

TF004 OPTIMIZATION OF SHAPE STABILITY OF HEMP FOOTWEAR TEXTILES THROUGH CONSTRUCTIVE AND TECHNOLOGICAL SOLUTIONS
Halyna Boiko, Svitlana Yaheliuk, Nina Merezhko, Tetyana Holovenko
Kherson National Technical University, Ukraine; Lutsk National Technical University, Ukraine; State University of Trade and Economics, Ukraine

TF005 TIN MODELING OF CURRENT EARTHWORK VOLUMES DURING EXCAVATION PIT CONSTRUCTION FOR DEFENCE PROTECTIVE STRUCTURE
Ivan Openko, Olesia Huretska, Oleg Tsvyakh, Oleksandr Shevchenko, Ruslan Tykhenko, Nataliia Kolesnik, Viktoriia Paschenko
National University of Life and Environmental Sciences of Ukraine, Ukraine; Bogomolets National Medical University, Ukraine

TF006 COMPREHENSIVE SCIENTIFIC RESEARCH ON NEW VARIETIES OF INDUSTRIAL HEMP FOR MANUFACTURE OF HIGH-QUALITY INDUSTRIAL PRODUCTS
Tetyana Holovenko, Halyna Boiko, Oleksandr Shovkomyd, Vitalii Pavlenko, Yurii Berezovskyi
Lutsk National Technical University, Ukraine; Kherson National Technical University, Ukraine; Kyiv National University of Construction and Architecture, Ukraine

TF007 APPLICATION OF A SIMPLIFIED MODEL FOR ANALYSING AIRFLOW INTERACTION WITH BODIES OF VARIOUS SHAPES
Vitalijs Beresnevich, Janis Viba, Maris Eiduks, Martins Irbe, Edgars Kovals, Shravan Koundinya Vutukuru
Riga Technical University, Latvia; Vel Tech Rangarajan Dr Sagunthalla R and D Institute of Science and Technology, India

TF010 INTEGRATED MANAGEMENT OF CONSTRUCTION WASTE USING BIM-BASED VISUAL MODELING
Mohamed H. Shaban, Hassan Mohammad Ali
Homs University, Syria

TF012 SUBSTANTIATION OF STRIP TILLAGE AFTER CORN HARVESTING BASED ON POST-HARVEST RESIDUE CHARACTERISTICS
Serhii Yermakov, Mykola Korchak, Taras Hutsol, Oleksandr Hovorov, Serhiy Oleksiyko
Kamyanets-Podilskyi Instrument Applied College of Construction, Architecture and Design, Ukraine; Podillia State University, Ukraine; Odesa State Agrarian University, Ukraine; Khotyn Vocational College of Higher educational institution Podillia State University, Ukraine

TF013 MICROSTRUCTURAL ANALYSIS AND IMAGE-BASED EVALUATION OF TEMPERATURE-INDUCED TRANSFORMATIONS IN BIOMASS DURING TORREFACTION
Serhii Yermakov, Julia Galchynska, Pavlo Fedirko, Zoya Pustova, Oleksii Sikora
Podillia State University, Ukraine; Kamyanets-Podilskyi Instrument Applied College of Construction, Architecture and Design, Ukraine

TF014 UAV-BASED AUTOMATIC ASSESSMENT OF FLAX FIBER PRODUCTION POTENTIAL USING STEM LENGTH ESTIMATION AND MACHINE LEARNING
Olexandr Yaheliuk, Oleksii Prykhodko
Lutsk National Technical University, Ukraine

TF022 ASSESSMENT OF OCCUPATIONAL RISKS OF MECHANIZED PROCESSES FOR CHEMICAL PROTECTION OF PLANTS
Oleksandr Voinalovych, Vasyl Tymochko, Ivan Horodetskyy, Olena Visyn
National University of Life and Environmental Sciences of Ukraine, Ukraine; Stepan Gzhytskyi National University of Veterinary Medicine and Biotechnologies, Ukraine; Lutsk National Technical University, Ukraine

TF024 STUDY OF TANGENTIAL STICKINESS FORCE OF MIXTURES BASED ON ORGANIC SAPROPEL
Igor Tsiz, SerhiÑ– Khomych, Tetiana Tsyz, Valentyn Holii
Lutsk National Technical University, Ukraine

TF027 COMPREHENSIVE APPROACH TO POLYETHYLENE WASTE RECYCLING
Vladyslav Sokol, Bohdan Korinenko, Tetiana Tkachenko, Vitalii Yevdokymenko
V.P. Kukhar Institute of Bioorganic Chemistry and Petrochemistry of NAS of Ukraine, Ukraine

TF035 INFLUENCE OF HEAT CARRIER VELOCITY ON DRYING KINETICS OF CAPILLARY-POROUS MATERIALS UNDER COMBINED CONVECTIVE AND DIRECT ELECTRIC HEATING
Oleksandr Savoiskyi, Viktor Sirenko, Oleksandr Solarov, Viktor Kozin, Oleksandr Tatsenko
Sumy National Agrarian University, Ukraine

TF036 PREDICTING DURABILITY OF GREEN CONCRETE USING INTEGRATED MATHEMATICAL MODELING AND BUILDING INFORMATION MODELING (BIM) WITHIN SUSTAINABLE CONSTRUCTION FRAMEWORK
Moustafa Ali Wassouf
Syrian Virtual University, Syria

TF041 DESIGN OF CLAMPING DEVICE STRUCTURE AS PART OF SEMI-AUTOMATIC PROCESSES OF MOBILE WORKING MACHINE
Miroslav Blatnicky, Jan Dizo, Ivana Domanikova, Patrik Slusnak
University of Zilina, Slovakia

TF046 PATTERNS OF SOIL BULK DENSITY CHANGES RESULTING FROM REPEATED IMPACT OF MACHINE-AND-TRACTOR UNIT RUNNING GEAR
Victor Melnyk, Oleksandr Solarov, Oleksandr Savoiskyi, Oleksandr Tatsenko, Vitalii Kolodnenko
Sumy National Agrarian University, Ukraine

TF049 COMBINING SENSITIVITY ANALYSIS AND NON-PARAMETRIC STATISTICS TO ASSESS FARM-LEVEL GHG EMISSION DRIVERS
Katrina Muizniece, Inga Grinfelde, Jovita Pilecka-Ulcugaceva
Latvia University of Life Sciences and Technologies, Latvia; Lietuvos Inzinerijos Kolegija, Higher Education Institution, Lithuania

TF050 EVALUATING EFFICIENCY OF SMART ACOUSTIC SYSTEM FOR PROTECTION OF APPLE ORCHARDS AGAINST PESTS
Augustina Pruteanu, Alexandru Ionescu, Gheorghe Stroescu
National Institute of Research-Development for Machines and Installations Designed to Agriculture and Food Industry, Romania

TF051 IMPROVING EFFICIENCY OF GRAIN COMPONENT PREPARATION FOR CATTLE FEEDING
Vasyl Khmelovskyi, Victor Rebenko, Svitlana Potapova, Oleg Zabolotko
National University of Life and Environmental Sciences of Ukraine, Ukraine

TF060 MODELLING AND ANALYSIS OF ENERGY-EFFICIENT HEAT TRANSFER PROCESSES IN NON-LINEAR STRUCTURED FLUIDS OF GROUND HEAT EXCHANGERS IN HEAT PUMP HEATING SYSTEMS OF INDOOR SPORTS FACILITIES
Yurii Chovniuk, Anna Moskvitina, Serhii Rybachov, Petro Zinych
Kyiv National University of Construction and Architecture, Ukraine

TF061 RESEARCH INTO NON-STATIONARY HEAT TRANSFER PROCESSES FOR HYPERBOLIC TRANSFER MODELS IN GROUND HEAT EXCHANGERS INCREASING ENERGY EFFICIENCY OF HEAT PUMP HEATING SYSTEMS IN SPORTS BUILDINGS
Yurii Chovniuk, Anna Moskvitina, Serhii Rybachov, Petro Zinych
Kyiv National University of Construction and Architecture, Ukraine

TF064 DETERMINING EFFECT OF GROWING CONDITIONS ON HEMP SEED PROPERTIES
Viktor Sheichenko, Dmytro Petrachenko, Denys Sheichenko, Oleksandr Shapoval
Poltava State Agrarian University, Ukraine; Separate Structural Unit of the Hlukhiv Agrotechnical Vocational College of Sumy National Agrarian University, Ukraine

TF068 RADIATIVE WATER-COOLING SYSTEM UTILIZING DEEP SPACE RADIATION ENERGY AT NIGHT
Andriy Redko, Oleksandr Redko, Ihor Redko, Yurii Burda
Sumy National Agrarian University, Ukraine; O.M. Beketov National University of Urban Economy in Kharkiv, Ukraine; Ukrainian State University of Railway Transport, Ukraine

TF071 ASSESSMENT OF SUITABILITY OF FLAX PULP FOR PRODUCTION OF FOOD PACKAGING PAPER
Svitlana Yaheliuk, Vladislav Chasnikov, Vasylyna Shemet
Lutsk National Technical University, Ukraine

TF072 EXAMINATION OF REGIONAL CONNECTIONS BETWEEN SMART TRANSPORT SAFETY SYSTEMS
Jozsef Kaposzta, Tibor Csonka, Balazs Lorinc
Hungarian University of Agriculture and Life Sciences, Hungary

TF082 MODERNIZATION OF RAW MATERIAL FEEDING MECHANISM INTO IMPACT BRIQUETTE PRESS
Oleksandr Yeremenko, Oleksandr Voinalovych, Vasyl Khmelovskyi, Sergiy Subota, Tetyana Vozniuk, Tetyana Zubok
National University of Life and Environmental Sciences of Ukraine, Ukraine; Institute of Mechanics and Automatics of Agroindustrial Production of the National Academy of Agrarian Sciences of Ukraine, Ukraine

TF087 QUANTITATIVE FORECASTING APPROACH TO IDENTIFY WORKFORCE GAPS IN ENERGY SECTOR
Rimants Jelinsks, Una Libkovska
Ventspils University of Applied Sciences, Latvia

TF089 CHARACTERISTICS OF BIOCHAR FROM MISCANTHUS STEMS OBTAINED AT DIFFERENT PROCESS PARAMETERS
Nicoleta Vanghele, Valentin Vladut, Andreea Matache, Ana-Maria Tabarasu
National Institute of Research-Development for Machines and Installations Designed to Agriculture and Food Industry, Romania; Polytechnical University of Bucharest, Romania

TF094 LIDAR DECISION SUPPORT TOOL FOR FOREST DRAINAGE MAINTENANCE
Raitis Normunds Melniks, Janis Ivanovs, Andis Lazdins
Latvian State Forest Research Institute "Silava", Latvia

TF095 MODELLING DISSOLVED ORGANIC CARBON (DOC) EXPORT FOR GREENHOUSE GAS (GHG) ACCOUNTING IN DRAINED ORGANIC FOREST SOILS
Raitis Normunds Melniks, Arta Bardule, Andis Lazdins
Latvian State Forest Research Institute "Silava", Latvia

TF096 EFFECT OF DEEP FURROWING ON METHANE FLUXES IN NON-DRAINED PEATLAND FOREST CLEARCUTS
Dana Purvina, Arta Bardule, Zaiga Anna Zvaigzne, Andis Lazdins
Latvian State Forest Research Institute "Silava", Latvia

TF097 CASE STUDY ON GHG FLUX CONTRASTS BETWEEN NON-DRAINED AND DRAINED PEATLAND FORESTS BEFORE AND AFTER REGENERATIVE FELLING
Ilona Skranda, Aldis Butlers, Arta Bardule, Andis Lazdins
Latvian State Forest Research Institute "Silava", Latvia

TF098 COMPARISON OF GREENHOUSE GAS (GHG) EMISSIONS FROM FORWARDING RUTS IN CLEARCUTS IN ORGANIC AND MINERAL SOILS
Raitis Normunds Melniks, Zaiga Anna Zvaigzne, Arta Bardule, Martins Vanags Duka, Andis Lazdins
Latvian State Forest Research Institute "Silava", Latvia

TF102 EVALUATING SONOCHEMICAL POTENTIAL FOR PFAS MITIGATION IN DIFFUSE AGRICULTURAL SYSTEMS
Jana Grave, Inga Grinfelde, Jovita Pilecka-Ulcugaceva
Latvia University of Life Sciences and Technologies, Latvia; Lietuvos InÅ¾inerijos Kolegija, Higher Education Institution, Lithuania

TF123 ADAPTIVE MULTI-BAND LORA-BASED SYSTEM FOR DATA TRANSMISSION IN CIVIL DEFENCE MONITORING AND ALERTING
Rodions Saltanovs, Alexey Shevchenko, Janis Usanse
Riga Nordic University, Latvia; SIA "RS DYNAMICS", Latvia; SIA "Strive", Latvia

TF124 AI GOVERNANCE FOR SAFE RURAL AUTOMATION: GLOBAL SURVEY OF LITERACY, OVERSIGHT AND REGISTRATION PRACTICES
Ayoola Rilwan Lawal, Tarmo Koppel, Romans Putans
University of Latvia, Latvia; Tallinn University of Technology, Estonia

TF130 ROUTE-LEVEL TECHNO-ECONOMIC ASSESSMENT OF ALTERNATIVE FUELS FOR SHORT-SEA SHIPPING UNDER EU EMISSIONS TRADING SYSTEM
Georgi Hrenov, Merle Kuettim, Helery Tasane, Wolfgang Gerstlberger
Tallinn University of Technology, Estonia

TF132 PARTIAL POWER CONVERTERS IN MOBILE MODULAR ROBOT POWER SUPPLY SYSTEM
Rodions Saltanovs, Alexey Shevchenko
Riga Nordic University, Latvia; SIA "RS DYNAMICS", Latvia

TF136 THEORETICAL STUDY OF ENERGY-EFFICIENT STRAW DRYING BASED ON SENSIBLE HEAT RECOVERY FROM POST-PRESSED BRIQUETTES
Yuriy Semirnenko, Svetlana Semirnenko, Oleksandr Savoiskyi, Oleksandr Sarzhanov
Sumy National Agrarian University, Ukraine

TF137 JUSTIFICATION OF COMPONENT COMPOSITION OF SOLID COMPOSITE BIOFUEL BASED ON SEWAGE SLUDGE AND CEREAL STRAW
Viacheslav Bratishko, Vasyl Khmelovskyi, Victor Rebenko, Oksana Achkevych, Stanislav Kostiuk
National University of Life and Environmental Sciences of Ukraine, Ukraine

TF141 ENSURING AFFORDABLE AND CLEAN ENERGY: DRIVERS OF SUSTAINABLE DEVELOPMENT AND RESILIENCE WITHIN THE EUROPEAN UNION
Balazs Lorinc, Tibor Csonka, Jozsef Kaposzta
Hungarian University of Agriculture and Life Sciences, Hungary

TF143 ANALYSIS OF VENTILATION POSITIONING INFLUENCE ON COOLING EFFICIENCY OF PROTECTIVE CLOTHING
Sanjay-Rajni Vejanand, Alexander Janushevskis
Riga Technical University, Latvia

TF147 NUMERICAL STUDY AND ANALYSIS OF COMPOSITE STRUCTURES WITH GRADED FOAM
Andrejs Kovalovs, Pavel Akishin, Vanesa Dhalivala, Ugis Cabulis
Riga Technical University, Latvia; Latvian State Institute of Wood Chemistry, Latvia

TF149 IMPACT DAMAGE INFLUENCE ON VIBRATION CHARACTERISTICS OF WOVEN COMPOSITES
Pavel Akishin, Andrejs Kovalovs, Oleh Derkach
Riga Technical University, Latvia; G.S. Pisarenko Institute for Problems of Strength, National Academy of Sciences, Ukraine

TF161 LOCAL RIVER WATER BASIN GOVERNANCE MONITORING DEVELOPMENTS IN LATVIA: TOWARDS STAKEHOLDER'S CO-MANAGEMENT
Arturs Skute, Raimonds Ernsteins, Toms Bringulis
Daugavpils University, Latvia; University of Latvia, Latvia

TF181 METHODOLOGY FOR TESTING BIOLOGICAL CONTAMINATION OF CABIN FILTERS AT TEST STATION SIMULATING PASSENGER CAR VENTILATION
Agnieszka Jurkowska, Ewa Karwowska, Szymon Dowkontt, Jaroslaw Senko
Warsaw University of Technology, Poland

TF185 STUDY OF INFLUENCE OF FINGER WORKING ELEMENT CONFIGURATION ON PROCESS OF CAPTURING STEM MATERIAL
Oleksandr Yeremenko, Mykola Volokha, Mykola Tolstushko, Olena Turitsyna, Ievgen Antypov, Svitlana Tarasenko
National University of Life and Environmental Sciences of Ukraine, Ukraine; Igor Sikorsky Kyiv Polytechnic Institute, Ukraine; Lutsk National Technical University, Ukraine

TF188 IMPACT OF FRACTAL PARAMETERS OF POWDER-BED PACKING ON PART QUALITY AND PROCESS PERFORMANCE IN SLS PRINTING OF MECHANICAL ENGINEERING COMPONENTS
Serhii Pustiulha, Volodymyr Samchuk, Yuliia Bondarchuk, Mykola Tolstushko, Nataliya Tolstushko, Ihor Holovachuk
Lutsk National Technical University, Ukraine

TF191 INTEGRATED ENGINEERING-ECONOMIC APPROACH TO MODELING AIR LOGISTICS EFFICIENCY IN RURAL REGIONS
Igor Kryvovyazyuk, Serhii Smerichevskyi, Svitlana Korobka, Iryna Kaminska, Nataliya Tolstushko, Mykola Tolstushko
Lutsk National Technical University, Ukraine; State University Kyiv Aviation Institute, Ukraine; Stepan Gzhytskyi National University of Veterinary Medicine and Biotechnologies, Ukraine

TF194 INVESTIGATION OF HEAT AND MASS EXCHANGE PROCESSES OF HELIUM DRYER OPERATION BY ANALYTICAL METHOD AND USING CFD ANALYSIS IN SOLIDWORKS FLOW SIMULATION ENVIRONMENT
Serhiy Korobka, Mykola Tolstushko, Igor Stukalets, Viktor Sheichenko, Igor Kryvovyazyuk, Nataliya Tolstushko
Lviv National Environmental University, Ukraine; Lutsk National Technical University, Ukraine; Poltava State Agrarian University, Ukraine

TF196 ADAPTIVE CONTROL OF TECHNOLOGICAL MACHINE MODES TAKING INTO ACCOUNT CHARACTERISTICS OF RAW MATERIALS AND ENVIRONMENT
Viktor Sheichenko, Oleksii Hizzatullin, Mykola Tolstushko, Misha Shevchuk, Yurii Fedorus, Larysa Pylypiuk
Poltava State Agrarian University, Ukraine; Lutsk National Technical University, Ukraine; Uman National University of Horticulture, Ukraine

TF199 STUDY OF FLAT MOVEMENT OF FLATTENING ROLLERS ALONG HEMP STEMS
Viktor Sheichenko, Igor Dudnikov, Yuliia Skoriak, Mykola Tolstushko, Vitaliy Shevchuk, Larysa Pylypiuk
Poltava State Agrarian University, Ukraine; Lutsk National Technical University, Ukraine; Uman National University of Horticulture, Ukraine

TF205 INFLUENCE OF FRICTION IN JOINTS ON FORCE CHARACTERISTICS OF SCISSOR ROLLING BRIDGE JACK
Yurii Bulik, Vasyl Pavliuk, Mykola Tolstushko, Nataliya Tolstushko
Lutsk National Technical University, Ukraine

TF206 DETERMINATION OF AVERAGE DIAMETER AND TAPER OF FLAX STEM
Serhii Yukhymchuk, Svitlana Yukhymchuk, Mykola Tolstushko, Leonid Datsiuk, Victor Tarasiuk
Lutsk National Technical University, Ukraine

TF232 DEVELOPMENT TREND OF AGRICULTURAL DRONES BASED ON PATENT RESEARCH
Juri Olt, Olga Liivapuu, Yevhen Ihnatiev
Estonian University of Life Sciences, Estonia; Estonian Aviation Academy, Estonia; Dmytro Motornyi Tavria State Agrotechnological University, Ukraine

TF234 STUDY OF GRANULAR FERTILISER DOSING UNIFORMITY USING IMPROVED ROLLER DESIGNS BASED ON DEM MODELLING
Erik Sven Paertin, Olga Liivapuu, Yevhen Ihnatiev, Juri Olt
Estonian University of Life Sciences, Estonia; Estonian Aviation Academy, Estonia; Dmytro Motornyi Tavria State Agrotechnological University, Ukraine

Friday, 29 May

8^{00} – 8^{30} Gathering at the faculty **5 J. Cakste blvd. [S/F]**

8^{30} – 16^{30} Excursion

Jelgava Caramel Workshop [1]

During the excursion to the Jelgava Caramel Workshop, visitors will be able to learn about the caramel-making process and participate in making caramels themselves. The delicious caramels are made from natural and pure ingredients.

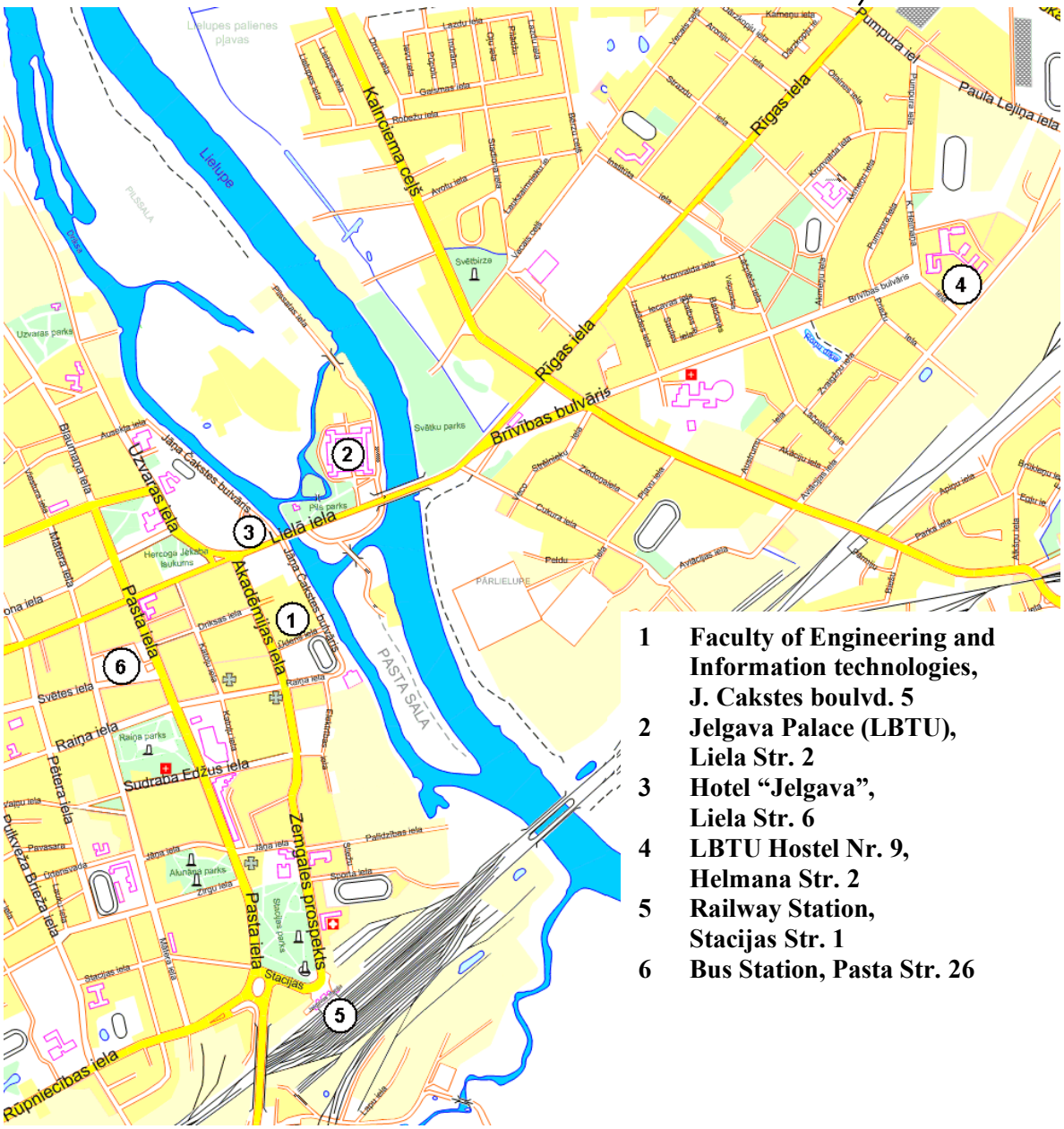
Laflora Energy Wind Farm [2]

The Laflora Energy Wind Farm will be able to generate approximately 5% of Latvia's required energy annually (around 350 GWh planned). Peat extraction in the Kaigu Bog will come to an end in the coming years, making it important to plan the future economic use of the area. The wind farm consists of 16 wind turbines with a total capacity of 108 MW. The height to the highest point of the blade reaches 266 m. Construction costs amount to EUR 185 million. The opening of the wind farm is planned for July 2026.

"Lāči" Bread [3]

During the excursion, we will learn about the bread-making process. At "Lāči", the dough is fermented in traditional wooden troughs, kneaded by hand, and each loaf is shaped by hand. The bread at "Lāči" is baked in a real wood-fired oven. The firewood is arranged in such a way that every loaf is evenly warmed and its crust lovingly baked to perfection.

To Riga



1 Faculty of Engineering and Information technologies, J. Cakstes boulvd. 5
2 Jelgava Palace (LBTU), Liela Str. 2
3 Hotel "Jelgava", Liela Str. 6
4 LBTU Hostel Nr. 9, Helmana Str. 2
5 Railway Station, Stacijas Str. 1
6 Bus Station, Pasta Str. 26

Address of the Conference Committee

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