

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



23rd International Scientific Conference

ENGINEERING FOR RURAL DEVELOPMENT

PRELIMINARY PROGRAMME



Jelgava, Latvia, May 22-24, 2024

Wednesday, 22 May

16⁰⁰ – 17⁰⁰ Registration of participants,
Faculty of Engineering and Information Technologies, LBTU,
5 J. Cakstes blvd., lobby

Thursday, 23 May

9⁰⁰ – 10⁰⁰ Registration of participants,
Faculty of Engineering and Information Technologies, LBTU,
5 J. Cakstes blvd., lobby

10⁰⁰ – 10¹⁵ Welcome speech
Gatis Vitols, *Faculty of Engineering and Information Technologies*, Dean
Aivars Aboltins, *Conference programme committee*, Chairman
5 J. Cakstes blvd., Room 238, to join using Zoom see Section 1 details

10²⁰ – 13⁰⁰ Work in sections

13⁰⁰ – 14²⁰ Photo, Lunch

14²⁰ – 16⁰⁰ Work in sections

16⁰⁰ – 16³⁰ Coffee break
5 J. Cakstes blvd., Room 212

16³⁰ – 18³⁰ Work in sections

19⁰⁰ 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, 24 May

8³⁰ – 18⁰⁰ Social tour



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

PROGRAMME COMMITTEE

Chairman:

Aivars Aboltins, Latvia University of Life Sciences and Technologies, Latvia

Members:

Valeriy Adamchuk, National Academy of Agrarian Science of Ukraine (NAASU), Ukraine
Mariusz Adamski, Bialystok University of Technology, Poland
Zhayyt Algazy, Kazakh National Research Technical University, Kazakhstan
Andres Annuk, Estonian University of Life Sciences, Estonia
Atilgan Atilgan, Suleyman Demirel University, Turkey
Marco Bietresato, University of Udine, Italy
Milan Brozek, Czech University of Life Sciences Prague, Czech Republic
Volodymyr Bulgakov, National University of Life and Environmental Sciences of Ukraine, Ukraine
Lorant Denes David, Eszterházy Károly University, Hungary
Jan Dizo, University of Zilina, Slovakia
Givi Gavardashvili, Georgian Technical University, Georgia
Marek Gaworski, Warsaw University of Life Science, Poland
Edwin Gevorkyan, University of Life Sciences in Lublin, Poland
Semjons Ivanovs, Latvia University of Life Sciences and Technologies, Latvia
Algirdas Jasinskis, Vytautas Magnus University, Lithuania
Jan Radoslaw Kaminski, Warsaw University of Life Science, Poland
Jozsef Kapozsta, Szent Istvan University, Hungary
Pavel Kic, Czech University of Life Sciences Prague, Czech Republic
Vitalijs Komasilovs, Latvia University of Life Sciences and Technologies, Latvia
Aigars Laizans, Latvia University of Life Sciences and Technologies, Latvia
Chou Li-Chen, Shantou University, China
Tomasz Lipinski, University of Warmia and Mazury in Olsztyn, Poland
Francesco Marinello, University of Padova, Italy
Agris Nikitenko, Riga Technical University, Latvia
Juri Olt, Estonian University of Life Sciences, Estonia
Vitālijs Osadčuks, Latvia University of Life Sciences and Technologies, Latvia
Andrea Pezzuolo, University of Padova, Italy
Simon Popescu, Transylvania University of Brasov, Romania
Stasys Slavinskas, Vytautas Magnus University, Lithuania
George Szrednicki, University of New South Wales, Australia
Aleksejs Zacepins, Latvia University of Life Sciences and Technologies, Latvia
Wanhao Zhang, University College London, United Kingdom
Yang Zhang, University of Sheffield, United Kingdom

ORGANISING COMMITTEE

Chairman:

Janis Palabinskis, Latvia University of Life Sciences and Technologies, Latvia

Members:

Aivars Āboltiņš, Dainis Berjoza, Baiba Briede, Ilmārs Dukulis, Ainārs Galiņš, Janis Kjakste, Vitālijs Osadčuks, Aldis Pecka, Mareks Šmits, Kaspars Vartukapteinis, Gatis Vītols, Natālija Vronska, Olafs Vronskis

Abstracted and indexed

Elsevier SCOPUS, Clarivate Analytics Web of Science, AGRIS, CAB Abstracts, CABI full text, EBSCO Academic Search Complete, EBSCO Central & Eastern European Academic Source, Agricola.



DOI for each paper



CrossRef.org Similarity Check



Conference homepage

ENGINEERING FOR RURAL DEVELOPMENT is available online at
<https://www.tf.lbtu.lv/conference/>

Organisations supporting conference

Latvia University of Life Sciences and Technologies
Faculty of Engineering and Information Technologies



Latvian Academy of Agricultural and
Forestry Sciences, Unit of Engineering
Sciences

<http://ilmza.lv/index.php/en/units/unit-of-engineering-sciences>

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



WEEDBOT



Weedbot - High precision laser weeding
technology

<https://weedbot.eu/>

Nordic Association of Agricultural Science
<https://nordicagriculture.eu/>



Section 1: AGRICULTURAL MACHINERY

5 J.Cakstes blvd., Room 238,

Join Zoom Meeting

<https://zoom.us/j/91330339528?pwd=M3Zkcng2eUJWb1RXWGRPQzFNWWpOQT09>

Meeting ID: 913 3033 9528

Passcode: 666qaNyXP

Chairman: Dr.sc.ing. **Ilmars Dukulis**,
Latvia University of Life Sciences and Technologies, Latvia

Vice-chairman: Dr.sc.ing. **Antanas Jostas**,
Vytautas Magnus University, Lithuania



- 10:20 TF021 IMPROVEMENT OF OCCUPATIONAL SAFETY AND HEALTH MANAGEMENT SYSTEM IN UKRAINE IN VIEW OF RELEVANT DECLARED INITIATIVES OF EUROPEAN UNION
Oleksandr Voinalovych, Oleg Hnatiuk, Vasyl Khmelovskyi, Mykhailo Motruch
National University of Life and Environmental Sciences of Ukraine, Ukraine; State service on labour issues, Ukraine
- 10:40 TF044 RESEARCH IN PROCESSES AND MACHINES FOR LOCAL STRIP APPLICATION OF MOISTURE-HOLDING ORGANIC FERTILIZERS
Volodymyr Didukh, Igor Tsiz, Vasyl Satsiuk, Roman Khlopetscyi
Lutsk National Technical University, Ukraine
- 11:00 TF049 INVESTIGATION ON ENVIRONMENTALLY FRIENDLY WHEAT HARVEST TECHNOLOGY
Egle Jotautiene, Antanas Juostas, Atilgan Atilgan
Vytautas Magnus University, Lithuania; Alanya Alaaddin Keykubat University, Turkey
- 11:20 TF057 STRENGTH ANALYSIS OF SUBSOILER TOOTH
Jacek Caban, Aleksander Nieoczym, Leszek Krzywonos
Lublin University of Technology, Poland
- 11:40 TF163 INFLUENCE OF DISC CULTIVATOR DESIGN ON SOIL PARTICLE DISPLACEMENT
Frantisek Horejs, Martin Cisler, Libor Matyas, Michal Strnad
Czech University of Life Sciences Prague, Czech Republic
- 12:00 TF165 INFLUENCE OF ORGANIC FERTILIZERS ON SOIL EROSION PARAMETERS IN MAIZE CROP
Martin Cisler, Frantisek Horejs, Michal Strnad, Libor Matyas
Czech University of Life Sciences Prague, Czech Republic
- 12:20 TF173 COMPARISON OF FUEL CONSUMPTION IN BROCCOLI PRODUCTION
Michal Strnad, Libor Matyas, Martin Cisler, Petr Novak
Czech University of Life Sciences Prague, Czech Republic
- 12:40 TF062 TIGHTNESS MONITORING CAMERA FOR CRITICAL PARTS OF RURAL TECHNOLOGICAL AND SCIENTIFIC EQUIPMENT
Daria Vakulenko, Tetiana Tkachenko, Viktor Mileikovskiy, Viktoriia Konovaliuk, Oleksandr Liubarets
Kyiv National University of Construction and Architecture, Ukraine
- 13:00 *PHOTO, LUNCH*
- 14:20 TF195 AGROENGINEERING STUDIES OF TILLAGE AND HARVESTING PARAMETERS IN SOYBEAN CULTIVATION
Ivan Rogovskii, Igor Sivak, Ruslan Shatrov, Oleksandr Nadtochiy
National University of Life and Environmental Sciences of Ukraine, Ukraine

- 14:40 TF093 PRECISION AIR SEEDER FOR HEMP - CONTROL SYSTEM SIMULATION
Waldemar Samociuk, Pawel Staczek
University of Life Sciences in Lublin, Poland; Lublin University of Technology, Poland
- 15:00 TF058 PRELIMINARY STUDY OF THE STARTING SYSTEM THROUGH THE ELECTRICAL PARAMETERS OF THE START-UP PROCESS OF THE DIESEL ENGINE
Jacek Caban, Jaroslaw Senko, Tomasz Slowik, Szymon Dowkontt
Lublin University of Technology, Poland; Warsaw University of Technology, Poland; University of Life Sciences in Lublin, Poland
- 15:20 TF025 METHODOLOGY FOR THE FORMATION OF THE COMPANY'S LOGISTICS SERVICE SYSTEM
Oleg Zagurskiy, Liliya Savchenko, Alona Ohienko, Svetlana Zagurska, Oleksandr Domin
National University of Life and Environmental Sciences of Ukraine, Ukraine; National Aviation University, Ukraine; Kyiv Regional In-Service Teacher Training Institute, Ukraine
- 15:40 TF099 INVESTIGATION OF WIDE SPAN VEHICLE TECHNOLOGICAL PART MOVEMENT STABILITY
Volodymyr Bulgakov, Aivars Aboltins, Valerii Adamchuk, Volodymyr Kuvachov, Simone Pascuzzi, Volodymyr Kyurchev, Adolfs Rucins, Victor Nesvidomin
National University of Life and Environmental Sciences of Ukraine, Ukraine; Latvia University of Life Sciences and Technologies, Latvia; Institute of Mechanics and Automation of Agricultural Production of the National Academy of Agrarian Sciences of Ukraine, Ukraine; Dmytro Motornyi Tavria State Agrotechnological University, Ukraine; University of Bari Aldo Moro, Italy
- 16:00 COFFEE BREAK
- 16:30 TF098 INVESTIGATION OF WIDE SPAN VEHICLE TECHNOLOGICAL PART SUSPENSION SYSTEM COMPACTING IMPACT ON SOIL
Volodymyr Bulgakov, Aivars Aboltins, Valerii Adamchuk, Volodymyr Kuvachov, Volodymyr Kyurchev, Adolfs Rucins, Oleh Chernysh
National University of Life and Environmental Sciences of Ukraine, Ukraine; Latvia University of Life Sciences and Technologies, Latvia; Institute of Mechanics and Automation of Agricultural Production of the National Academy of Agrarian Sciences of Ukraine, Ukraine; Dmytro Motornyi Tavria State Agrotechnological University, Ukraine
- 16:50 TF135 INVESTIGATION AND SUBSTANTIATION OF MISCANTHUS RHIZOME DIGGER PIN GRID DESIGN PARAMETERS
Valerii Adamchuk, Viktor Prysyazhnyi, Volodymyr Bulgakov, Hryhorij Kaletnik, Viktor Mazur, Oleksandra Trokhaniak, Aivars Aboltins, Adolfs Rucins, Ivan Holovach
Institute of Mechanics and Automation of Agricultural Production of the National Academy of Agrarian Sciences of Ukraine, Ukraine; National University of Life and Environmental Sciences of Ukraine, Ukraine; Vinnytsia National Agrarian University, Ukraine; Latvia University of Life Sciences and Technologies, Latvia
- 17:10 TF132 MATHEMATICAL MODEL OF MOVEMENT AND CLEANING BEETROOTS FROM SOIL LUMPS WITH SPIRAL SEPARATOR
Volodymyr Bulgakov, Ivan Holovach, Volodymyr Martyniuk, Oleksandra Trokhaniak, Aivars Aboltins, Adolfs Rucins, Yevhen Ihnatiev
National University of Life and Environmental Sciences of Ukraine, Ukraine; Latvia University of Life Sciences and Technologies, Latvia; Dmytro Motornyi Tavria State Agrotechnological University, Ukraine
- 17:30 TF137 THEORETICAL STUDY OF FLEXIBLE BLADE MOVEMENT IN CLEANING CARROT ROOT CROP HEADS WITHOUT EXTRACTING THEM FROM SOIL
Volodymyr Bulgakov, Ivan Holovach, Igor Savchenko, Petro Rykhlivskiy, Myroslav Budzanivskiy, Aivars Aboltins, Adolfs Rucins, Juri Olt, Yevhen Ihnatiev
National University of Life and Environmental Sciences of Ukraine, Ukraine; Institute of Mechanics and Automation of Agricultural Production of the National Academy of Agrarian 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
- 17:50 TF136 INVESTIGATION OF CONTACT STRESSES IN ENGAGEMENT ELEMENTS OF SCREW CONVEYOR SAFETY CLUTCH
Volodymyr Bulgakov, Oleksandra Trokhaniak, Aivars Aboltins, Adolfs Rucins, Mykola Tkachenko, Arlindo Almeida, Volodymyr Kuvachov
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; Polytechnic Institute of Bragança (ESAB/IPB), Mountain Research Center (CIMO), Portugal; Dmytro Motornyi Tavria State Agrotechnological University, Ukraine

Section 2: MATERIAL SCIENCE AND GHG EMISSION

5 J.Cakstes blvd., Room 312,

Join Zoom Meeting

<https://zoom.us/j/97677102613?pwd=UE9WdTlkZEt6RINEQnoxcjBrM1VXdz09>

Meeting ID: 976 7710 2613

Passcode: Zh4ps9xis

Chairman: Dr.sc.ing. **Aivars Kakitis**,
Latvia University of Life Sciences and Technologies, Latvia

Vice-chairman: Dr.sc.ing. **Egle Jotautiene**,
Vytautas Magnus University, Lithuania



- 10:20 TF023 MAIZE-LEGUME INTERCROPPING EFFECT ON SOIL PROPERTIES AND CO₂ CONCENTRATION
Kestutis Romaneckas, Ausra Sinkeviciene, Austeja Svereikaite, Rasa Kimbirauskiene, Kristijonas Vitulskis, Jovita Balandaite, Ugnius Ginelevicius
Vytautas Magnus University, Lithuania
- 10:40 TF061 INFLUENCE OF K₂ZRF₆ AND SiO₂ ON REFINING ABILITY OF FLUX FOR MANUFACTURING BIMETALLIC CASTINGS
Yevhenii Aftandiliants, Svyatoslav Gnyloskurenko, Helena Meniailo, Valerii Khrychikov, Viktor Lomakin
National University of Life and Environmental Sciences of Ukraine, Ukraine; Physico-technological Institute of Metals and Alloys, Ukraine; Ukrainian State University of Science and Technologies, Ukraine; Central Ukrainian National Technical University, Ukraine
- 11:00 TF038 STUDY ON PROPERTIES OF ZIRCONIA REINFORCED REFRACTORY MATRIX COMPOSITES
Miroslaw Rucki, Edvin Hevorkian, Boranbay Ratov, Volodymyr Mechnik
Casimir Pulaski Radom University, Poland; University of Life Sciences in Lublin, Poland; Kazakh National Technical University named after K.I. Satpayev, Kazakhstan; V.Bakul Institute for Superhard Materials NAS, Ukraine
- 11:20 TF145 IDENTIFICATION PROCEDURE OF FUNCTIONALLY GRADED MATERIAL IN SANDWICH BEAM
Andrejs Kovalovs, Evgeny Barkanov, Oleksiy Vodka
Riga Technical University, Latvia; NTU Kharkov Polytechnic Institute, Ukraine
- 11:40 TF166 WHEAT STRAW AND SEAWEED FURCELLARIA LUMBRICALIS - DERIVED CARRAGEENAN BIOCOMPOSITE CHARACTERISTICS: CASE STUDY
Uldis Zaimis, Sintija Ozolina, Andrejs Kukuskins
Liepaja University, Latvia
- 12:00 TF171 DEVELOPMENT AND APPLICATION OF BIODEGRADABLE WHEAT STRAW AND CARRAGEENAN COMPOSITE IN AGRICULTURE
Sintija Ozolina, Uldis Zaimis, Andrejs Kukuskins
Liepaja University, Latvia
- 12:20 TF179 HYBRID FIBER COMPOSITE MATERIAL WITH OSA MECHANICAL LOAD-BEARING CAPACITY AFTER THERMAL HEATING
Karunamoorthy Rengasamy Kannathan, Stanley Jacob Maria Michaelraj, Eirik Gjerlow, Iveta Novakova, Mindaugas Vaisnoras
Riga Technical University, Latvia; UiT the Arctic University of Norway, Norway; Lithuanian Energy Institute, Lithuania

- 12:40 TF155 METHANE (CH₄) AND NITROUS OXIDE (N₂O) EMISSIONS FROM SURFACE OF DECIDUOUS TREE STEMS AND SOIL IN FORESTS WITH DRAINED AND NATURALLY WET ORGANIC SOILS
Iloņa Skranda, Dana Purvina, Arta Bardule, Guna Petaja
Latvian State Forest Research Institute "Silava", Latvia
- 13:00 *PHOTO, LUNCH*
- 14:20 TF129 EXPERIMENTAL STUDY OF LARVAE CAGE AREA IMPACT ON OUTPUT IN GREEN LACEWING INDUSTRIAL-SCALE REARING
Vladislav Yaroshevsky, Igor Bespalov, Vasyli Khodorchuk, Vitalii Barkar, Volodymyr Bulgakov, Adolfs Rucins, Aivars Aboltins
Engineering and Technology Institute "Biotechnica" of NAAS, Ukraine; National University of Life and Environmental Sciences of Ukraine, Ukraine; Latvia University of Life Sciences and Technologies, Latvia
- 14:40 TF087 IMPROVEMENT OF REACTION TO FIRE PERFORMANCE OF BIRCH PLYWOOD BY VENEER SOAKING METHOD
Edgars Buksans, Ilze Kalnina
Forest and Wood Products Research and Development Institute, Latvia; AS "Latvijas finieris", Latvia
- 15:00 TF029 MECHANICAL PROPERTIES OF EPOXY AND CONCRETE BASED COMPOSITE MATERIALS REINFORCED WITH OIL SHALE ASH
Ilgar Jafarli, Arturs Macanovskis, Eirik Gjerlow, Mindaugas Vaisnoras
Riga Technical University, Latvia; UiT the Arctic University of Norway, Norway; Lithuanian Energy Institute, Lithuania
- 15:20 TF034 SIMULATION RESEARCH ON PROPERTIES OF SPHERICAL MANURE GRANULES
Vaidas Bivainis, Egle Jotautiene, Ramunas Mieldazys, Grazvydas Juodisius
Vytautas Magnus University, Lithuania
- 15:40 TF056 EFFECTS OF VERMICOMPOST APPLICATION ON GROWTH AND YIELD OF HOT PEPPER (*CAPSICUM FRUTESCENS*)
Atilgan Atilgan, Firat Arslan, Burak Saltuk, Joanna Kociecka, Egle Jotautiene, Antanas Juostas
Alanya Alaaddin Keykubat University, Turkey; Poznan University of Life Sciences, Poland; Vytautas Magnus University, Lithuania
- 16:00 *COFFEE BREAK*
- 16:30 TF182 INFLUENCE OF INDUSTRY ON AIR POLLUTION IN JELGAVA CITY
Inga Grinfelde, Kristaps Siltumens, Vilda Grybauskiene, Maris Bertins, Jovita Pilecka-Ulcugaceva
Latvia University of Life Sciences and Technologies, Latvia; University of Latvia, Latvia; Vytautas Magnus University, Lithuania
- 16:50 TF190 USE OF SHREDDED TEXTILE WASTE AS MATERIAL FOR SOUND ABSORPTION
Kristaps Siltumens, Inga Grinfelde, Ginters Znots, Rudolfs Golubovs, Raitis Brencis
Latvia University of Life Sciences and Technologies, Latvia; University of Latvia, Latvia; RISEBA University of Applied Sciences, Latvia; Riga Technical University, Latvia

Section 3: MODELLING AND SIMULATION

5 J.Cakstes blvd., Room 215

Join Zoom Meeting

<https://zoom.us/j/93521869195?pwd=bHc3RjRMa0NRVmpOdjZ0TmJWNTJmZz09>

Meeting ID: 935 2186 9195

Passcode: 3G7SdiMFC

Chairman: Dr.sc.ing. **Aivars Aboltins**,
Latvia University of Life Sciences and Technologies, Latvia

Vice-chairman: Mg.sc.ing. **Olesja Grigorjeva**
Riga Technical University, Latvia



- 10:20 TF030 SYSTEM MODEL OF E-SERVICES FOR SUBURBAN AREA MANAGEMENT
Volodymyr Nazarenko, Victor Smolii, Borys Onyshchenko, Maksym Misiura
National University of Life and Environmental Sciences of Ukraine, Ukraine
- 10:40 TF040 EVALUATING INFLUENCE OF CFD MESH ON FLOW CHARACTERISTICS OF PNEUMATIC BRAKE VALVE DIFFERENTIAL SECTION
Marcin Kisiel, Dariusz Szpica
Bialystok University of Technology, Poland
- 11:00 TF059 MODELLING OF REINFORCED CONCRETE SLAB TO ACCOUNT FOR CRACKING
Taliat Azizov, Nataliia Sribniak, Liudmyla Tsyhanenko, Dmytro Volkov
Pavlo Tychyna Uman State Pedagogical University, Ukraine; Sumy National Agrarian University, Ukraine
- 11:20 TF060 STRENGTH ANALYSIS OF FEMORAL IMPLANT OF BONE ANCHORED PROSTHESIS
Kithalawalana Jayathilaka, Oskars Gainutdinovs, Svetlana Sokolova, Peteris Studers
Riga Technical University, Latvia; SIA "Tehniskā Ortopēdija", Latvia; Riga Stradins University, Latvia
- 11:40 TF117 NON-STANDARD METHOD FOR SOLVING HYPERBOLIC HEAT EQUATIONS
Tabita Treilande, Ilmars Iltins
Riga Technical University, Latvia
- 12:00 TF146 MATHEMATICAL MODELLING OF CHEMICAL REACTION WITH PROPANE
Harijs Kalis, Ilmars Kangro
Institute of Mathematics and Computer Science, University of Latvia, Latvia; Rezekne Academy of Technologies, Latvia
- 12:20 TF189 ON SIMULATION OF SOFT MATTER AND FLOW INTERACTIONS IN BIOMASS PROCESSING APPLICATIONS
Uldis Strautins, Maksims Marinaki
Institute of Mathematics and Computer Science, University of Latvia, Latvia
- 12:40 TF212 IMPROVED AND VECTORISED MATLAB-BASED ALGORITHMS FOR SERIAL AND PARALLEL IMPLEMENTATION OF FINITE ELEMENT METHOD IN LINEAR ELASTICITY
Baurice Sylvain Sadjiep Tchuigwa, Jan Krmela, Jan Pokorny, Vladimira Krmelova
University of Pardubice, Czech Republic; Alexander Dubcek University of Trencin, Slovakia
- 13:00 *PHOTO, LUNCH*
- 14:20 TF047 INVESTIGATION IN CRITICAL RADIUS OF THERMAL INSULATION FOR VERTICAL PIPES
Daria Vakulenko, Viktor Mileikovskiy, Tetiana Tkachenko, Oleksandr Liubarets
Kyiv National University of Construction and Architecture, Ukraine
- 14:40 TF192 ANALYSIS OF CHANGES IN BRAIN MODEL PARAMETERS AFTER STROKE
Olesja Grigorjeva, Zigurds Markovics
Riga Technical University, Latvia

- 15:00 TF083 MODELLING OF HAZARDOUS OPERATING MODES OF RUBBER-CORD COUPLING IN FEM ENVIRONMENT
Dmitrijs Gorbacovs, Pavels Gavrilovs, Janis Eiduks
Riga Technical University, Latvia
- 15:20 TF109 NEUTRON SHIELDING MATERIAL CONTAINING BASALT-BORON FIBERS AND OSA FOR SPENT NUCLEAR FUEL CONTAINER, NUMERICAL MODELLING
Iryna Romanenko, Iveta Novakova, Riho Motlep, Volodymyr Gulik, Andrejs Krasnikovs, Mindaugas Vaisnoras
Riga Technical University, Latvia; UiT the Arctic University of Norway, Norway; University of Tartu, Estonia; Lithuanian Energy Institute, Lithuania
- 15:40 TF175 DEVELOPMENT AND TESTING OF AUTOMATED CONTROL SYSTEM FOR SEA BUCKTHORN BERRY HARVESTING ROBOT "AGROBOT"
Andrejs Stupans, Pavels Maksimkins, Armands Senfelds, Leonids Ribickis
Riga Technical University, Latvia
- 16:00 COFFEE BREAK
- 16:30 TF233 REDUCING EXTERNALITIES OF LAST MILE DELIVERY THROUGH TAXATION
Maris Juruss, Baiba Smite-Roke, Irina Nesterenko
Riga Technical University, Latvia
- 16:50 TF063 SENSOR NETWORK APPLICATION FOR STUDYING MODAL PROPERTIES OF TURBOMACHINE
Aleksej Mironov, Pavel Doronkin, Vitalijs Kuzmickis, Aleksejs Safonovs
D un D Centrs, Latvia; SIA "D un D centrs", Latvia; Riga Technical University, Latvia
- 17:10 TF172 SOLUTIONS FOR REDUCING (MINIMIZING) FIREFIGHTING TRUCK REPAIRS IN EU COUNTRIES AND IN LATVIA IN PARTICULAR
Viktorija Politika, Jelena Pundure, Marina Jarvis
State Fire and Rescue Service, Latvia; Riga Technical University, Latvia; Tallinn University of Technology, Estonia

Section 4: RENEWABLE AND CONVENTIONAL ENERGY

5 J.Cakstes blvd., Room 314

Join Zoom Meeting

<https://zoom.us/j/93760670423?pwd=dGVKdDR4ckVZZXpFamZHSDNoZFFlQT09>

Meeting ID: 937 6067 0423

Passcode: kmF3ape89

Chairman: Dr.oec. **Inara Jurgena**,
Latvia University of Life Sciences and Technologies, Latvia

Vice-chairman: Dr.sc.ing. **Algirdas Jasinskas**,
Vytautas Magnus University, Lithuania



- 10:20 TF009 THE EFFECT OF FOREST STAND THINNING ON TREE BIOMASS CARBON STOCK
Karlis Bickovskis, Valters Samariks, Aris Jansons
Latvian State Forest Research Institute "Silava", Latvia; Latvian State Forest Research Institute "Silava", Latvia; Latvian State Forest Research Institute "Silava", Latvia
- 10:40 TF118 ANALYSIS OF SOSNOWSKY'S HOGWEED (*HERACLEUM SOSNOWSKYT*) AND GIANT KNOTWEED (*FALLOPIA SACHALINENSIS*) FOR PRODUCTION OF PRESSED BIOFUEL
Gvidas Gramauskas, Algirdas Jasinskas, Egidijus Lemanas, Aivars Aboltins
Vytautas Magnus University, Lithuania; Lithuanian Energy Institute, Lithuania; Latvia University of Life Sciences and Technologies, Latvia
- 11:00 TF067 EXPERIMENTAL STUDY ON INFLUENCE OF BIOFUELS ON INJECTION CHARACTERISTICS OF DIESEL ENGINE COMMON RAIL SYSTEM
Stasys Slavinskas, Paulius Bendziunas
Vytautas Magnus University, Lithuania
- 11:20 TF026 EFFECT OF STEAM INJECTION ON PERFORMANCE AND EMISSIONS OF AGRICULTURAL DIESEL ENGINE
Karlis Amatnieks, Aivars Birkavs
Latvia University of Life Sciences and Technologies, Latvia
- 11:40 TF039 KINETIC STUDY ON MICROWAVE PRE-TREATED BIOMASS COMBUSTION, HEAT PRODUCTION AND EMISSION COMPOSITION
Raimonds Valdmanis, Maija Zake
Institute of Physics, University of Latvia, Latvia
- 12:00 TF071 ENERGY CONVERSION OF BIOMASS FROM FAST-GROWING PLANTS FOR HEAT PRODUCTION
Savelii Kukharets, Algirdas Jasinskas, Olena Sukmaniuk, Mykolai Kukharets
Vytautas Magnus University, Lithuania; Polissia National University, Ukraine
- 12:20 TF103 POTENTIAL OF RENEWABLE ENERGY COMMUNITIES IN LATVIA'S ENERGY SECTOR TRANSFORMATION
Ivars Kudrenickis, Gaidis Klavs, Janis Rekis
Institute of Physical Energetics, Latvia
- 12:40 TF104 BIOGAS POTENTIAL FROM BIODIESEL PRODUCTION RESIDUES
Vilis Dubrovskis, Imants Plume
Latvia University of Life Sciences and Technologies, Latvia
- 13:00 *PHOTO, LUNCH*
- 14:20 TF105 BIOMETHANE PRODUCTION FROM PELLETS OF HORSE MANURE AND LITTER MIXTURE
Vilis Dubrovskis, Imants Plume
Latvia University of Life Sciences and Technologies, Latvia

- 14:40 TF128 PRODUCTION OF BIOGAS FROM GRASS AT VARIOUS PRE-TREATMENT AND ANAEROBIC FERMENTATION TEMPERATURES UNDER INFLUENCE OF MAGNETIC FIELD
Imants Plume, Eduards Azits, Vilis Dubrovskis, Lauris Plume
Latvia University of Life Sciences and Technologies, Latvia
- 15:00 TF228 EFFICIENCY OF DECENTRALIZED HEAT SUPPLY BASED ON TRADITIONAL HEAT GENERATORS WITH STEAM-COMPRESSION CONVERSION OF ENERGY FROM LOW-TEMPERATURE SOURCES
Vitaly Petrash, Vitaly Baryshev, Leonid Shevchenko, Elina Geraskina
Odessa State Academy of Civil Engineering and Architecture, Ukraine
- 15:20 TF110 POSSIBILITIES AND BENEFITS OF USING PHOTOVOLTAIC POWER PLANTS WITH MICROINVERTERS IN RURAL AREAS
Vytautas Adomavicius, Gintvile Simkoniene, Artem Dedenok
Kaunas University of Technology, Lithuania; Lithuanian Maritime Academy, Lithuania
- 15:40 TF111 USEFULNESS OF SMALL-SCALE STAND-ALONE HYBRID SOLAR-WIND POWER PLANTS IN RURAL AREAS
Vytautas Adomavicius, Gintvile Simkoniene, Artem Dedenok
Kaunas University of Technology, Lithuania; Lithuanian Maritime Academy, Lithuania
- 16:00 COFFEE BREAK
- 16:30 TF035 CHANGES IN ELECTRIC CAR ENERGY CONSUMPTION DEPENDING ON MASS
Dainis Berjoza, Inara Jurgena, Jiri Masek
Latvia University of Life Sciences and Technologies, Latvia; Czech University of Life Sciences Prague, Czech Republic
- 16:50 TF121 IMPACT OF ASH OBTAINED AFTER MULTI-CROP PELLET BURNING ON SPRING BARLEY FERTILIZATION
Algirdas Jasinskas, Rita Petlickaite, Marius Praspaliauskas, Kestutis Romaneckas, Ausra Sinkeviciene
Vytautas Magnus University, Lithuania; Lithuanian Energy Institute, Lithuania
- 17:10 TF183 UPCOMING WATER DEFICIT IN CENTRAL ASIA RURAL REGIONS AND PERSPECTIVES OF GREEN HYDROGEN PRODUCTION
Vladislav Zavadskiy, Gita Revalde
Almaty University of Power Engineering and Telecommunication, Kazakhstan; Riga Technical University, Latvia
- 17:30 TF202 SUN-POWERED WHEELS: PV CHARGERS FOR SHARED E-SCOOTERS TO MITIGATE URBAN CO₂ EMISSIONS
Aivars Rubenis, Leslie R. Adrian, Martins Garkevics
Latvia University of Life Sciences and Technologies, Latvia; Riga Technical University, Latvia; SIA "Lesla Latvia", Latvia; SIA "Sustainable Mobility Technologies", Latvia
- 17:50 TF207 DEFINITION OF NEW TECHNICAL-ECONOMIC PERFORMANCE INDICATORS TO BETTER MONITOR THE PRODUCTION EFFICIENCY OF WINERIES
Marco Bietresato, Gellio Ciotti, Alessandro Zironi, Roberto Zironi, Rino Gubiani
Universita degli Studi di Udine, Italy

Section 5: ENGINEERING ECONOMICS AND ENGINEERING EDUCATION

5 J.Cakstes blvd., Room 336

Join Zoom Meeting

<https://zoom.us/j/93233349965?pwd=Nk9Sb2x4TGVBVRnBwNStwRm84M1VKQT09>

Meeting ID: 932 3334 9965

Passcode: dfaTw4H23

Chairman: Dr.paed. **Natalija Vronska**,
Latvia University of Life Sciences and Technologies, Latvia

Vice-chairman: Dr.paed. **Baiba Briede**,
Latvia University of Life Sciences and Technologies, Latvia



- 10:20 TF122 COMPETENCE DEVELOPMENT OF LABOUR PROTECTION SPECIALISTS IN CIVIL PROTECTION STUDIES
Dace Brizga, Olga Miezite, Kristine Andrejeva, Linards Sisenis
Latvia University of Life Sciences and Technologies, Latvia
- 10:40 TF073 ENGINEERING STUDENT PERCEPTIONS OF AI TECHNOLOGY IMPLEMENTATION IN ESP
Tatjana Sinkus, Inese Ozola
Latvia University of Life Sciences and Technologies, Latvia
- 11:00 TF011 USE OF INNOVATIVE DIGITAL EDUCATION TECHNOLOGIES IN HIGHER SCHOOL DURING DISTANCE LEARNING
Inna Savytska, Oksana Bulgakova, Lesya Zbaravska, Iryna Mushenyk, Adolfs Rucins
National University of Life and Environmental Sciences of Ukraine, Ukraine; Podillia State University, Ukraine; Latvia University of Life Sciences and Technologies, Latvia
- 11:20 TF012 PROFESSIONALLY ORIENTED LABORATORY PRACTICUM IN PHYSICS FOR ENGINEERING STUDENTS
Inna Savytska, Oksana Bulgakova, Lesya Zbaravska, Mykhailo Torchuk, Adolfs Rucins
National University of Life and Environmental Sciences of Ukraine, Ukraine; Podillia State University, Ukraine; Latvia University of Life Sciences and Technologies, Latvia
- 11:40 TF014 PHYSICAL TASKS AND THEIR FUNCTIONS IN TRAINING FUTURE SPECIALISTS IN AGRICULTURAL AND TECHNICAL INDUSTRY
Oksana Bulgakova, Inna Savytska, Lesya Zbaravska, Adolfs Rucins
National University of Life and Environmental Sciences of Ukraine, Ukraine; Podillia State University, Ukraine; Latvia University of Life Sciences and Technologies, Latvia
- 12:00 TF013 IMPLEMENTATION OF PROFESSIONAL ORIENTATION OF THEORETICAL TRAINING IN PHYSICS FOR STUDENTS OF ENGINEERING AND PEDAGOGICAL SPECIALTIES
Inna Savytska, Oksana Bulgakova, Lesya Zbaravska, Adolfs Rucins, Mykhailo Torchuk, Olena Podobied
National University of Life and Environmental Sciences of Ukraine, Ukraine; Podillia State University, Ukraine; Latvia University of Life Sciences and Technologies, Latvia; Dragomanov Ukrainian State University, Ukraine
- 12:20 TF043 FORMATION OF SELF-EDUCATIONAL COMPETENCE OF FUTURE ENGINEERS AS CONTEMPORARY PEDAGOGICAL PROBLEM
Oksana Bulgakova, Inna Savytska, Lesya Zbaravska, Ilmars Dukulis, Adolfs Rucins
National University of Life and Environmental Sciences of Ukraine, Ukraine; Podillia State University, Ukraine; Latvia University of Life Sciences and Technologies, Latvia

- 12:40 TF042 FORMATION OF PROFESSIONAL COMPETENCE OF FUTURE AGRICULTURAL ENGINEERING SPECIALISTS STUDYING DISCIPLINE "MAINTENANCE OF MACHINERY AND EQUIPMENT"
Oksana Bulgakova, Inna Savytska, Lesya Zbaravska, Ilmars Dukulis, Mykhailo Torchuk, Adolfs Rucins, Oksana Zakhutska
National University of Life and Environmental Sciences of Ukraine, Ukraine; Podillia State University, Ukraine; Latvia University of Life Sciences and Technologies, Latvia
- 13:00 *PHOTO, LUNCH*
- 14:20 TF168 ON HOMEWORK ROLE IN MATHEMATICS TEACHING AT RIGA TECHNICAL UNIVERSITY
Natalja Budkina, Gerda Dubkevicha, Aija Pola
Riga Technical University, Latvia
- 14:40 TF216 AI-BASED MATHEMATICS LEARNING PLATFORMS IN UNDERGRADUATE ENGINEERING STUDIES: ANALYSES OF USER EXPERIENCES
Anna Vintere, Elena Safiulina, Olga Panova
Latvia University of Life Sciences and Technologies, Latvia; TTK University of Applied Sciences, Estonia; Estonian University of Life Sciences, Estonia
- 15:00 TF160 DIAGNOSTICS OF COMPETITIVE POTENTIAL OF AGRICULTURAL ENTERPRISES IN UKRAINE DURING WAR
Oleksandr Nykytiuk, Olesia Lynovytska, Innola Novytkova, Andrii Dinets
Kyiv Agrarian University, National Academy of Agrarian Sciences of Ukraine, Ukraine
- 15:20 TF017 EFFECTIVE PROJECT MANAGEMENT PRACTICES IN CONSTRUCTION INDUSTRY: QUANTITATIVE STUDY
Rashmi Jaymin-Sanchaniya, Dany Thomson, Antra Kundzina, Ineta Geipele
Riga Technical University, Latvia
- 15:40 TF148 ENERGY EFFICIENCY IMPROVEMENT SUPPORT PROGRAMMES FOR PRIVATE BUILDINGS IN LATVIA
Gunita Mazure
Latvia University of Life Sciences and Technologies, Latvia
- 16:00 *COFFEE BREAK*
- 16:30 TF198 ENERGY EFFICIENT RENOVATION OF MULTI-APARTMENT BUILDINGS: MANAGEMENT, ECONOMIC AND ENGINEERING ASPECTS
Ivars Kudrenickis, Raimonds Ernsteins, Liga Biezina, Rasa Ikstena
Institute of Physical Energetics, Latvia; University of Latvia, Latvia
- 16:50 TF101 PROFITABILITY OF SUGAR BEET PRODUCTION IN 2022/2023 CAMPAIGN ON EXAMPLE OF LUBLIN VOIVODESHIP
Zbigniew Krzysiak
University of Life Sciences in Lublin, Poland
- 17:10 TF076 CASE STUDY OF GRAIN EXPORT ROUTS CHANGES FOR UKRAINE IN 2022-2023
Valerijs Skribans, Natalia Maslii, Maryna Demianchuk
Riga Technical University, Latvia; Odesa I.I.Mechnikov National University, Ukraine; University of Warsaw, Poland
- 17:30 TF045 ABOUT IRR AND NEW INVESTMENT PRIORITY INDEX
Manfred Sneps-Sneppe, Dmitry Smirnov
Ventspils University of Applied Sciences, Latvia
- 17:50 TF080 TRANSPORT SECTOR TECHNOLOGICAL SHIFTS AND INTERSECTORAL LINKAGES IN LATVIA
Astra Auzina-Emsina, Inguna Jurgelane-Kaldava, Agnese Batenko, Linda Kelle
Riga Technical University, Latvia

Friday, 24 May

- 8³⁰ – 9⁰⁰ Gathering at the faculty 5 J. Čakste blvd.
- 9³⁰ – 11⁰⁰ Excursion ZELT Smiltsērķšķi (Sea buckthorn garden), return via Jelgava
- 13⁰⁰ – 14⁰⁰ Excursion to the Ķegums Energy Museum
- 14¹⁵ – 15¹⁵ Lunch in Lielvārde café “Panna”
- 15⁴⁰ Skrīveru sweets
- 16³⁰ Going to Jelgava

The largest *Sea buckthorn* garden of single variety sea buckthorn in Latvia. ZELT garden of sea buckthorn is located in Jelgava Region, Platone Parish, on the bank of the River Platone. This year the garden area has already reached 36 hectares. ZELT sea buckthorn that are grown in Latvia are unique – products made from it are rich in vitamins, amino acids and antioxidants and are perfect for health, for strengthening immunity, for nutrition, as well as for beauty care and maintaining healthy skin.



<https://www.zelt.bio/en>



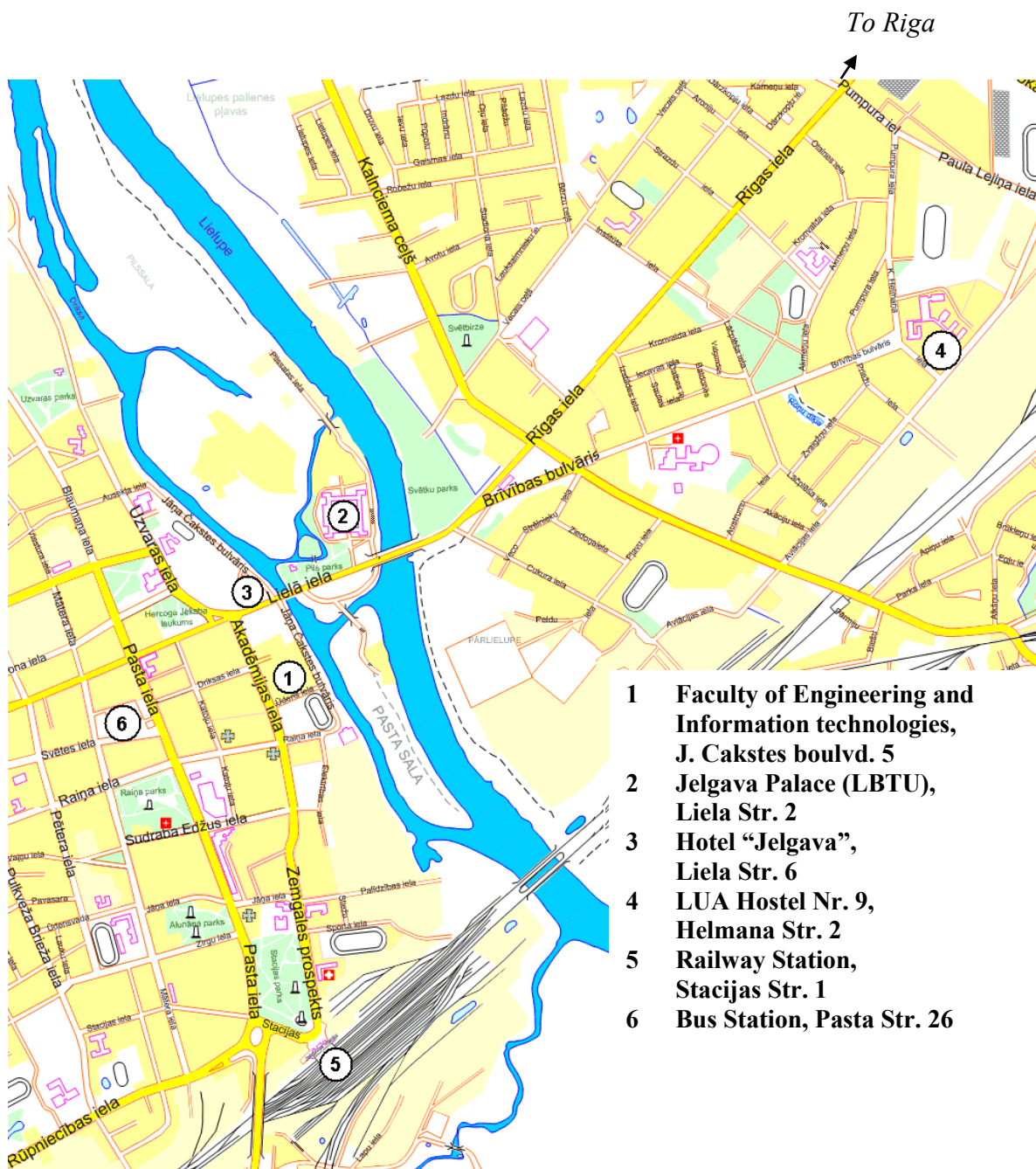
The exhibition of the museum tells the story of Latvia’s energy history – from the first electric light bulb to the launch of Ķegums HPP and the growth of Latvenergo Group into one of the largest energy supply companies in the Baltic states. The open-air exposition of the museum displays unique industrial heritage – evidence of the history of technology – turbines of Ķegums and Pļaviņas HPPs.

<https://latvenergo.lv/en/energetikas-muzejs/ekspozicija-keguma>

The excursion to the company "Skrīveru saldumi" will give the opportunity to taste the famous Gotiņa products. The company's motto is: Combine the healthy with the sweet.



<https://skriveru.com/en/index>



Address of the Conference Committee

**Faculty of Engineering and Information Technologies
 Latvia University of Life Sciences and Technologies
 5 J. Cakstes blvd., Jelgava, LV-3001, Latvia**

Aivars Aboltins

Phone: + 371 29134846

E-mail: aivars.aboltins@lbtu.lv, janis.palabinskis@lbtu.lv

<http://www.tf.lbtu.lv/conference/>