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# 14<sup>th</sup> International Scientific Practical Conference “Environment. Technology. Resources”

Rezekne Academy of Technologies  
Faculty of Engineering  
Rezekne, Latvia  
June 15 – 16, 2023

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## Programme



Rēzekne, 2023

# CONFERENCE PROGRAMME 15.06.2023.

Time	Programme			
	Atbrīvošanas aleja 115 K-4, Faculty of Engineering			
8.00-9.00	Registration, coffee Atbrīvošanas aleja 115 K-4, Faculty of Engineering, 1 <sup>st</sup> floor hall			
9.00- 9.20	CONFERENCE OPENING Room 105			
9.20-10.25	PLENARY SESSION Room 105			
10.30 – 13.30	SECTIONS SESSION			
	Section 1	Remote Section 2	Remote Section 3	Section 4
	Room 132	Room 308	ITC K-3, Room 201	ITC K-3, Room 203
12.25-13.30	Coffee break, 1 <sup>st</sup> floor hall			
13.30-16.00	SECTIONS SESSION			
	Section 1	Remote Section 2	Remote Section 3	Section 4
	Room 132	Room 308	ITC K-3, Room 201	ITC K-3, Room 203
16.30	Departure to dinner, Atbrīvošanas aleja 115 K-4, Faculty of Engineering			
17.00-18.30	VISIT in Mežvidi Agricultural and Technology Park (Mežvidu lauksaimniecības un tehnoloģiju parks)			
19.00-22.30	DINNER in Malnava College (Latvijas Biozinātņu un tehnoloģiju universitātes aģentūra "Latvijas Biozinātņu un tehnoloģiju universitātes Malnavas Koledža")			
23.00	RETURN TO RĒZEKNE			

# CONFERENCE PROGRAMME 16.06.2023.

Time	PROGRAMME				
	Atbrīvošanas aleja 115 K-4, Faculty of Engineering				
9.30-10.30	Coffee, 1 <sup>st</sup> floor hall				
10.30 – 13.30	Remote section 1	Section 2	Remote section 3	Poster Section 4	Project workshop
	ITC K-3, Room 201	Room 132	Room 308	1 <sup>st</sup> floor hall	Room 112
12.25-13.30	Coffee break, 1 <sup>st</sup> floor hall				
13.30-16.00	Remote section 1	Section 2	Remote section 3	Poster Section 4	Project workshop
	ITC K-3, Room 201	Room 132	Room 308	1 <sup>st</sup> floor hall	Room 112
16.00	VISIT TO PRODUCTION COMPANY				

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# CONFERENCE PROGRAMME 15.06.2023.

## CONFERENCE OPENING

### WELCOME SPEECHES

9.00- 9.20

**Prof., Dr.oec. Iveta Mietule**, Rector of Rezekne Academy of Technologies

**Prof., Dr.sc.ing. Edmunds Teirumnieks**, Scientific Committee Chairman

**Prof., Dr.habil.geol. Gotfrīds Noviks**, Organizing Committee Chairman

**Prof., Dr.sc.ing. Artis Teilāns**, Dean of Faculty of Engineering, Scientific Committee Co-Chairman

## PLENARY SESSION

9.20-9.40

**Sergejs Kodors, Marks Sondors, Gunārs Lācis, Edgars Rubauskis, Ilmārs Apeināns, Imants Zarembo**  
RAPID PROTOTYPING OF PEAR DETECTION NEURAL NETWORK WITH YOLO ARCHITECTURE IN PHOTOGRAPHS

9.40-10.00

**Karunamoorthy Rengasamy Kannasthan, Andrejs Krasnikovs, Arturs Macanovskis**  
INGREDIENTS DEGRADATION IN STEEL FIBER REINFORCED CONCRETE AFTER THERMAL LOADING

10.00-10.20

**Luis Ochoa Siguencia, Zofia Gródek-Szostak, Agata Niemczyk, Anna Szeląg-Sikora, Esther Pagan Castano**  
LIFELONG LEARNING FOR TALENT MANAGEMENT AND PROFESSIONAL DEVELOPMENT OF EMPLOYEES

15.06.2023.

Section 1

**ENVIRONMENT AND RESOURCES**

*Chairmen: Dr.habil.geol. Gotfrīds Noviks and Dr.sc.ing. Andris Skromulis,  
room 132*

10.30-10.45	<b>Aldis Bulis, Oskars Onževs</b> MEASUREMENT OF SUSTAINABLE DEVELOPMENT IN LATVIA
10.50-11.05	<b>Ziedonis Miklašēvičs, Dmitrijs Leontjevs, Jānis Mājenieks</b> THE IMPACT OF THE WEATHER CONDITIONS ON THE QUALITY OF BIRCH VENEER LOGS DURING WINTER HARVESTING
11.10-11.25	<b>Rosita Zvirgzdina, Dace Sakena, Iveta Linina</b> PRODUCT MARKET EXPANSION STRATEGY FOR BUSINESS DEVELOPMENT OF THE COMPANIES OPERATING IN THE FIELD OF PREMISES CLEANING
11.30-11.45	<b>Gotfrīds Noviks</b> PHYSICAL PROPERTIES OF GEOPOLYMERS MADE FROM MINERAL WASTE
11.50-12.05	<b>Nikolay Todorov Dolchinkov, Mihael Petkov Pavlov</b> INFLUENCE OF METEOROLOGICAL ELEMENTS IN ACCIDENTS IN ENTERPRISES WITH RADIOACTIVE ELEMENTS OR DANGEROUS CHEMICAL SUBSTANCES IN BULGARIA
12.10-12.25	<b>Nikolay Todorov Dolchinkov, Bonka Encheva Karaivanova-Dolchinkova</b> IMPACT OF TYPES OF ELECTROMAGNETIC RADIATION ON LIVING NATURE
12.25-13.30	<i>Coffee-break</i>
13.30-13.45	<b>Aleksandrs Adamovičs, Liena Poiša</b> THE EFFECT OF AN INNOVATIVE FERTILIZER OF DIGESTATE AND WOOD ASH MIXTURES ON WINTER GARLIC PRODUCTIVITY
13.50-14.05	<b>Aleksandrs Adamovičs, Liena Poiša, Lydiia Antypova</b> THE EFFICIENCY OF USING ALTERNATIVE FERTILIZERS IN POTATO PLANTATIONS
14.10-14.25	<b>Iveta Linina, Gita Jansevica</b> PLACE MARKETING IN PLANNING SUSTAINABLE DEVELOPMENT
14.30-14.45	<b>Lienīte Litavniece, Sergejs Kodors, Juta Dekšne, Gunārs Lācis, Imants Zarembo, Antons Pacejs</b> RISK ANALYSIS FOR APPLE ORCHARD SURVEY AND MONITORING USING UAV
14.50-15.05	<b>Veneranda Stramkale, Inga Morozova, Larisa Černova, Aldis Stramkalis</b> INDUSTRIAL HEMP VARIETIES PRODUCTIVITY POTENTIAL IN THE LATVIAN CLIMATIC CONDITIONS

15.06.2023.

Section 2

**ENVIRONMENT AND RESOURCES**

*Chairmen: Dr.sc.ing. Sergejs Kodors and Dr.sc.ing. Imants Zarembo,  
remote section, room 308*

*zoom link: <https://us06web.zoom.us/j/82653494354?pwd=ZfVibXRScVJCY3VsU2pid1dVbjV1Zz09>*

10.30-10.45	<b>Galina Chipriyanova, Miglena Marinova</b> OPPORTUNITIES AND CHALLENGES IN MODELING AN ENVIRONMENTAL MANAGEMENT SYSTEM
10.50-11.05	<b>Tadeusz Chrzan</b> PROTECTING THE ENVIRONMENT AROUND POLISH QUARRIES FROM HARMFUL SEISMIC VIBRATIONS CAUSED BY ROCK BLASTING
11.10-11.25	<b>Volodymyr Ivanyshyn, Serhii Yermakov, Oksana Bialkowska, Anatolii Rud, Mykola Vusatyi</b> THE DISTRIBUTION OF CASH EXPENSES FOR THE CREATION OF BIOENERGY WILLOW PLANTATIONS IN UKRAINE
11.30-11.45	<b>Janis Kramens, Edgars Vīgants, Sai Pavan Kanukuntla, Dmitri Goljandin, Jelizaveta Glušņova</b> STUDY OF THE APPLICATION OF PELLETS FROM TEXTILE MATERIAL WASTE AND BIOMASS MIXTURE IN INDUSTRIAL AND RESIDENTIAL HEATING SYSTEMS
11.50-12.05	<b>Irina Maksymova, Iveta Mietule, Volodymyr Kulishov</b> DIGITAL SOLUTIONS FOR A CLIMATE NEUTRAL ECONOMY: INTERNATIONAL FRAMEWORK OF ECO-DIGITAL PROJECTS
12.10-12.25	<b>Julija Melnikova, Inga Dailidienė, Simona Graigaliūnienė, Eglė Stonkė</b> PREREQUISITES FOR THE CREATION OF THE "FROM FARM TO SCHOOL" MODEL IN THE KLAIPEDA REGION: THE STUDY OF TARGET GROUPS' EXPECTATIONS AND PERCEPTIONS
12.25-13.30	<i>Coffee-break</i>
13.30-13.45	<b>Anna Mežaka, Inese Irbe, Dace Stepanova</b> ASSESSMENT OF RARE EPIPHYTIC LIVERWORT TRANSPLANTATION METHOD IN POPULUS TREMULA FOREST
13.50-14.05	<b>Krum Petrov, Evgeny Tongov</b> MECHANICAL SYSTEM FOR WIRE ARC ADDITIVE MANUFACTURING
14.10-14.25	<b>Velga Vevere, Inga Shina</b> THE FACTORS OF GREEN MARKETING AFFECTING CONSUMER PURCHASE INTENTION IN LATVIA
14.30-14.45	<b>Imants Zarembo, Sergejs Kodors, Ilmārs Apeināns, Gunārs Lācis, Daina Feldmane, Edgars Rubauskis</b> DIGITAL TWIN: ORCHARD MANAGEMENT USING UAV
14.50-15.05	<b>Ilze Busa, Didzis Rutitis</b> EMPLOYER REPUTATION BUILDING – A MANAGERIAL CHALLENGE IN HR MARKETING

15.06.2023.

Section 3

**INFORMATION TECHNOLOGIES**

*Chairmen: Dr.sc.ing. Pēteris Grabusts and Ph.D. student Ilmārs Apeināns  
remote section, ITC K-3, room 201*

*zoom link: <https://us06web.zoom.us/j/87066584336?pwd=VnUwa1NvSGd0VTJrbE5vSENYQTNLQT09>*

10.30-10.45	<b>Ivelina Balabanova, Teodora Zhorova, Georgi Georgiev</b> INTERNET TRAFFIC ZONE IDENTIFICATION BY BACKPROPAGATION AND PROBABILISTIC NEURAL NETWORKS
10.50-11.05	<b>Anna Borisova, Karīna Rudus, Ilona Pavlovska, Žanna Martinšone, Inese Mārtiņšone</b> MULTIPLE PATH PARTICLE DOSIMETRY MODEL CONCEPT AND ITS APPLICATION TO DETERMINE RESPIRATORY TRACT HAZARDS IN THE 3D PRINTING
11.10-11.25	<b>Galina Chipriyanova, Radosveta Krasteva-Hristova</b> TECHNOLOGICAL ASPECTS OF ACCOUNTING AUTOMATION SYSTEM AS A DECISION SUPPORT SYSTEM
11.30-11.45	<b>Didzis Gavars, Agris Auce, Ēriks Tauckels, Agnese Miķelšone, Anna Inese Tutane</b> ACCUMULATED LABORATORY DATA IN B12 VITAMIN BLOOD LEVEL TIME DEPENDENCY STUDIES IN PATIENTS WITH MYELOMA, LYMPHOCYTIC LEUKEMIA AND MYELOBLASTIC LEUKEMIA IN LATVIA
11.50-12.05	<b>Zofia Gródek-Szostak, Luis Ochoa Siguencia, Agata Niemczyk, Anna Szelaġ-Sikora</b> FROM INDUSTRY 4.0 PARADIGM TOWARDS INDUSTRY 5.0
12.10-12.25	<b>Kaloyan Kolev, Yordan Shterev</b> SOME WI-FI ACCESS POINTS IN THE CITY OF SOFIA
12.25-13.30	<i>Coffee-break</i>
13.30-13.45	<b>Santa Lemsā</b> READINESS OF LATVIA'S ORGANIZATIONS FOR ADVANCED ANALYTICS
13.50-14.05	<b>Oleg Uzhga-Rebrov, Peter Grabusts</b> SUBJECTIVE PROBABILITIES ELICITATION AND COMBINATION IN RISK ASSESSMENTS PROBLEMS
14.10-14.25	<b>Oleg Uzhga-Rebrov, Galina Kuleshova</b> PROPERTY INSURANCE DECISION-MAKING ON THE BASIS OF UTILITY FUNCTIONS
<b>EDUCATION IN ENGINEERING SCIENCES</b>	
14.30-14.45	<b>Renata Kondratavičienē, Inga Bertašienē</b> ORGANIZATION OF STUDENT-ORIENTED PEDAGOGICAL STUDIES: ANALYSIS OF STUDENTS LEARNING EXPERIENCES

15.06.2023.

Section 4

**INFORMATION TECHNOLOGIES**

*Chairmen: Dr.sc.ing. Artis Teilāns  
ITC K-3, room 203*

10.30-10.45	<b>Ansis Ataols Bērziņš</b> INVASION OF INFORMATION SYSTEMS AS A DANGER FOR HUMAN RIGHTS
10.50-11.05	<b>Peter Grabusts, Oleg Uzhga-Rebrov</b> SIMULATED ANNEALING METHOD IN THE CLASSIC BOLTZMANN MACHINES
11.10-11.25	<b>Harijs Kalis, Ilmārs Kangro</b> THE HEAT TRANSFER AND MAGNETOHYDRODYNAMICS PROBLEM WITH HEAT SOURCE IN HALF INFINITE 1-D DOMAIN
11.30-11.45	<b>Rohit, Peter Grabusts, Artis Teilans, Atis Kapenieks</b> AUTOMATION OF FEEDBACK ANALYSIS IN ASYNCHRONOUS E-LEARNING
11.50-12.05	<b>Roberts Volkovičs</b> ANOMALY DETECTION - REVIEW OF METHODS, TOOLS AND ALGORITHMS
12.25-13.30	<i>Coffee-break</i>
<b>EDUCATION IN ENGINEERING SCIENCES</b>	
13.30-13.45	<b>Eduard Shevtshenko, Rene Maas, Tatjana Karaulova, Iveta Dembovska, Anna Truver</b> DIGSM 4.0 CURRICULUM LIFECYCLE BASED ON COMPONENT ORGANISED LEARNING METHOD



# CONFERENCE PROGRAMME 16.06.2023.

16.06.2023.

Section 1

## EDUCATION IN ENGINEERING SCIENCES

Chairmen: *Dr.sc.ing. Edmunds Teirumnieks and Dr.sc.ing. Lyubomir Lazov,*  
*remote section, ITC K-3, room 201*

zoom link: <https://us06web.zoom.us/j/83679577481?pwd=aFNNK2tReXoySzhHb0FoVEF5NEICUT09>

10.30-10.45	<b>Bonka Encheva Karaivanova-Dolchinkova</b> NEED AND EXPECTATIONS FOR LEARNING IN A STEM ENVIRONMENT
10.50-11.05	<b>Renata Kondratavičienė</b> USING COMMUNICATION AND COLLABORATION TOOLS IN VIRTUAL LEARNING ENVIRONMENTS MOODLE FOR MATHEMATICS IN PRIMARY SCHOOL
11.10-11.25	<b>Oleksandr Malykhin, Nataliia Aristova, Tetyana Opaliuk</b> GLOBAL COMPETENCE DEVELOPMENT AMONG COMPUTER ENGINEERING AND INFORMATION TECHNOLOGY UNDERGRADUATES IN THE ENGLISH LANGUAGE CLASSROOM
11.30-11.45	<b>Oleksandr Malykhin, Nataliia Aristova, Tetyana Opaliuk</b> DIDACTIC POTENTIAL OF HUMANITIES IN DEVELOPING TRANSFORMATIVE COMPETENCIES AMONG COMPUTER ENGINEERING AND INFORMATION TECHNOLOGY UNDERGRADUATES
11.50-12.05	<b>Oleksandr Malykhin, Nataliia Aristova, Susanna Melikova</b> DEVELOPING COMPUTER ENGINEERING AND INFORMATION TECHNOLOGY UNDERGRADUATES' LEARNER AUTONOMY: INDIVIDUALISED INSTRUCTION IN ENGLISH CLASSROOM
12.10-12.25	<b>Julija Melnikova, Aleksandra Batuchina, Andreas Ahrens, Jelena Zascerinska</b> TEACHERS' DATA LITERACY SKILLS FOR PEDAGOGICAL DECISION MAKING: NEEDS ANALYSIS IN LITHUANIA AND GERMANY
12.25-13.30	<i>Coffee-break</i>
13.30-13.45	<b>Serhii Yermakov, Liliia Tkach, Pavlo Potapskyi, Serhiy Oleksiyko, Alexander Olenyuk</b> ARCHITECTURE AND CONSTRUCTION STUDENTS' PERCEPTION OF "TECHNICAL DRAWING" AND "DESCRIPTIVE GEOMETRY" DISCIPLINE CONTENT
13.50-14.05	<b>Karin Robam, Tony Hand, Veiko Karu</b> WHY T-SHAPED ENGINEERS IN THE MINING SECTOR ARE VITAL FOR PROGRESS

## LASER TECHNOLOGIES

*Chairmen: Dr.sc.ing. Edmunds Teirumnieks and Dr.sc.ing. Lyubomir Lazov,  
remote section, ITC K-3, room 201*

zoom link: <https://us06web.zoom.us/j/83679577481?pwd=aFNNK2tReXoySzhHb0FoVEF5NElCUT09>

<b>14.10-14.25</b>	<b>Kevins Bulavskis, Emil Yankov, Lyubomir Lazov, Antons Pacejs</b> RESEARCHING THE PROCESS OF LASER STRUCTURING OF THE SURFACE OF ALUMINUM
<b>14.30-14.45</b>	<b>Veselin Hristov, Lyubomir Lazov, Nikolay Angelov, Emil Yankov</b> INFLUENCE OF BASIC PARAMETERS OF THE LASER MARKING PROCESS ON STAINLESS STEEL SAMPLES
<b>14.50-15.05</b>	<b>Lyubomir Lazov, Nikolay Padarev, Milko Yovchev, Lyubomir Linkov</b> THE CHANGE OF CONTRAST IS INVESTIGATION OF 75 STEEL SAMPLES LASER MARKED WITH DIFFERENT MODES
<b>15.10-15.25</b>	<b>Petar Tsvyatkov, Emil Yankov, Lyubomir Lazov, Edmunds Teirumnieks, Karlis Pīgožnis</b> INVESTIGATION OF SURFACE ROUGHNESS OF CARBON STEEL MACHINED PARTS AFTER NANOSECOND FIBER LASER MARKING
<b>15.30-15.45</b>	<b>Petar Tsvyatkov, Emil Yankov, Lyubomir Lazov, Edmunds Teirumnieks, Erika Teirumnieka</b> COLOR MARKING OF STAINLESS STEEL AND TITANIUM WITH THE LASER OXIDATION METHOD
<b>15.50-16.05</b>	<b>Petar Tsvyatkov, Emil Yankov, Lyubomir Lazov, Edmunds Teirumnieks, Karlis Pīgožnis</b> INVESTIGATION OF THE INFLUENCE OF TECHNOLOGICAL PARAMETERS OF LASER MARKING ON THE DEGREE OF CONTRAST
<b>16.10-16.25</b>	<b>Borislav Georgiev, Tsanko Karadzhov</b> COMPARATIVE ANALYSIS OF GEOMETRIC DEVIATIONS IN CONTACT MEASURING INSTRUMENTS FOR CONTROL AND LASER CONTACTLESS SCANNING

16.06.2023.

Section 2

**ENGINEERING SCIENCES AND PRODUCTION TECHNOLOGIES**

*Chairmen: Dr.sc.ing. Nikolay Todorov Dolchinkov and Ph.D. student Imants Adijāns,  
room 132*

**LASER TECHNOLOGIES**

10.30-10.45	<b>Dzintars Rāviņš, Emil Yankov, Imants Adijāns, Lyubomir Lazov, Daivis Rāviņš</b> INVESTIGATING THE IMPACT OF LASER POWER AND SCAN SPEED ON ENGRAVING ASPEN THERMOWOOD
10.50-11.05	<b>Ļubova Denisova, Antons Pacejs, Emil Yankov, Lyubomir Lazov</b> ANALYSING THE INFLUENCE OF TECHNOLOGICAL PARAMETERS ON THE PROCESS OF LASER MARKING OF SURFACE OF ANODISED ALUMINIUM SAMPLES
11.10-11.25	<b>Jēkabs Lapa, Imants Adijāns, Emil Yankov, Lyubomir Lazov, Ritvars Rēvalds</b> INVESTIGATION OF LASER MARKING AND TEXTURING OF TITANIUM GR 2 WITH FIBER LASER
11.30-11.45	<b>Daniels Raubiška, Imants Adijāns, Emil Yankov, Lyubomir Lazov</b> INVESTIGATING THE CONTRAST OF SURFACE MARKING ON DIFFERENT COLOR CONNECTORS FOR TELECOMMUNICATIONS NEEDS
11.50-12.05	<b>Lyubomir Lazov, Ivo Draganov</b> APPLICATION OF A FINITE ELEMENT MODEL TO OBTAIN THE INFLUENCE OF THE TREATMENT'S POWER, REFLECTION AND FOCAL DIAMETER IN LASER TEXTURING OF ALUMINUM
12.10-12.25	<b>Nikolay Todorov Dolchinkov, Teodor Petrov, Georgi Petrov, Christian Tolev, Emanuil Dimitrov</b> FEATURES OF COLOR LASER MARKING ON METALS
12.25-13.30	<i>Coffee-break</i>

**ENGINEERING SCIENCES AND PRODUCTION TECHNOLOGIES**

13.30-13.45	<b>Nikolay Todorov Dolchinkov</b> RESULTS AND ANALYSIS OF ACHIEVED JOINT RESEARCH AND ACTIVITIES BETWEEN REZEKNE ACADEMY OF TECHNOLOGY AND VASIL LEVSKI NATIONAL MILITARY UNIVERSITY
13.50-14.05	<b>Evgeni Lyubomirov Kehayov, Georgi Borisov Ivanov, Georgi Georgiev Komitov</b> 3D MODEL OF THE MECHANICAL PART OF A WEED RECOGNITION SYSTEM IN AN AGRICULTURAL ROBOT IN 3D EXPERIENCE ENVIRONMENT
14.10-14.25	<b>Karin Robam, Tony Hand, Veiko Karu</b> WHY T-SHAPED ENGINEERS IN THE MINING SECTOR ARE VITAL FOR PROGRESS

16.06.2023.

Section 3

**ENGINEERING SCIENCES AND PRODUCTION TECHNOLOGIES**

*Chairmen: Dr.sc.ing. Andris Martinovs and Ph.D. student Antons Pacejs,  
remote section, room 308*

*zoom link: <https://us06web.zoom.us/j/82168083808?pwd=ZGY4OVFidVRNaDdYVWFoZXBySVpCdz09>*

10.30-10.45	<b>Valentin Anguelov</b> THERMAL CHARACTERISTICS OF MATERIALS IN MODELLING OF WELDING PROCESSES
10.50-11.05	<b>Valeri Bakardzhiev, Sabi Sabev, Konstantin Chukalov, Plamen Kasabov</b> RESEARCH INTO THE ACCURACY OF HOLES IN 3D PRINTING USING TAGUCHI METHOD
11.10-11.25	<b>Radostina Zaekova, Plamen Tashev, Yassen Hadjitodorov, Deyan Gradinarov</b> MODIFICATION OF 5083 ALUMINUM ALLOY WITH GRAPHENE VIA FRICTION STIR PROCESSING
11.30-11.45	<b>Vladlen Devin, Serhii Yermakov, Oleg Gorbovy, Vitaliy Pidlisnyj, Oleksandr Semenov</b> RESEARCH ON WORKING BODIES OF HAMMER CRUSHERS EMPLOYING THE FINITE ELEMENT METHOD
11.50-12.05	<b>Serhii Yermakov, Taras Hutsol, Igor Gerasymchuk, Pavlo Fedirko, Viktor Dubik</b> STUDY OF THE UNLOADING AND SELECTION PROCESS OF ENERGY WILLOW CUTTINGS FOR THE CREATION A PLANTING MACHINE
12.10-12.25	<b>Pavlinka Katsarova, Kliment Georgiev, Adelina Vasileva, Marin Dimitrov</b> DESIGN AND PRODUCTION OF A DEVICE FOR BASING AND FIXING CONIC DETAILS IN SINE BAR MEASUREMENTS
12.25-13.30	<i>Coffee-break</i>
13.30-13.45	<b>Christo Kondoff, Rossen Mikhov, Leoneed Kirilov, Radostina Zaekova, Plamen Tashev</b> WORKING REGIMES FOR FRICTION STIR PROCESSING OF ALUMINIUM ALLOY A6061
13.50-14.05	<b>Vaidotas Matutis, Loreta Savulioniene, Paulius Sakalys, Laura Gzegezvske</b> RESEARCH OF THE PRINCIPAL MODEL OF THE ELECTRIC ENERGY GENERATOR OF THE ELECTRIC CAR (STAGE COMBINATION OF MECHANICAL AND ELECTROMECHANICAL PARTS)
14.10-14.25	<b>Oleksandra Orda, Yevgen Nagornyy, Natalia Potaman</b> APPROACH TO THE FORMING OF RATIONAL TECHNOLOGY FOR THE EXPORT CARGOES DELIVERY IN SUPPLY CHAIN ON THE PRINCIPLES OF CO-MODALITY
14.30-14.45	<b>Angel Poparov, Agop Izmirliq</b> CHARACTERISTICS OF MOVEMENTS WHEN CYLINDRICAL TURNING, DRILLING, COREDRILLING AND REAMING
14.50-15.05	<b>Angel Poparov, Agop Izmirliq</b> CHARACTERISTICS OF MOTIONS IN FACING

15.10-15.25	<p style="text-align: center;"><b>Kyrylo Smelyakov, Anastasiya Chupryna, Denys Sandrkin, Loreta Savulioniene, Paulius Sakalys</b> ADAPTIVE IMAGE ENHANCEMENT MODEL FOR THE ROBOT VISION SYSTEM</p>
15.30-15.45	<p style="text-align: center;"><b>Manahil Tongov, Valentin Anguelov</b> PRACTICE ORIENTED HEAT SOURCE MODEL CALIBRATION</p>
15.50-16.05	<p style="text-align: center;"><b>Oleksandr Byzkrovnyi, Kyrylo Smelyakov, Anastasiya Chupryna, Loreta Savulioniene, Paulius Sakalys</b> COMPARISON OF POTENTIAL ROAD ACCIDENT DETECTION ALGORITHMS FOR MODERN MACHINE VISION SYSTEM</p>

16.06.2023.

Poster\* Section 4

## ENVIRONMENT AND RESOURCES

Chairmen: *prof. Gintarė Jurkševičiūtė and prof. Ph.D. Desislava Petrova*  
1<sup>st</sup> florr hall

10.30-11.30 13.30-14.30	<b>Iluta Arbidane, Halina Synycyna, Daina Znotina, Oksana Ruža</b> THEORETICAL AND METHODOLOGICAL ASPECTS FOR THE DEVELOPMENT OF A CREATIVE ECONOMY IN THE CONTEXT OF THE FORMATION OF AN INNOVATIVE BUSINESS ECOSYSTEM
	<b>Līga Dzedule, Gunta Kalvane, Andis Kalvans</b> TEMPERATURE AND PRECIPITATION REGIME IMPACT ON SPRING BARLEY (HORDEUM VULGARE) GROWTH IN PRIEKUĻI CASE
	<b>Valda Laugale, Līga Lepse, Solvita Zeipiņa</b> INFLUENCE OF INTERCROPPING ON SOIL MICROBIAL ACTIVITY AND STRAWBERRY DEVELOPMENT
	<b>Inga Morozova, Veneranda Stramkale, Ieva Kroiča, Aldis Stramkalis</b> IDENTIFIED RESILIENT FLAX GENOTYPES WITH IMPROVED AGRONOMIC CHARACTERISTICS FOR PRE-BREEDING
	<b>Jelena Oreha, Aleksandra Morozova, Alberts Garkajs, Muza Kirjušina, Natalja Škute</b> GENETIC DIVERSITY AND POPULATION STRUCTURE OF THE EUROPEAN EEL (ANGUILLA ANGUILLA) IN BALTIC LAKELAND
	<b>Desislava Petrova</b> AN APPROACH TO MODELING INNOVATION OBSOLESCENCE
	<b>Desislava Petrova, Beata Vlahova, Angel Lengerov, Tsanka Zlateva-Petkova</b> IMPROVEMENT OF CONSTRUCTIVE-TECHNOLOGICAL APPROACHES REDUCING INNOVATIVE OBSOLESCENCE OF INDUSTRIAL TECHNOLOGIES IN THE CONTEXT OF INDUSTRY 4.0
	<b>Desislava Petrova, Beata Vlahova, Angel Lengerov, Tsanka Zlateva-Petkova</b> STUDY OF THE STATE OF INNOVATION DEVELOPMENT AND OBSOLESCENCE IN THE REPUBLIC OF BULGARIA OF COMPANIES FROM THE MECHANICAL ENGINEERING SECTOR
	<b>Liena Poiša, Lidiia Antypova</b> EVALUATION OF THE EFFECTS OF HERBICIDES ON THE WEEDS AND THE PRODUCTIVITY OF HYBRIDS MAIZE
	<b>Galia Shulga, Vadims Shakels, Sanita Vitolina, Brigita Neiberte, Anrijs Verovkins</b> POLYELECTROLYTE COMPLEX NANOPARTICLES OF SOLUBLE LIGNIN AND CHITOSAN AS INTERFACIAL MODIFIER
	<b>Andris Skromulis, Juris Breidaks, Mārtiņš Puķītis</b> WETLAND CHANGE DETECTION USING SENTINEL-2 IN THE PART OF LATVIA
	<b>Tatjana Dunaiska, Anna Batjuka, Aleksandrs Petjukevičs, Natalja Škute</b> PHYSIOLOGICAL RESPONSE OF SOME WHEAT CULTIVARS TO THERMAL STRESS
	<b>Dimcho Pulov, Tsanko Karadzhev, Yuliya Pulova-Ganeva</b> A VARIANT FOR USING REGRESSION ANALYSIS TO ASSESS THE ELECTROMAGNETIC ENVIRONMENT IN AN URBAN AREA
	<b>Rasma Tretjakova, Aija Brakovska, Jana Paidere</b>

	CHARACTERIZATION OF THE ZOOPLANKTON COMMUNITY OF A SHALLOW LAKE WITH ORGANIC-RICH SEDIMENT <b>Oskars Kurpnieks, Māris Senkovs, Alīna Rimkus</b>
	CHALLENGES OF SSF PROCESS FOR PEA AND WHEAT BRAN VALORIZATION USING TRICHODERMA SPP. FOR BIOCONTROL AGENT PRODUCTION <b>Sergejs Osipovs, Aleksandrs Pučkins</b>
	THE INFLUENCE OF TEMPERATURE CONDITIONS ON THE YIELD OF BIOGAS AND METHANE, WHICH IS OBTAINED FROM AQUACULTURE WASTE <b>Tamara Grizane</b>
	SUSTAINABILITY OF TOURISM AND THE ENVIRONMENT <b>Rasma Tretjakova, Jana Paidere, Aija Brakovska</b>
	ASSESSMENT BY MACROINVERTEBRATES OF THE ECOLOGICAL QUALITY OF SHALLOW LAKE WITH RICH SAPROPEL SEDIMENTS <b>Inta Umbraško, Anna Batjuka, Aleksandrs Petjukevičs, Mihails Pupins, Natalja Škute</b>
	ESTIMATION OF SALMONELLA SPP. PREVALENCE AND DIVERSITY AMONG FREE-LIVING TURTLES AND A ZOO COLLECTION

### INFORMATION TECHNOLOGIES

<b>10.30-11.30 13.30-14.30</b>	<b>Marat Rakhmatullaev, Sherbek Normatov, Fayzi Bekkamov</b> FUZZY RELATIONS BASED INTELLIGENT INFORMATION RETRIEVAL FOR DIGITAL LIBRARY USERS
	<b>Odiljon Naziraliyevich Urinkulov, Marat Rakhmatullaev, Gulchiroy Erkinovna Ziyodullayeva</b> FORMATION OF THE KNOWLEDGE BASE OF DIGITAL LIBRARIES BASED ON SEMANTIC MODELS OF AUTHORITY FILES
	<b>Elīna Miķelsone, Janis Frisfelds, Jean Pierre Segers</b> FACTOR ANALYSIS OF WEB-BASED IDEA MANAGEMENT SYSTEM APPLICATION RESULTS
	<b>Dmytro Mamchur, Janis Peksa</b> AN REVIEW OF THE EFFECTIVE ENERGY CONSUMPTION WITHIN THE GREEN IT AND GREEN ENERGY STRATEGIES

### EDUCATION IN ENGINEERING SCIENCES

<b>10.30-11.30 13.30-14.30</b>	<b>Gintarė Jurkševičiūtė, Vilma Morkūnienė, Aušra Žvironienė, Jovita Danielytė</b> STUDENTS' FINANCIAL LITERACY KNOWLEDGE RESEARCH: THE CASE OF KAUNO KOLEGIJA HIGHER EDUCATION INSTITUTION
	<b>Conyu Conev, Tsanko Karadzhov</b> APPLICATION OF THE FINITE ELEMENT METHOD FOR THE DESIGN OF SMALL ARM BARRELS
	<b>Makisms Zigunovs, Dmytro Mamchur, Antons Kolodinskis</b> THE USE OF VIRTUAL REALITY SOLUTIONS TO IMPROVE EDUCATIONAL EXPERIENCE FOR IT STUDENTS
	<b>Anna Khilya, Irina Sarancha, Oksana Fushtei, Natala Kazmirchuk, Anatolij Kyliivnyk</b> BASIC KNOWLEDGE OF SOFTWARE AND WEB CONTENT AS ELEMENTS OF SOCIAL PROGRAMMING IN EDUCATION
	<b>Anna Khilya</b> BASIC PRINCIPLES OF USING VIRTUAL AND AUGMENTED REALITY TECHNOLOGIES IN THE PROCESS OF TEACHER TRAINING IN UKRAINE

	<b>Alona Korol, Ivan Konovalchuk, Olena Kolosova, Nataliia Tarnavska, Anna Khilya</b> ORGANIZATION OF DISTANCE LEARNING IN THE UKRAINIAN PRACTICE OF INCLUSIVE EDUCATION
	<b>Anna Khilya</b> VIDEO PROJECTS AS A COMPONENT OF INCLUSIVE COMPETENCE OF FUTURE TEACHERS
	<b>Nataliia Saienko, Ganna Sozykina, Anastasiia Ptushka, Olena Yazlovytska, Alina Prudnikova</b> TEACHING ENGLISH TO POSTGRADUATE STUDENTS IN A TECHNICAL UNIVERSITY DIGITAL ENVIRONMENT

## ENGINEERING SCIENCES AND PRODUCTION TECHNOLOGIES

<b>10.30-11.30</b> <b>13.30-14.30</b>	<b>Krasimir Ambarev, Stilyana Taneva</b> STUDY OF THE INFLUENCE OF ROAD RESISTANCE ON THE FUEL CONSUMPTION OF A PASSENGER CAR WITH AN AUTOMATIC TRANSMISSION
	<b>Krasimir Ambarev, Valyo Nikolov</b> EXPERIMENTAL STUDY OF TOXIC COMPONENTS IN THE EXHAUST GASES DURING THE OPERATION OF A CAR ENGINE WITH GASOLINE AND LPG
	<b>Valeri Bakardzhiev, Sabi Sabev, Plamen Kasabov, Konstantin Chukalov</b> RESEARCH INTO 3D PRINTING LAYER ADHESION IN ABS MATERIALS
	<b>Vitaly Beresnevich, Marina Cerpinska, Martins Irbe, Janis Viba</b> CONVEYOR-TYPE SMALL HYDROPOWER PLANT FOR SHALLOW RIVER WATERS
	<b>Deyan Gradinarov, Marina Manilova, Manahil Tongov</b> EXPERIMENTAL REMOTE DETERMINATION OF THE STATIC CHARACTERISTIC OF THE ARC IN TIG WELDING
	<b>Vanya Dyakova, Hristina Spasova, Yoanna Kostova, Yana Mourdjeva, Georgi Stefanov</b> EFFECT OF CU AS MINORITY ALLOYING ELEMENT ON GLASS FORMING ABILITY AND CRYSTALLIZATION BEHAVIOR OF RAPIDLY SOLIDIFIED AL-SI-NI RIBBONS
	<b>Vanya Dyakova, Yoanna Kostova, Hristina Spasova</b> INFLUENCE OF NI AS MINORITY ALLOYING ELEMENT ON THE CORROSION BEHAVIOR OF AMORPHOUS AL-CU-MG ALLOYS IN CHLORIDE SOLUTION
	<b>Boyan Dochev, Desislava Dimova, Ivan Panov</b> INVESTIGATING THE POSSIBILITY OF ALLOYING AN ALLOY ALSI25CU5CR WITH CO, CR AND MO USING METAL POWDER
	<b>Boyan Dochev, Desislava Dimova, Mihail Zagorski, Plamen Kasabov, Georgiya Kamburova</b> INVESTIGATION OF THE STRUCTURE OF ALSI25CU4CR AND ALSI25CU5CR ALLOYS
	<b>Veselina Dukova, Roussi Minev, Emil Yankov</b> STUDY OF TECHNOLOGICAL CHAINS FOR RAPID PROTOTYPING OF ORTHODONTIC DENTAL PRODUCTS



	<p style="text-align: center;"><b>Georgi Iliev, Hristo Hristov</b></p> <p style="text-align: center;">MODELLING AND SIMULATION OF ELECTROPNEUMATIC POSITIONING SYSTEM INCLUDING THE LENGTH OF PNEUMATIC LINES</p>
	<p style="text-align: center;"><b>Georgi Iliev, Hristo Hristov</b></p> <p style="text-align: center;">MODELLING AND SIMULATION OF DYNAMIC PROCESSES OF PNEUMATIC LINES</p>
	<p style="text-align: center;"><b>Julieta Kaleicheva, Krassimir Kirov, Valentin Mishev, Rumyana Lazarova, Zdravka Karaguiozova</b></p> <p style="text-align: center;">EFFECT OF BORON ON THE WEAR BEHAVIOR OF HIGH CHROMIUM WHITE CAST IRONS</p>
	<p style="text-align: center;"><b>Angel Lengerov, Kalin Krumov, Georgi Levicharov</b></p> <p style="text-align: center;">STUDY OF THE KINEMATIC AND DYNAMIC OF INTERACTION OF A VIBRATING SYSTEM FOR CUTTING OPTICAL SLUGS</p>
	<p style="text-align: center;"><b>Dimilyan Leonov, Angel Lengerov, Kalin Krumov, Hristo Metev</b></p> <p style="text-align: center;">INCREASING THE QUALITY OF FORMING OF SPINNING DETAILS OF ALUMINUM ALLOYS BY CONTROLLING THE RESIDUAL STRESSES IN THEIR SURFACE LAYER</p>
	<p style="text-align: center;"><b>Dimilyan Leonov, Hristo Metev, Kalin Krumov, Angel Lengerov</b></p> <p style="text-align: center;">SOLVING FUNCTIONAL-TECHNOLOGICAL PROBLEMS USING A NON-PARAMETRIC APPROACH FOR CONTROL OF MICROGEOMETRY OF THE SURFACES OF DETAILS</p>
	<p style="text-align: center;"><b>Georgi Levicharov, Angel Lengerov, Stoyan Paliiski</b></p> <p style="text-align: center;">STUDY ABOUT THE INFLUENCE OF THE PROCESS PARAMETERS OF VIBRO IMPACT CUTTING OF OPTICAL SLUGS ON THE PRODUCTIVITY OF THE PROCESS</p>
	<p style="text-align: center;"><b>Silviya Salapateva, Iliya Chetrokov, Bano Stefanov</b></p> <p style="text-align: center;">ALGORITHM FOR OPTIMIZATION OF IDLE TOOL MOVES WHEN MILLING COMPLEX SURFACES ON A TRIAXIAL CNC MILLING MACHINE</p>
	<p style="text-align: center;"><b>Silviya Salapateva, Bano Stafanov</b></p> <p style="text-align: center;">MATHEMATICAL MODELING OF THE SEQUENCE OF MACHINING SECTIONS OF COMPLEX SURFACES WHEN MILLING ON A TRIAXIAL CNC MACHINE TOOL</p>
	<p style="text-align: center;"><b>Silviya Salapateva, Bano Stefanov</b></p> <p style="text-align: center;">EXPERIMENTAL STUDIES OF AN ALGORITHM FOR MINIMIZING THE IDLE TOOL MOVES WHEN MILLING COMPLEX SURFACES ON TRIAXIAL CNC MACHINE TOOLS</p>
	<p style="text-align: center;"><b>Ruta Meiste, Sandra Jakštienė, Aušra Lankauskienė</b></p> <p style="text-align: center;">IMPROVEMENT OF OPERATIONAL PROCESSES BY ENSURING WORK SAFETY IN PRODUCTION</p>
	<p style="text-align: center;"><b>Marin Jordanov Marinov</b></p> <p style="text-align: center;">A GEOMETRICAL SYNTHESIS OF COMEZ TEXTILE MECHANISMS OF FINALLY REMOVED POSSIBILITIES</p>
	<p style="text-align: center;"><b>Neli Nikolova</b></p> <p style="text-align: center;">HUMAN CAPITAL IN THE CHANGING WORK ENVIRONMENT OF INDUSTRY 4.0</p>

	<b>Sabi Sabev, Plamen Kasabov, Konstantin Chukalov, Valeri Bakardzhiev</b> INFLUENCE OF ADDING POLYPROPYLENE(PP) INTO POLYETHYLENE(PE) ON MECHANICAL PROPERTIES OF GEOCELLS
	<b>Genadi Cvetanov, Tsanko Karadzhov</b> OPTICAL GEOMETRIC DESIGN OF SMALL MODULAR CYLINDRICAL GEARS WITH ASYMMETRIC PROFILE
	<b>Sabi Sabev, Plamen Kasabov, Konstantin Chukalov, Valeri Bakardzhiev</b> DETERMINATION OF THE DYNAMIC MODULUS OF LINEAR DEFORMATIONS OF REINFORCED HIGHLY FILLED POLYMER CONCRETE COMPOSITES DURING CURING
	<b>Stiliyana Taneva, Krasimir Ambarev, Stanimir Penchev, Hristo Atanssov</b> FREQUENCY ANALYSIS OF AN ARM OF MACPHERSON SUSPENSION ON A PASSENGER CAR
	<b>Manahil Tongov, Vladimir Petkov</b> A THERMAL MODEL FOR WIRE ARC ADDITIVE MANUFACTURING
	<b>Ervins Blumbergs, Viktors Mironovs, Genadijs Sahmenko</b> COMPARATIVE STUDIES OF THE STRENGTH CHARACTERISTICS OF CONCRETE BLOCKS WITH TITANIUM AND IRON RODS (BARS)
	<b>Angel Lengerov, Sabi Sabev, Stoyan Paliiski</b> EXPERIMENTAL STUDY OF SURFACE ROUGHNESS IN VIBRO-IMPACT CUTTING OF OPTICAL SLUGS
	<b>Ivan Mitev, Simeon Tsenkulovski</b> LOCAL PROCESSING OF NON-METAL MATERIALS WITH CONCENTRATED ENERGY FLOW

## LASER TECHNOLOGIES

	<b>Borislav Georgiev, Tsanko Karadzhov</b> COMPARATIVE ANALYSIS OF GEOMETRIC DEVIATIONS IN CONTACT MEASURING INSTRUMENTS FOR CONTROL AND LASER CONTACTLESS SCANNING
	<b>Tsanko Karadzhov, Lyubomir Lazov</b> COMPARATIVE ANALYSIS OF METHODS FOR MEASURING LASER POWER
	<b>Dimcho Pulov, Petar Tsvyatkov</b> OPTICAL SYSTEMS FOR REDUCING THE DIVERGENCE OF LASER BEAMS

**\* Poster (1 page) must be send to e-mail: [vtr@rta.lv](mailto:vtr@rta.lv) until 8 June, 2023**

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## PROJECT WORKSHOP 16.06.2023

Starptautiskais seminārs “Kaņepju nozares perspektīvas un izaicinājumi” (projekta Nr. 18-00-Ao1612-000026 “Inovātīvi risinājumi industriālo kaņepju apstrādē un pārstrādē” ietvaros).  
Rēzeknes Tehnoloģiju akadēmija, Atbrīvošanas aleja 115, K-4, 112. auditorija.

zoom link: <https://us06web.zoom.us/j/81671053947?pwd=WXpOTjROWUthQU1VaG5MbXUzSTM0dz09>  
Meeting ID: 816 7105 3947 Passcode: 043658

9:30-10:15	Semināra dalībnieku reģistrācija, rīta kafija
10:15– 10:30	Semināra atklāšana – Projekta “Inovātīvi risinājumi industriālo kaņepju apstrādē un pārstrādē” pieredze un līdzšinējās atziņas. Edgars Romanovskis (biedrība “Mežvidu lauksaimniecības un tehnoloģiju parks”).
10:30 – 10:45	“Kaņepju izmantošanas ilgtspēja”. Ph.D. Ērika Teirumnieka (Rēzeknes Tehnoloģiju akadēmija)
10:45 – 11:05	“Perspektīvas kaņepju kultūras izmantošanai integrētās biorafinēšanas procesos: vērtējums un iespējas”. Dr. Raitis Kalniņš (SIA “Biorefic”)
11:05 – 11:25	“Kaņepju šķirņu ražas novērtējums par 2020.-2022.g.”. Dr. agr. Veneranda Stramkale (LBTU “Agroresursu un ekonomikas institūts” LSAN Viļānu daļa, SIA “Latgales lauksaimniecības zinātnes centrs”)
11:25 – 11:45	“Polijas kaņepju programmas pieredze” ( Institute of Natural Fibres and Medicinal Plants National Research Institute Wojska Polskiego 71b Street, 60-630 Poznań, POLAND (“Dabisko šķiedru un ārstniecisko augu pētniecības institūta”) pārstāvji
11:45 – 12:05	“Industriālo kaņepju audzēšanas tehnoloģisko paņēmieni un perspektīvu analīze Latvijā”. Dr. sc. ing. Semjons Ivanovs; Dr. sc. ing. Ādolfs Ruciņš (LBTU Tehnikās fakultātes Ulbrokas zinātnes centrs); Agris Šipkovs, Edgars Romanovskis (SIA “Jumis Geo”)
12:05 - 12:25	“Sēklaudzēšanas nozīme kaņepju nozares veiksmīgai attīstībai”. Iveta Pāvula (z/s “Lojas”)
12:25 – 13:00	Kafijas pauze
13:00 – 15:00	Apaļā galda diskusijas un semināra dalībnieku pieredzes apmaiņa
16:00	SIA “Jumis Geo” un SIA “Reits” kaņepju lauku apskate Ludzas novada, Mežvidu pagasta, Klonešņikos un citu Mežvidu lauksaimniecības un tehnoloģiju parka objektu apmeklēšana



SIA Latgales lauksaimniecības zinātnes centrs



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ATTĪSTĪBAS  
PLĀNS 2020



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EIROPA INVESTĒ LAUKU APVIDOS  
Eiropas Lauksaimniecības fonds  
lauku attīstībai

Atbalsta Zemkopības ministrija un Lauku atbalsta dienests