

1. Agricultural machinery and technologies

Moderator: Adolfs Rucins

<https://bbb2.llu.lv/b/ald-vy3-rh9>

Faculty of Engineering
Latvia University of Life Sciences and Technologies
Latvia Academy of Agricultural and Forest Sciences,
Section of Engineering



has the pleasure to invite you to attend
19th International Scientific Conference
Engineering for Rural Development
20.-22.05.2020 Jelgava, LATVIA

Time	ID	Presentetion title	Authors
10:00	TF059	Influence of milking robot application on cow longevity and amount of somatic cells in milk	Maris Mangalis
10:20	TF098	Disinfecting system of the device for removing the top sprouts of the potato plants	Alexander Levshin
10:40	TF150	The influence of adjustable front ballast on tractor axles balance	Vidas Damanuskas
11:00	TF178	Rationale of acceptable risk of using tractors with operational damages of responsible details	Ivan Rogovskii, Oleksandr Voinalovych
11:20	TF180	Research of diagnostic of combine harvesters at levels of hierarchical structure of systems and units of hydraulic system	Ivan Rogovskii
11:40	TF329	Justification of rational design parameters of milking machine for installations with milk line system	Oksana Achkevych, Svitlana Potapova, Vasyl Achkevych, Viacheslav Bratishko
12:00	Break		
13:00	TF177	Providing processes of preparation and distribution of feed for cattle on animal husbandry farms	Ivan Rogovskii, Khmelovskiy Vasy
13:20	TF187	Uniaxial compression test of bulk soybeans under different pre-treatment temperatures	Abraham Kabutey
13:40	TF362	Quality assesment of mounds made with uot moulder M22	Dagnija Lazdina, Karlis Duminš
14:00	TF422	An investigation into the spreading uniformity of granular manure	Vaidas Bivainis, Raimonda Zinkevičienė
14:20	TF266	Studies and researches concerning the possibility of increasing the precision at sowing machines in nests	Saracin Ion
14:40	TF124	Comparative research on the realization of agrotechnical indices by seedlings planting machines with cups dispensers	Paul Marious Mitrache
15:00	Break		
15:20	TF089	Experimental study of the operational characteristics of the new top harvesting machine	Volodymyr Bulgakov, Semjons Ivanovs, Simone Pascuzzi, Yevhen Ihnatiev
15:40	TF090	Investigation of the tillage depth of black fallow upon the moisture evaporation intensity	Valerii Adamchuk, Volodymyr Bulgakov, Volodymyr Nadykto, Semjons Ivanovs
16:00	TF092	Research of the descent of a particle of mineral fertiliser from the disc inclined at an angle to the horizon	Volodymyr Bulgakov, Oleg Adamchuk, Semjons Ivanovs, Janusz Nowak
16:20	TF094	Experimental research of the energy-power parameters of a vane cleaner of the beet root heads with horizontal drive shafts	Volodymyr Bulgakov, Semjons Ivanovs, Francesco Santoro, Alexandros Sotirios Anifantis

16:40	TF095	Research in jet mixing of the components of nutrient media in small-scale production of microbial pesticides	Valentyna Krutyakova, Vladislav Yaroshevsky, Volodymyr Bulgakov, Semjons Ivanovs
17:00	TF099	Experimental substantiation of the parameters of the aspiration separator of sunflower seeds	Volodymyr Bulgakov, Serhii Kiurchev, Semjons Ivanovs, Juri Olt
17:20	TF101	Experimental research and justification of the parameters of a spiral potato cleaner from admixtures	Volodymyr Bulgakov, Zinoviy Ruzhylo, Ivan Fedosiy, Semjons Ivanovs
17:40	TF281	Determination of technical and economic efficiency of equipment for mass breeding of entomophages	Valentyna Krutyakova, Igor Bespalov, Adolfs Rucins, Volodymyr Bulgakov
18:00	Break		
18:20	TF283	Experimental investigation of ways to increase efficiency of breeding grain moth	Valentyna Krutyakova, Olena Molchanova, Volodymyr Bulgakov, Adolfs Rucins
18:40	TF521	Laboratory research of storage of the predatory tick Amblyseius swirskii	Valentyna Krutyakova, Igor Limar, Adolfs Rucins, Volodymyr Bulgakov

Regulations: presentation – 15 min, discussion – 5 min

2. All similar engineering and technology studies

Moderator: Aivars Kakitis

<https://bbb2.llu.lv/b/ald-wmk-h6r>

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Time	ID	Presentetion title	Authors
10:00	TF211	Evaporative cooling technology efficiency compared to traditional cooling system – case study	Viktors Afonicevs
10:20	TF349	The results of experimental studies of the process of preparation of feed mixtures with their moistening	Viacheslav Bratishko, Oksana Achkevych, Dmytro Milko, Volodymyr Kuzmenko
10:40	TF407	Operator whole-body vibration exposure of wheeled forwarder with bogie tracks	Gediminas Vasiliauskas
11:00	TF432	Methodology for selection and decision making of gradation of sleepiness using algorithms for face video image processing.	Davis Krišjanis Muska
11:20	TF441	Application of remote sensing method for determination of arable land degradation	Velta Parsova
11:40	TF476	Pear and apple recognition using deep learning and mobile	Sergejs Kodors
12:00	Break		
13:00	TF558	Estimation of stress and displacement increase caused by heat generation in rubber shock absorber	Svetlana Polukoshko
13:20	TF284	Investigation of the efficiency of adaptive technologies and technical means for growing entomocultures	Aleksandrs Adamovics, Volodymyr Bulgakov
13:40	TF030	Determination of the Relationship Between Water Level and Volume and Meteorological Variables: A Study of Lake Egirdir	Atilgan Atilgan
14:00	TF144	The behavior of acidity, total nitrogen and total phosphorus in solid organic waste from the pig-rearing complex during its bio-fermentation	Alexander Briukhanov, Ekaterina Shalavina, Eduard Vasilev, Roman Uvarov, Aleksandr Valge
14:20	TF191	Selection and justification of the potato interrow tillage systems based on the development of a dynamic model of heat and moisture transfer between the soil layers	Andrei Kalinin, Valintina Kalinina, Igor Teplinsky, Vyacheslav Ruzhev

Regulations: presentation – 15 min, discussion – 5 min

3. Control systems and CAD, CAE, BIM technologies

Moderator: Vitalijs Osadcuks

<https://bbb2.llu.lv/b/ald-vnk-2ud>

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Time	ID	Presentetion title	Authors
10:00	TF037	BIM implementation challenges for the Latvian construction industry	Arturs Neiburgs, Sandra Gusta
10:20	TF078	Application of mathematical methods for current diagnostics of the cylinder-piston group elements of diesel engines.	Aleksandrs Terebkovs
10:40	TF372	Laser hardening process optimization using FEM	Andris Martinovs, Svetlana Polukoshko
11:00	TF545	Numerical evaluation of idle parameters of a novel throttle body for internal combustion engines	Karlis Banis
11:20	TF299	RGB based sensor for semi-spherical light measurements	Ansis Avotinš
11:40	TF088	Design and testing of electronic circuits to improve the performance of the automatic adjustment systems which equips sprinkling machinery	Mihnea Glodeanu, Cristian Vasile, Saracin Ion
12:00	Break		
13:00	TF411	Application of the Kinect sensor for three dimensional characterization of plants biomass	Francesco Marinello, Marco Sozzi
13:20	TF231	Designing an intelligent system for planning robot manipulator realtime movement in an unknown dynamic environment	Daiva Nemeiksyte, Vitalijs Osadcuks

Regulations: presentation – 15 min, discussion – 5 min

4. Engineering economics and education

Moderator: Baiba Briede

<https://bbb2.llu.lv/b/ald-zcx-4fd>

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Time	ID	Presentetion title	Authors
10:00	TF172	Development prospects of milk production invarious size farm groups in Latvia	Irina Pilvere
10:20	TF325	Knowledge of mathematics and physics as basis for studies in engineering	Natalija Sergejeva
10:40	TF303	Skills and competencies in mathematics of engineering students in the context of sustainable development	Evija Kopeika, Liga Zvirgzdina
11:00	TF435	End-of-life tyre recycling: going beyond to new circular business models in Latvia	Inga Uvarova, Dzintra Atstaja, Viola Korpa, Liga Avena
11:20	TF383	Institutional co-operation models for enhanced utilization of research infrastructure in the BSR	Valdis Avotins
11:40	TF218	Investigation of the dynamic load unit to the hydraulic workstation	Edgars Repša
12:00	Break		
13:00	TF373	A case study on sustainable environmental behavior in engineering education	Anna Vintere
13:20	TF405	Self-directed Learning of University Engineering Students in the Context of the Fourth Industrial Revolution	Baiba Briede, Natalia Popova
13:40	TF522	Attractiveness of Rural Areas: Development of an Initial Definition	Ligita Melece, Pavel Kogut
14:00	TF063	Development trends of milk production mechanisation in Latvia	Juris Priekulis
14:20	TF076	E-university as a development management tool for the regional system of engineering education	Irina Belinskaia, Tatyana Sidnenko, Sergey Sergeev
14:40	TF505	Promotion of engineering skills using ICT in the study process	Anda Zeidmane

Regulations: presentation – 15 min, discussion – 5 min

5. Fuels, technical liquids, transport and logistics

Moderators: Dainis Berjoza, Maris Gailis

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Time	ID	Presentetion title	Authors
10:00	TF137	Estimating the influence of rail profile shape on lateral wear of the rail and wheel after grinding of 60E1 and R65 rails	Pavels Gavrilovs, Viktor Ivanov
10:20	TF471	Assessment of alternative mobility opportunities for connecting Jelgava and Riga	Armands Veveris
10:40	TF285	Influence of uneven tire inflation pressure on vehicle dynamics during braking	Algirdas Janulevicius
11:00	TF162	Analysis of the experimental measurement of electric vehicle sound	Dainis Berjoza, Inara Jurgena, Ilmars Dukulis
11:20	TF132	Method of control of risk failures in providing technical safety of operation of transport and technological machines in reclining works	Nadezhda Sevryugina, Aleksey Apatenko
11:40	TF379	Remotely piloted aircraft system air vehicle wing airfoil selection	Nikolajs Glizde, Margarita Urbaha
12:00	TF342	Performance and emissions of a diesel engine operating on biodiesel and butanol blends	Tomas Mickevicius

Regulations: presentation – 15 min, discussion – 5 min

6. Material science, GHG emission and waste management

Moderator: Imants Nulle

<https://bbb2.llu.lv/b/ald-t7d-c7j>

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Time	ID	Presentetion title	Authors
10:00	TF032	Theoretical basis of justification of electromechanical hardening modes of machine parts	Alexander Pastukhov
10:20	TF190	Biodegradable packaging, impact on the shelf life pasteurised egg white	Vjaceslavs Kocetkovs
10:40	TF312	Birch plywood sample cyclic bending property investigation and analysis	Agris Zalcmanis
11:00	TF492	Impact of land use practices to greenhouse gas emissions from agriculture land on organic soils	Ieva Licite
11:20	TF541	Nanoscale composites based on Al ₂ O ₃ and SiC prepared by electroconsolidation method	Miroslaw Rucki
11:40	TF523	Adaptation to climate change in agriculture: ecosystem based options	Ligita Melece, Ilze Shena
12:00	Break		
13:00	TF133	Trend of ammonia emissions from livestock sector in Latvia	Olga Frolova, Aivars Aboltins, Juris Priekulis, Laima Berzina
13:20	TF070	Estimation of GHG emissions from the point of view of litter manure management in Lithuanian agriculture	Ramunas Mioldažys
13:40	TF138	Formation of water regime during irrigation by livestock wastes	Olga Chernikova, Vladimir Zhelyazko, Victor Kopytowski, Yuri Mazhaysky
14:00	TF367	Effect of modification time on microstructure and tensile strength AlSi9Mg alloy with Sr, Ti and B additions using in agricultural machinery	Tomasz Lipinski
14:20	TF368	Effect of Animal Slurry on Carbon Structural S235JR Steel at 303 K	Tomasz Lipinski
14:40	TF380	Experimental analysis the wear of the dental mills	Ioan Alexandru Saracin, Cârdei Petru, Gheorghe Voicu, Ilie Filip, Olimpia Pandia
15:00	Break		
15:20	TF087	Cutting the common reed stalk while maintaining its cross-sectional shape	Olafs Vronskis, Imants Nulle, Aivars Kakitis, Mareks Smits
15:40	TF433	Optimization of packing of local coarse aggregates for use in UHPC (Ultra-high-performance concrete)	Juris Zavickis
16:00	TF111	Experimental evaluation of static and fatigue strength of aluminium-based structural metallic alloys	Ivans Agafonovs, Margarita Urbaha, Vladislavs Turko, Aleksandrs Sorokins
16:20	TF077	Hardness testing and the chemical composition analysis of of the ER2 and ER2T series EMUs traction transmission rubber-cord coupling bolts	Pāvels Gavrilovs, Dmitrijs Gorbacovs

Regulations: presentation – 15 min, discussion – 5 min

7. Modelling and simulation

Moderator: Aivars Aboltins

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Time	ID	Presentetion title	Authors
10:00	TF477	Optimization of packaging solutions and the fruits and vegetable lyophilization process for pastilles shelf life	Sandra Muizniece-Brasava, Asnate Kirse-Ozolina
10:20	TF430	On modelling of artificial networks arising in applications	Svetlana Atslega
10:40	TF361	Modelling of Heat Processes for Data Transmission Equipment for Operation at High Temperature.	Janis Galins
11:00	TF438	Conservative averaging method for solving some nonlinear heat transfer problems related to combustion	Ilmars Kangro
11:20	TF429	Experimental Analysis of Bulk Material Flow Through the Hopper	Ivo Vaicis
11:40	TF439	Identification of possible ditch culvert locations using LIDAR data	Raitis Melniks
12:00	TF146	Determination of the parameters of the aerosol charging process when spraying plants	Sergey Antonov

Regulations: presentation – 15 min, discussion – 5 min

8. Renewable and conventional energy

Moderator: Liene Kancevica

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Time	ID	Presentetion title	Authors
10:00	TF418	Steam driven absorption heat pump and flue gas condenser applied for heat recovery in district heating network.	Dmitrijs Rusovs
10:20	TF261	Profile of hot water consumption of a multi-apartment building, depending on external conditions	Janis Berzins, Raimunds Selegovskis
10:40	TF384	Development of test bench for variable frequency drive loading and testing	Kaspars Kroics, Kirils Volosins
11:00	TF106	Impact of high temperature and other factors on PV module efficiency on small farms in Latvia	Normunds Stanka, Aivars Aboltinš, Janis Palabinskis
11:20	TF345	Determination of fibrous plants pellets moisture content dependences on the biofuel quality indicators	Dionizas Streikus
11:40	TF013	Researches regarding the evaluation of energy consumption for the manufacturing of pellets from vine pruning residues	Vlad Nicolae Arsenoiaia, Ioan Tenu, Radu Rosca, Petru Carlescu
12:00	Break		
13:00	TF020	Influence of mw pretreatment on the main gasification/combustion characteristics of different types of biomass	Raimonds Valdmanis
13:20	TF170	Form optimization and interaction analysis of plane symmetry prism in air	Shravan Koundinya Vutukuru
13:40	TF555	Investigation of reed and bulrush preparation and usage for energy purposes and determination of biofuel properties and harmful substances emissions	Algirdas Jasinskas
14:00	TF225	Solar power concentrator with photoelectric sensor control	Viktorija Zagorska, Liene Kancevica, Henriks Putans, Viktorija Zagorska, Ilze Pelece
14:20	TF250	Mathematical modelling and experimental study of straw co-firing with gas using the electric field control of combustion characteristics	Raimonds Valdmanis
14:40	Break		
15:00	TF532	Effectiveness of low voltage electric field usage for anaerobic fermentation of nanure, straw and paper dust	Imants Plume, Vilis Dubrovskis
15:20	TF529	Effectiveness of usage of straw and oak leaves pellets for biogas production	Atis Klavinš
15:40	TF247	Evaluation of energy obtained from solar panel loaded directly and with microinverter	Ilze Pelece
16:00	TF472	Problems of the development of the renewable energy facilities in the rural regions on example of Kazakhstan	Vladislav Zavadskiy

Regulations: presentation – 15 min, discussion – 5 min