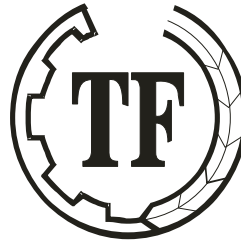


**Latvia University of Agriculture  
Faculty of Engineering**



**7<sup>th</sup> International Scientific Conference**

# **ENGINEERING FOR RURAL DEVELOPMENT**

## **PROGRAMME**

*The Conference is supported by*

**Ministry of Agriculture of Latvia  
Honeywell (Baltics)  
Lumo Reflect Ltd.**

*Conference languages – English, Russian, Latvian*

**Jelgava, Latvia, May 29 – 30, 2008**

## **PROGRAM COMMITTEE**

### **Chairman**

*Ainārs Galiņš*, asoc. prof., Dr.sc.ing. Latvia University of Agriculture (Latvia)

### **Members**

*Andris Šnīders*, prof., Dr.hab.sc.ing. Latvia University of Agriculture (Latvia)  
*Jānis Greivulis*, prof., Dr.hab.sc.ing. Riga Technical University (Latvia)  
*Jānis Rozenkrons*, prof., Dr.sc.ing. Riga Technical University (Latvia)  
*Aleksandras Kirka*, prof., Dr.sc.ing. Lithuanian University of Agriculture (Lithuania)  
*Andres Annuk*, asoc.prof., Dr.ing. Estonian University of Life Sciences (Estonia)  
*Vikentij Rusan*, prof., Dr.sc.techn. Belorussian Agrarian Technical University (Belorussia)  
*Vaclav Romaniuk*, prof., Dr.hab.sc.ing. Institute for Building, Mechanization and Electrification of Agriculture (Poland)  
*Vasiliy Sudachenko*, head of dep., Dr.sc.ing. Russian Academy of Agricultural Sciences (Russia)  
*Alexander Ribowski*, prof., Dr.sc.ing. (Germany)

## **ORGANISING COMMITTEE**

### **Chairman**

*Raimunds Šeļegovskis*, doc., Dr.sc.ing. Latvia University of Agriculture (Latvia)

### **Members**

*Ilmārs Žanis Klegeris*, asoc. prof., Dr.sc.ing., Dr.paed. Latvia University of Agriculture (Latvia)  
*Pēteris Leščevics*, asoc. prof., Dr.sc.ing. Latvia University of Agriculture (Latvia)  
*Genadijs Moskvins*, prof., Dr.hab.sc.ing. Latvia University of Agriculture (Latvia)  
*Aigars Laizāns*, doc., Mg.sc.ing., Mg.oec. Latvia University of Agriculture (Latvia)  
*Indulis Straume*, lecturer, Mg.sc.ing. Latvia University of Agriculture (Latvia)  
*Liene Kanceviča*, lecturer, Mg.sc.ing. Latvia University of Agriculture (Latvia)  
*Vitālijs Osadčuks*, Mg.sc.ing. Latvia University of Agriculture (Latvia)

## Thursday, 29 May

- 9<sup>15</sup> – 10<sup>00</sup>** Registration of participants,  
Faculty of Engineering, LUA, 5 J. Cakstes boulv., Room 314
- 10<sup>00</sup> – 12<sup>00</sup>** Opening of the conference and plenary session  
Faculty of Engineering, Room 410
- 
- 10<sup>00</sup> – 10<sup>10</sup>** **Māris Ķirsis**  
*Dean of Faculty of Engineering Latvia University of Agriculture (LUA)*  
OPENING SPEECH
- 10<sup>10</sup> – 10<sup>20</sup>** **Pēteris Rivža**  
*pro-rector of Latvia University of Agriculture*
- 10<sup>20</sup> – 10<sup>30</sup>** **Ainars Galiņš**  
*Chairman of Conference committee and director of Institute of Agricultural Energetic*
- 10<sup>30</sup> – 10<sup>45</sup>** **Valeriy Karpov, Natalya Ivannikova**  
*St.-Petersburg State Agrarian University, power-engineering faculty*  
MODERN PREPARATION OF THE POWER-ENGINEERS FOR  
THE DEVELOPMENT OF RURAL TERRITORIES
- 10<sup>45</sup> – 11<sup>00</sup>** **Zane Beitere, Raimunds Šeļegovskis**  
*Faculty of Engineering LUA*  
ENGINEERING EDUCATION PROBLEMS IN STUDY PROGRAM  
AGRICULTURAL ENERGETIC
- 11<sup>00</sup> – 11<sup>15</sup>** **Vilis Dubrovskis**  
*Latvia University of Agriculture*  
TRENDS OF BIOGAS PRODUCTION IN LATVIA
- 11<sup>15</sup> – 11<sup>30</sup>** **Vasili Sudachenko, Nickolay Zuev**  
*North-West Research Institute of Agricultural Engineering and Electrification (SZNIIMESH), Saint Petersburg, Russia*  
ESTIMATION PROCEDURE FOR APPLICATION EFFECT OF  
WIND-DIESEL POWER SYSTEMS FOR STAND-ALONE USERS
- 11<sup>30</sup> – 11<sup>45</sup>** **Aigars Laizāns**  
*Faculty of Engineering LUA*  
COMMERCIALIZATION OF SCIENTIFIC IDEAS
- 11<sup>45</sup> – 12<sup>00</sup>** **Raimunds Šeļegovskis**  
*Chairman of Organizing Committee*
- 
- 12<sup>00</sup> – 13<sup>00</sup>** Lunch
- 13<sup>00</sup> – 15<sup>00</sup>** Work in sections
- 15<sup>00</sup> – 15<sup>15</sup>** Coffee break
- 15<sup>15</sup> – 17<sup>30</sup>** Work in sections
- 
- Regulations:**    *Presentations – 10 minutes*  
                          *Discussions – 5 minutes*
- 
- 19<sup>00</sup>** Conference banquet:  
Recreation complex "**Debeszvanu pagrabiņš**";  
Address: Lielā iela 6, Jelgava (look at map)

## Section 1: HEAT PRODUCTION AND TRANSFER TECHNOLOGIES AND BIOENERGETICS

---

5 J. Cakstes boulv., Room 403

Chairman: prof., Dr. sc. ing. Imants Ziemelis  
*Latvia University of Agriculture*

Vice-chairman: doc., Dr. sc. ing. Raimunds Šeļegovskis  
*Latvia University of Agriculture*

### **1. Žanis Jesko**

*Latvia University of Agriculture*

CLASSIFICATION OF SOLAR COLLECTORS

### **2. Ilze Pelēce**

*Latvia University of Agriculture, Department of Physics*

INFLUENCE OF NEBULOSITY ON USE OF SOLAR ENERGY IN LATVIA

### **3. Henriks Putāns, Imants Ziemelis, Žanis Jesko, Igors Kristutis**

*Latvia University of Agriculture*

SOLAR COLLECTOR WITH HEAT PUMP

### **4. Imants Ziemelis, Žanis Jesko, Uldis Iljins, Henriks Putāns**

*Latvia University of Agriculture*

SOLAR ENERGY COLLECTOR WITH CANAL ABSORBER

### **5. Andrievs Ilsters, Žanis Jesko, Ēriks Ziemelis**

*Latvia University of Agriculture*

EFFICIENCY OF THE USE OF HEAT EXCHANGER IN THE PIGSTY

### **6. Aigars Lauva, Aivars Aboltiņš, Jānis Palabinskis, Nadežda Karpova Sadigova**

*Latvia University of Agriculture*

MOVABLE AIR SOLAR COLLECTOR AND IT'S EFFICIENCY

### **7. Vilis Dubrovskis, Imants Plūme, Indulis Straume**

*Latvia University of Agriculture*

ANAEROBIC FERMENTATION OF BROILER LITTER MANURE

### **8. Vilis Dubrovskis, Imants Plume, Aleksandrs Adamovics, Valdis Auzins, Indulis Straume**

*Latvia University of Agriculture*

GALEGA BIOMASS FOR BIOGAS PRODUCTION

## Section 2: ELECTRICAL PROCESSES, INTELLIGENT TECHNOLOGIES AND MODELLING

---

5 J. Cakstes boulv., Room 312

Chairman: prof., Dr. hab. sc. ing. Jānis Greivulis  
*Riga Technical University*

Vice-chairman: asoc.prof., Dr. sc. ing. Ainārs Galiņš  
*Latvia University of Agriculture*

**1. Jānis Doniņš, Jānis Greivulis**

*Riga Technical University*

COMPENSATED SINGLE PHASE RECTIFIER

**2. Jānis Voitkāns, Jānis Greivulis, Andris Voitkāns**

*Riga Technical University*

SINGLE WIRE AND RESPECTIVE DOUBLE WIRE SCHEME EQUIVALENCE PRINCIPLE

**3. Viesturs Bražis, Jānis Greivulis**

*Riga Technical University*

THE APPLICATION OF SUPERCAPACITOR ENERGY STORAGE DEVICES IN DC DRIVES

**4. Janis Greivulis, Anatoly Levchenkov, Mikhail Gorobetz**

*Riga Technical University*

MODELLING OF ARTIFICIAL NEURAL NETWORK CONTROLLER FOR ELECTRIC DRIVE WITH LINEAR TORQUE LOAD FUNCTION

**5. Uldis Antonovičs, Jānis Greivulis, Aleksandrs Gasparjans, Aleksandrs Terebkovs**

*Riga Technical University, Latvian Maritime Academy*

ASPECTS OF CREATION OF ASYNCHRONOUS OSCILLATING ELECTRIC DRIVES

**6. Jaan Lepa, Eugen Kokin, Andres Annuk, Vahur Pöder, Kuno Jürjenson**

*Eesti Maaülikool, Institute of Technology*

WIND POWER STATIONS PERFORMANCE ANALYSIS AND POWER OUTPUT PROGNOSIS

**7. Andris Sniders, Indulis Straume**

*Latvia University of Agriculture*

SIMULATION OF ELECTRICAL MACHINE SYSTEM WITH PERMANENT MAGNET SYNCHRONOUS GENERATOR

**8. Vitālijs Osadčuks, Ruslans Šmigins, Ainārs Galiņš**

*Latvia University of Agriculture*

MODERNIZATION OF A COMBUSTION ENGINE TEST BENCH

**9. Genadijs Moskvins, Evelina Spakovica, Artjoms Moskvins**

*Latvia University of Agriculture*

DEVELOPMENT OF INTELLIGENT TECHNOLOGIES AND SYSTEMS IN AGRICULTURE

**10. Stefan Thurner, Georg Wendl**

*Institut für Landtechnik, Bauwesen und Umwelttechnik der Bayerischen Landesanstalt für Landwirtschaft, LfL Freising*

AUTOMATIC IDENTIFICATION AND REGISTRATION OF LAYING HENS WITH RFID TECHNOLOGY

**11. Janis Fridrihsons**

*Latvia University of Agriculture*

UNCONVENTIONAL OPTICAL RADIATION SYSTEMS IN AGRICULTURAL PRODUCTION

## Section 3: MOBILE PROCESS IN AGRICULTURE

---

5 J. Cakstes boulv., Room 212

Chairman: Senior Researcher, Dr. hab. sc. ing. Arvīds Vilde  
Latvia University of Agriculture  
Vice-chairman: Prof., Dr. sc. ing. Vilnis Gulbis  
Latvia University of Agriculture

**1. Nikolajs Kopiks, Dainis Viesturs**

*Latvia University of Agriculture*

THE CHOICE OF AN OPTIMUM PLOUGHING AND SOWING AGGREGATE FOR DIFFERENT AMOUNTS OF WORK

**2. Semjons Ivanovs, Valentina Lazovska, Veneranda Stramkale**

*Latvia University of Agriculture*

COMPARATIVE ECONOMIC STUDIES IN THE FLAX PRODUCTION TECHNOLOGY

**3. Petr Heřmánek, Jiří Mašek, Pavel Procházka**

*Czech University of Life Science Prague*

FLOW MASS MONITORING IN THE HARVEST OF SUGAR BEET

**4. Jiří Mašek, Pavel Procházka, Zdeněk Kvíz, Rudolf Šindelář**

*Czech University of Life Sciences Prague*

MACHINES IN CONSERVATION SOIL TILLAGE TECHNOLOGIES

**5. Juris Bergs, Semjons Ivanovs, Baiba Melece**

*Latvia University of Agriculture*

RESEARCH IN THE GROWING TECHNOLOGY OF CULTIVATED CRANBERRIES AND BUSH BLUEBERRIES

**6. Arvids Vilde**

*Latvia University of Agriculture*

THE SHARE-MOLDBOARD PARAMETERS OF SOME PLOUGH BODIES

**7. Arvids Vilde, Edmunds Pirs**

*Latvia University of Agriculture*

CRITERIA FOR THE ESTIMATION OF THE EFFICIENCY OF AGRICULTURAL TRACTORS IN FIELD CROP CULTIVATION

**8. Vilnis Pīrs, Žanis Jesko, Jānis Lāceklis – Bertmanis**

*Latvia University of Agriculture*

DETERMINATION METHODS OF FUEL CONSUMPTION IN LABORATORY CONDITIONS

**9. Antoņina Čukure, Jānis Tupiņš, Žanis Jesko**

*Latvia University of Agriculture*

THE ASPECTS OF QUALITY MANAGEMENT SYSTEM IN ENTERPRISE OF AUTOMOBILE SERVICE

**10. Pavels Patlins**

*Riga Technical University*

VEHICLES DISCHARGING PROCESSES CONTROL OPTIMIZATION WITHIN PLANNING OF LOCAL DELIVERIES

**11. Janis Viba, Edgars Kovals, Atis Vilkajs**

*Riga Technical University*

VIBRATION DAMPING OF CARGO LIKE PENDULUM INSIDE VEHICLE HULL

**12. Ēriks Vonda, Gundars Zalcmanis**

*Riga Technical University*

LOAD MEASUREMENT ON THE AXIS OF THE TRUCK DURING THE LOADING

**13. Dainis Berjoza**

*Latvia University of Agriculture*

RESEARCH IN KINEMATIC OF TURN FOR VEHICLES AND SEMITRAILERS

**14. Juris Lauznis, Viktors Streļčs, Gunārs Balodis, Zigurds Markovičs, Gints Birzietis, Dainis Berjoza**

*Riga Technical University, Latvia University of Agriculture*

PARAMETER AND EVENT REGISTRATION SYSTEM OF VEHICLE

**15. Mykola Berezovyy, Volodymyr Bulgakov**

*National Academy of Ukraine*

MATHEMATICAL MODEL OF THREE-DIMENSIONAL INTERACTION OF THE FLEXIBLE VANE WITH A ROOT CROP HEAD

## Section 4: MECHANICS AND MATERIAL SCIENCES

---

5 J. Cakstes boulv., Room 410

Chairman: Doc, Dr. sc. ing. Daina Kanaška  
*Latvia University of Agriculture*

Vice-chairman: Doc, Dr. sc. ing. Jānis Čukurs  
*Latvia University of Agriculture*

**1. Dmitrijs Ļitvinovs**

*Riga Technical University*

PLANETARY REDUCTION GEARMOTOR VIBRATION DIAGNOSTICS

**2. Maris Eiduks, Janis Viba, Lauris Štāls**

*Riga Technical University*

ACCUMULATION OF FLUID FLOW ENERGY BY VIBRATIONS EXCITATION IN SYSTEM WITH TWO DEGREE OF FREEDOM

**3. Antoņina Čukure, Jānis Čukurs, Daina Kanaška, Imants Nulle**

*Latvia University of Agriculture*

STANDARDIZATION ROLE FOR IMPROVEMENT OF ENGINEER'S EDUCATING PROCESS

**4. Janīna Osnovina**

*Daugavpils University, Latvia*

METHOD OF CALCULATION THE NUMBER OF DIMENSIONS

**5. Milan Brožek, Alexandra Nováková**

*Czech University of Life Sciences Prague*

EVALUATION OF SINTERED CARBIDES WEAR RESISTANCE

**6. Miroslav Muller, Petr Hrabě, Rostislav Chotěborský**

*Czech University of Life Sciences*

OPTIMIZATION OF SURFACE TREATMENT PARAMETERS IN ADHESIVE BONDING TECHNOLOGY

**7. Gunars Verdins, Daina Kanaska**

*Latvia University of Agriculture*

THE RECESSION OF HARDNESS IN SAMPLES, CUT BY PLASMA, AFTER NORMALISING PROCESS FOR STEELS 65Mn4 AND 40Cr4

**8. Viacheslav Maksarov, Jūri Olt**

*North-Western State Technical University Sankt-Peterburg, Estonian University of Life Sciences*

METHODS OF PRELIMINARY LOCAL PHYSICAL ACTION ON THE WORKABLE SURFACE OF THE BLANK

**9. Gatis Muižnieks, Ēriks Gerins**

*Riga Technical University*

USABILITY OF ANALYTICAL METHODS IN DESIGN OF INSTRUMENT PROFILE OF SCREW TYPE COMPRESSORS

**10. Jānis Feldmanis**

*Latvia University of Agriculture*

MATHEMATICAL MODELING OF DISC BRAKE FRICTION LINING HEAT AND WEAR

**11. Aldis Paeglis, Jānis Feldmanis**

*Latvia University of Agriculture*

EVEN WEAR PROVIDING OF DISC BRAKE FRICTION LINING

**12. Guntars Uzklīņģis, Jānis Feldmanis**

*Latvia University of Agriculture*

ELASTIC DEFORMATION OF DISC BRAKE FRICTION LINING

## Section 5: STATIONARY PROCESSES AND BIOMASS PRODUCTION

---

5 J. Cakstes boulv., Room 405

Chairman: prof., Dr. sc. ing. Ēriks Kronbergs  
*Latvia University of Agriculture*

Vice-chairman: assoc.prof., Dr. sc. ing. Aivars Kaķītis  
*Latvia University of Agriculture*

**1. Aivars Kaķītis, Imants Nulle**

*Latvia University of Agriculture*

EVALUATION OF DRUM FEEDERS FOR BIOMASS DOSAGE

**2. Eriks Kronbergs, Mareks Smits**

*Latvia University of Agriculture*

DENSITY OF COMPACTED HERBACEOUS STALK MATERIALS

**3. Alexandra Nováková, Milan Brožek**

*Czech University of Life Sciences Prague*

MECHANICAL PROPERTIES OF PELLETS FROM SORREL

**4. Jānis Latvietis, Juris Priekulis, Indra Eihvalde**

*Latvia University of Agriculture*

PROBLEMS OF COW FEEDING IN ROBOTIC MILKING AND LOOSE HANDLING CONDITIONS

**5. Armīns Laurs, Juris Priekulis, Valdis Zujs, Ansis Saliņš**

*Latvia University of Agriculture*

MILKING FREQUENCY IN MILKING ROBOTS WITH FEED FIRST COW TRAFFIC

**6. Gunārs Brēmers, Anita Blija, Arnolds Šķēle, Gints Birzietis, Vilnis Gulbis, Aleksejs**

**Daņilevičs, Anatolij Bosenko, Agris Taukačs, Darius Sargautis**

*Latvia University of Agriculture, Latvia University, Ltd Jaunpagasts Plus*

RATIONALISATION POSSIBILITIES OF BIOETHANOL DEHYDRATATION

**7. Ilmārs Dukulis, Gints Birzietis, Daina Kanaška**

*Latvia University of Agriculture*

OPTIMIZATION MODELS FOR BIOFUEL LOGISTIC SYSTEMS

**8. Jānis Staša, Arnolds Šķēle, Ivars Pagasts**

*Latvia University of Agriculture*

DYNAMICS OF NOISE CAUSED BY WOODWORKING MACHINERY



**Friday, 30 May**

**10<sup>00</sup>**    **BUS TOUR & SIGHTSEEING**  
*Cinevilla – cinema studio set village;*  
*Slokenbeka – road museum;*  
*Roundtrip along by seaside via seacoast villages.*  
**~ 16<sup>00</sup>**    **RETURNING TO JELGAVA**



## NOTES

---

## NOTES

---

## NOTES

---

## NOTES

---

## NOTES

---



*Address of the Conference Committee*

**Faculty of Engineering  
Latvia University of Agriculture  
J. Cakstes boulvd. 5, Jelgava, LV-3001, Latvia  
Raimunds Selegovskis  
Fax: + 371 3020762  
E-mail: [raimunds.selegovskis@llu.lv](mailto:raimunds.selegovskis@llu.lv)**

THE CONFERENCE IS SUPPORTED BY

---



**Honeywell**

LUM  REFLECT  
GAIN  BEERFECT



K Y M D A T A

**CADS**  
*planner*