

RTU 64. starptautiskā zinātniskā konference

PROGRAMMA



64th International Scientific Conference of RTU

PROGRAMME

2023

RTU 64. starptautiskā zinātniskā konference. Programma

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| | |
|--|----|
| PLENĀRSĒDE..... | 3 |
| PLENARY SESSION | 4 |
| ARCHITECTURE AND URBAN PLANNING | 5 |
| BIOENERĢIJAS TEHNOLOĢIJAS UN BIOTEHNOLOĢIJAS | 7 |
| BIOENERGY TECHNOLOGIES AND BIOTECHNOLOGIES | 9 |
| BIOMEDICĪNAS INŽENIERIJA UN FIZIKA, PULVERMATERIĀLI | 11 |
| BIOMEDICAL ENGINEERING AND PHYSICS, POWDER MATERIALS | 12 |
| BŪVNICĪBA 1..... | 13 |
| CIVIL ENGINEERING 1 | 14 |
| BŪVNICĪBA 2..... | 15 |
| CIVIL ENGINEERING 2..... | 16 |
| CIVIL ENGINEERING | 17 |
| E-STUDIJU TEHNOLOĢIJAS | 18 |
| E-STUDY TECHNOLOGIES..... | 19 |
| HUMANITĀRĀS UN SOCIĀLĀS ZINĀTNES | 20 |
| HUMANITARIES AND SOCIAL SCIENCES..... | 21 |
| SCIENTIFIC PROBLEMS OF ENGINEERING ECONOMICS OF CONSTRUCTION AND REAL ESTATE MANAGEMENT, REGIONAL AND TERRITORIAL DEVELOPMENT | 23 |
| INŽENIERZINĀTŅU UN AUGSTSKOLU VĒSTURE | 26 |
| HISTORY OF ENGINEERING SCIENCES AND INSTITUTIONS OF HIGHER EDUCATION | 27 |
| INŽENIERTEHNIKA, MEHĀNIKA UN MAŠĪNBŪVNICĪBA..... | 28 |
| ENGINEERING, MECHANICS AND MECHANICAL ENGINEERING | 30 |
| LIETIŠĶĀS DATORSISTĒMAS | 32 |
| APPLIED COMPUTER SYSTEMS..... | 34 |
| MAŠĪNBŪVES TEHNOLOĢIJA UN SILTUMTEHNIKA..... | 36 |
| MECHANICAL ENGINEERING TECHNOLOGY AND HEAT ENGINEERING..... | 38 |
| MATERIALS SCIENCE AND APPLIED CHEMISTRY..... | 40 |

| | |
|---|----|
| MIKROVIĻŅU INŽENIERIJA UN ELEKTRONIKA..... | 42 |
| MICROWAVE ENGINEERING AND ELECTRONICS | 43 |
| POWER AND ELECTRICAL ENGINEERING (RTUCON)..... | 44 |
| OPENING AND KEYNOTE SESSION "BALTIC RESEARCH PROGRAM" | 44 |
| ELECTRICAL MACHINES, DRIVES AND VEHICLES | 45 |
| POWER ELECTRONICS (PART I) | 46 |
| POWER ENGINEERING (PART I)..... | 47 |
| POWER ENGINEERING (PART II) | 48 |
| POWER ENGINEERING (PART III) | 49 |
| HYBRID SESSION | 50 |
| ELECTRICAL ENGINEERING | 51 |
| POWER ELECTRONICS (PART II) | 52 |
| EDUCATION IN ENGINEERING | 53 |
| TELEKOMUNIKĀCIJAS..... | 54 |
| TELECOMMUNICATIONS | 56 |



RĪGAS TEHNISKĀ
UNIVERSITĀTE

RTU 64. starptautiskā zinātniskā
konference

Piektdiena,
13. oktobris

Zunda krastmala 8,
Domus Auditorialis

Plenārsēde

| | |
|-------------|---|
| 9.30–10.00 | Reģistrācija, kafija |
| 10.00–10.10 | Plenārsēdes atklāšana Akadēmiķis Tālis Juhna, RTU rektors |
| 10.10–10.20 | Pētniecības un inovāciju aktualitātes RTU 2022–2023 Profesors Gatis Bažbauers, RTU zinātņu prorektora p. i. |
| 10.20–10.40 | VILNIUS TECH / pētniecības un attīstības kapacitātes veicināšana Profesors Dalius Navakauskas, Viļņas Ģedimina tehniskās universitātes zinātņu un inovāciju prorektors |
| 10.40–11.00 | Jaunākie stratēģiskie sasniegumi Tallinas Tehnoloģiju universitātē (TalTech) Profesors Tiit Land, Tallinas Tehnoloģiju universitātes rektors |
| 11.00–11.20 | LUT universitāšu reitingos – pētnieka perspektīva Profesors Jari Hämäläinen, Lappeenranta-Lahti Tehnoloģiju universitātes zinātņu un inovāciju prorektors |
| 11.20–12.00 | Universitāšu kā inovāciju un ilgtspējīgas attīstības virzītājspēku loma Eiropas reģionālajās ekosistēmās Profesors Sergio Cavalieri, Bergamo Universitātes rektors |
| | RTU Goda doktora nosaukuma piešķiršana Bergamo Universitātes rektoram profesoram Sergio Cavalieri |
| | RTU Goda doktora nosaukuma piešķiršana Salento Universitātes rektoram profesoram Fabio Pollice |
| 12.00–12.40 | Ar PVDF un PLZT nanodaļiņām leģētas nanošķiedras biomedicīnai un enerģijas ieguvei Profesors Ashok Vaseashta, Starptautiskā tīrā ūdens institūts Manassasā, Virdžīnijā, ASV |
| | RTU Goda doktora nosaukuma piešķiršana Starptautiskā tīrā ūdens institūta Manassasā profesoram Ashok Vaseashta |
| 12.40–13.00 | Kafijas pauze |
| 13.00 | Apbalvojumu RTU Gada zinātnieks 2023, RTU Gada jaunā zinātniece 2023 un RTU Gada jaunais zinātnieks 2023 pasniegšanas ceremonija |
| | Apbalvojumu RTU Akadēmiskās izcilības gada balva – mācībspēks 2023, RTU Akadēmiskās izcilības gada balva – jaunais mācībspēks 2023 un RTU Akadēmiskās izcilības vides veicinātājs 2023 pasniegšanas ceremonija |
| | Glāze vīna un uzkodas |



RIGA TECHNICAL
UNIVERSITY

64th International Scientific Conference
of Riga Technical University

Friday,
October 13

Domus Auditorialis,
8 Zunda krastmala

PROGRAMME

Plenary Session

| | |
|-------------|---|
| 9.30–10.00 | Registration and coffee |
| 10.00–10.10 | Welcome address Academician Tālis Juhna, Rector, Riga Technical University |
| 10.10–10.20 | Research and Innovation Highlights at RTU 2022–2023 Professor Gatis Bažbauers, acting Vice-Rector for Research |
| 10.20–10.40 | VILNIUS TECH Fostering Research and Development Capacities Professor Dalius Navakas, Vice-Rector for Research and Innovation, Vilnius Gediminas Technical University |
| 10.40–11.00 | Recent Strategic Developments at Tallinn University of Technology (TalTech) Professor Tiit Land, Rector, Tallinn University of Technology (TalTech) |
| 11.00–11.20 | LUT in University Rankings – Researcher's Perspective Professor Jari Hämäläinen, Vice-President for Research and Innovation, Lappeenranta-Lahti University of Technology |
| 11.20–12.00 | The Role of Universities as Drivers of Innovation and Sustainable Development in European Regional Ecosystems Professor Sergio Cavalieri, Rector, University of Bergamo |
| | Awarding the title of RTU Honorary Doctor to Professor Sergio Cavalieri, Rector of the University of Bergamo |
| | Awarding the title of RTU Honorary Doctor to Professor Fabio Pollice, Rector of Salento University |
| 12.00–12.40 | Nanofibers Doped with PVDF and PLZT Nanoparticles for Biomedical and Energy Harvesting Applications Professor Ashok Vaseashta, International Clean Water Institute Manassas, Virginia, USA |
| | Awarding the title of RTU Honorary Doctor to Professor Ashok Vaseashta, International Clean Water Institute Manassas, Virginia, USA |
| 12.40–13.00 | Coffee |
| 13.00 | Awards Ceremony: The Scientist of the Year 2023, The Young Female Scientist of the Year 2023, The Young Male Scientist of the Year 2023 |
| | Awards Ceremony: RTU Annual Academic Excellence Award – Teaching Staff 2023, RTU Academic Excellence of the Year Award – New Teaching Staff 2023, and RTU Academic Excellence Environmental Promoter |
| | Reception / Glass of wine, light snacks |

The working language of the plenary session will be English.



RIGA TECHNICAL
UNIVERSITY

64th International Scientific Conference
of Riga Technical University

Friday,
October 13

6 Ķīpsālas Street,
Room 435

PROGRAMME

Architecture and Urban Planning

HEAD OF THE SECTION

Dr. habil. arch. **Jānis Krastiņš**,
professor, Riga Technical
University, Latvia

Dr. arch. **U. Bratuškis**,
Professor, Riga Technical
University, Latvia

Dr. arch. **S. Treija**, Professor,
Riga Technical University,
Latvia

SCIENTIFIC COMMITTEE

Dr. habil. arch. **J. Krastiņš**,
Professor, Riga Technical
University, Latvia

Dr. arch. **E. Bondars**,
Professor, Riga Technical
University, Latvia

Dr. **K. Zaleckis**, Professor,
Kaunas University of
Technology, Lithuania

Ph. D. **A. Korojova**, Assistant
Professor, Riga Technical
University, Latvia

9.30 REGISTRATION

10.00 OPENING AND WELCOME ADDRESSES

Session 1: 10.10–11.30

BALTIC ARCHITECTURAL EDUCATION IN TIMES OF CRISIS (1946–1949): FACULTY OF ARCHITECTURE AT THE BALTIC UNIVERSITY

Marija Dremaite, Vilnius University, Lithuania

THE SPECIFIC MINDSETS OF LITHUANIAN ARCHITECTS FROM DIFFERENT FIELDS OF ARCHITECTURE

Edita Riaubienė, Eglė Navickienė, Vilnius Gediminas Technical University, Lithuania

SUSTAINABILITY ISSUES IN ARCHITECTURAL EDUCATION

Sarmīte Barvika, Edgars Bondars, Riga Technical University, Latvia

ADOPTING HISTORIC BUILDINGS FOR URBAN INCLUSIVENESS: A UK-TAIWAN COMPARISON

Koching Chao, National Sun Yat-sen University, Taiwan (R.O.C.),

Yang, Chung-Han, National Tsing Hua University, Taiwan (R.O.C.)

Discussion

11.30–12.00 BREAK

Session 2: Posters 12.00–13.00

INTERCULTURAL INFLUENCE IN ARCHITECTURAL ART EDUCATION RIGA TECHNICAL UNIVERSITY EXPERIENCE

Elīna Elere, Andra Ulme, Riga Technical University, Latvia

NAVIGATING URBAN HERITAGE: ARCHITECTURAL AND URBAN MANAGEMENT FOR SUSTAINABLE TRANSFORMATION IN VILNIUS HISTORIC CENTRE

Rugile Balkaite Puodziuniene, Vilnius University, Lithuania

DEFINING THE CREATIVE HUBS

Andra Babre, Sandra Treija, Riga Technical University, Latvia

THE RESEARCH ON THE AESTHETIC QUALITY OF MULTI-STORY RESIDENTIAL AREAS IN LATVIA AND THE NORDIC COUNTRIES.

Aija Ziemeļniece, Una Īle, Latvia University of Life Sciences and Technologies, Latvia

SENIOR EXERCISE PARK - ADAPTATION CHALLENGES IN CEE REGION COUNTRIES.

Anna Oļha, Sandra Treija, Riga Technical University, Latvia

THE NEOECLECTIC SCHOOL ARCHITECTURE IN LATVIA IN THE 1940s–1950s

Luīze Aizpurva, Riga Technical University, Latvia

13.00–14.00 LUNCH (INVITATION ONLY)

Session 3: 14.00–15.30

CARDIOGRAM OF THE PARK:

QUANTITATIVE ANALYSIS OF WALKING SCENARIOS OF TRAKŲ VOKĖ HISTORIC PARK.

Kęstutis Zaleckis, Indrę Gražulevičiūtę-Vileniškę,
Huriye Armağan Doğan, Yulia Ivashko, Kaunas University of Technology, Lithuania

APPLICATION OF GREENERY IN PLANNING ACTIVE LEISURE AREAS IN THE URBAN ENVIRONMENT

Ilze Janpavle, Una Ile, Latvia University of Life Sciences and Technologies, Latvia

BALANCING NATURE AND TOURISM: INNOVATIVE ARCHITECTURAL AND PLANNING APPROACHES FOR MITIGATING RISING OVERTOURISM

Matijs Babris, Uģis Bratuškins, Riga Technical University, Latvia

THE DEVELOPMENT OF THE BATH HOUSE IN ĶEMERI, LATVIA.

Baiba Vērpe, Riga Technical University, Latvia

DISCUSSION

15.30–16.00

BREAK

Session 4: 16.00–17.30

THE ARCHITECTURE OF FOLK SCHOOLS IN LATVIA:

DEVELOPMENT AND STYLISTIC FEATURES IN KURZEME AND ZEMGALE

Madara Marcinkus, Ilmārs Dirveiks, Riga Technical University, Latvia

PRESERVATION SCENARIOS FOR POSTWAR CONCRETE ARCHITECTURE:

THE CASE OF LITHUANIA.

Aušra Černauskiene Vilnius Gediminas Technical University, Lithuania

APPLICATION OF URBAN THEORIES IN DEVELOPING PARTICIPATORY PLANNING TOOLS

Kęstutis Zaleckis, Jurga Vitkuvienę, Laura Jankauskaitę-Jurevicienę, Indrę Gražuleviciutę-Vileniškę, Kaunas University of Technology, Lithuania

TOWARDS COLLABORATIVE GOVERNANCE:

COMMUNITY PARTICIPATION IN STREET EXPERIMENTS FOR INNER-CITY REGENERATION

Sandra Treija, Uģis Bratuškins, Alisa Koroļova, Riga Technical University, Latvia

DISCUSSION

17.30

FINAL REMARKS. CLOSING OF THE CONFERENCE



RĪGAS TEHNISKĀ
UNIVERSITĀTE

RTU 64. starptautiskā zinātniskā
konference

Otrdien,
17. oktobrī

RTU Zinātnes un
inovāciju centrā,
Ķīpsalas ielā 6A

PROGRAMMA

Bioenerģijas tehnoloģijas un biotehnoloģijas

SEKCIJAS VADĪTĀJA

Asociētā profesore
Linda Mežule,
Rīgas Tehniskā universitāte,
Latvija

ZINĀTNISKĀ KOMISIJA

Profesors **Tālis Juhna**,
Rīgas Tehniskā universitāte, Latvija

Asociētā profesore **Linda Mežule**,
Rīgas Tehniskā universitāte, Latvija

Dalība tikai ar iepriekšēju reģistrēšanos

9.00–9.05

ATKLĀŠANA

Linda Mežule, Rīgas Tehniskā universitāte, Latvija

Pirmā sesija. Atkritumproduktu apstrāde, bioloģiskā pārstrāde un bioenerģija

9.05–9.25

NOTEKŪDEŅU DŪŅU APSTRĀDES TEHNOLOĢIJAS

Sandis Dejus, Latvijas Ūdensapgādes un Kanalizācijas Uzņēmumu Asociācija, Latvija

9.25–9.40

RESURSU ATGŪŠANAS CEĻI, APSAIMNIEKOJOT LATVIJAS SADZĪVES NOTEKŪDEŅU DŪŅAS

Rūta Zariņa, Rīgas Tehniskā universitāte, Latvija

9.40–10.00

ATKRITUMPRODUKTU APSTRĀDES SMAKU EMISIJAS UN TO IETEKMES NOVĒRTĒJUMS

Marco Schiavon, Padujas Universitāte, Itālija

10.00–10.20

TERMISKI-BIOLÓĢISKA ATKRITUMU PRIEKŠAPSTRĀDE ENERĢIJAS ATGŪŠANAI

Luca Adami, Trento Universitāte, Itālija

10.20–10.40

INOVATĪVI MĀLA POLIFENOLU BIODĒMĒJUMI UN TO NOZĪME APRITES EKONOMIKAS ATTĪSTĪBĀ

Aiga Salmiņa, Latvijas Universitāte, Latvija

10.40–11.00

TBC

Timo Kikas, Igaunijas Dabaszinātņu universitāte, Igaunija

11.00–11.20

ELEKTROĶĪMISKA LIGNĪNA DEPOLIMERIZĀCIJA MELNAJĀ ATSĀRMĀ

Roman Tschentscher, SINTEF, Norvēģija

11.20–12.00

KAFIJAS PAUZE

Otrā sesija. Notekūdeņu apstrāde

12.00–12.20

NOTEKŪDEŅU SISTĒMU EKSERĢISKĀ ANALĪZE, IZMANTOJOT CO₂ EMISIJU NOVĒRTĒJUMU. ENERĢIJAS UN KLIMATA IETEKSMJU MODELIS

Ģirts Patriks Kronbergs, Rīgas Tehniskā universitāte, Latvija

12.20–12.35

BIOLOĢISKĀS FLOKULĀCIJAS TEHNOLOĢIJA MIKROAĻĢU ATDALĪŠANAI PĒC NOTEKŪDEŅU ATTĪRĪŠANAS

Anna Čivžele, Rīgas Tehniskā universitāte, Latvija

12.35–12.50

NOTEKŪDEŅU KONCENTRĒŠANAS IEKĀRTAS NOTEIKŠANAS ROBEŽU IZPĒTE SARS-CoV-2 VĪRUSU DAĻIŅU PRECĪZAI KVANTITĀTĪVAI NOTEIKŠANAI

Roberts Ozols, Rīgas Tehniskā universitāte, Latvija

12.50–13.05 **SARS-CoV-2 VARIANTU IZPLATĪBAS MONITORINGS LATVIJĀ: DINAMIKAS ANALĪZE**
Juris Laicāns, Rīgas Tehniskā universitāte, Latvija

Trešā sesija. Ūdens apstrādes tehnoloģijas un citi temati

13.05–13.20 **OPTISKO ŠĶIEDRU UN MEMBRĀNU TEHNOLOĢIJU SINERĢIJA FOTOKATALĪTISKO ŪDENS ATTĪRĪŠANAS TEHNOLOĢIJU UZLABOŠANAI**
Basanti Ekka, Rīgas Tehniskā universitāte, Latvija

13.20–13.35 **ULTRAFILTRĀCIJAS MEMBRĀNU TEHNOLOĢIJU UZLABOJUMI BIOFILMU VEIDOŠANĀS NOVĒRŠANAI**
Ralfs Vēvers, Rīgas Tehniskā universitāte, Latvija

13.35–13.50 **ATŠĶIRĪBAS PROJEKTĒTĀJĀ UN NOVĒROTAJĀ INFILTRĀCIJAS ĀTRUMĀ BIOIEVĀKĀS UN SECINĀJUMI ILGTSPĒJĪGO LIETUS ŪDENS APSAIMNIEKOŠANAS RISINĀJUMU PROJEKTĒŠANAI UN APSAIMNIEKOŠANAI**
Juris Kondratenko, Rīgas Tehniskā universitāte, Latvija

13.50–15.00 **STENDA REFERĀFU SESIJA, DISKUSIJAS UN KAFIJAS PAUZE**

15.00 **NOSLĒGUMS**

Bioenergy Technologies and Biotechnologies

HEAD OF THE SECTION

Associate Professor
Linda Mezule,
Riga Technical University,
Latvia

SCIENTIFIC COMMITTEE

Professor **Tālis Juhna,**
Riga Technical University, Latvia

Associate Professor **Linda Mezule,**
Riga Technical University, Latvia

Pre-registration required

9.00–9.05 **OPENING AND WELCOME ADDRESSES**
Linda Mezule, Riga Technical University, Latvia

First session. Waste management, Biorefineries and Bioenergy.

9.05–9.25 **WASTEWATER SLUDGE MANAGEMENT IN LATVIA**
Sandis Dejus, Latvian Water and Wastewater Works Association, Latvia

9.25–9.40 **RESOURCE RECOVERY ROUTES FOR SEWAGE SLUDGE IN LATVIAN WWTPs**
Ruta Zarina, Riga Technical University, Latvia

9.40–10.00 **THE ISSUE OF ODOUR EMISSIONS FROM WASTE TREATMENTS AND THEIR IMPACT ASSESSMENT**
Marco Schiavon, University of Padova, Italy

10.00–10.20 **ASSISTED BIO-DRYING OF WASTE AS A PRE-TREATMENT OF ENERGY RECOVERY OPTIONS**
Luca Adami, University of Trento, Italy

10.20–10.40 **INNOVATIVE CLAY BASED BIOLOGICALLY ACTIVE POLYPHENOL COMPOSITES AND THEIR POTENTIAL FOR BIOECONOMY DEVELOPMENT**
Aiga Salmina, University of Latvia, Latvia

10.40–11.00 **TBC**
Timo Kikas, Estonian University of Life Sciences, Estonia

11.00–11.20 **ELECTROCHEMICAL DEPOLYMERISATION OF LIGNIN IN BLACK LIQUOR**
Roman Tschentscher, SINTEF, Norway

11.20–12.00 **COFFEE BREAK**

Second session. Wastewater treatment.

12.00–12.20 **EXERGIC ANALYSIS OF WASTEWATER SYSTEMS WITH CO₂ EQUIVALENT ASSESSMENT. ENERGY AND CLIMATE IMPACT MODEL**
Girts Patriks Kronbergs, Riga Technical University, Latvia

12.20–12.35 **FUNGAL-ASSISTED FLOCCULATION TECHNOLOGY FOR MICROALGAE HARVESTING AFTER WASTEWATER TREATMENT**
Anna Civzele, Riga Technical University, Latvia

| | |
|-------------|---|
| 12.35–12.50 | INVESTIGATING THE DETECTION LIMIT OF WASTEWATER CONCENTRATION DEVICE FOR ACCURATE QUANTIFICATION OF SARS-CoV-2 VIRAL PARTICLES: A CASE STUDY FROM LATVIA Roberts Ozols, Riga Technical University, Latvia |
| 12.50–13.05 | TRACKING THE SPREAD OF SARS-CoV-2 STRAIN VARIANTS IN LATVIA: A DYNAMIC ANALYSIS Juris Laicans, Riga Technical University, Latvia |

Third session. Water treatment and other topics.

| | |
|-------------|--|
| 13.05–13.20 | SYNERGIZING OPTICAL FIBER AND MEMBRANE TECHNOLOGIES FOR ENHANCED WATER PURIFICATION IN A PHOTOCATALYTIC REACTOR Basanti Ekka, Riga Technical University, Latvia |
| 13.20–13.35 | ULTRAFILTRATION MEMBRANE MODIFICATION FOR IMPROVED FOULING RESISTANCE Ralfs Vevers, Riga Technical University, Latvia |
| 13.35–13.50 | MONITORED VS DESIGNED INFILTRATION RATE OF BIORETENTION AND IMPLICATIONS FOR BIORETENTION DESIGN AND MANAGEMENT. CASE STUDY: RIGA, LATVIA Jurij Kondratenko, Riga Technical University, Latvia |
| 13.50–15.00 | POSTER PRESENTATIONS, DISCUSSION AND COFFEE |
| 15.00 | CLOSURE |



RĪGAS TEHNISKĀ
UNIVERSITĀTE

RTU 64. starptautiskā zinātniskā
konference

Ceturtdiena,
12. oktobris

Ķīpsalas iela 6B,
312. auditorija

PROGRAMMA

Biomedicīnas inženierija un fizika, pulvermateriāli

SEKCIJAS VADĪTĀJA

Dr. sc. ing. **Marina Romanova**,
Rīgas Tehniskā universitāte,
Latvija

Dr. habil. phys. **Jurijs
Dehtjars**, Rīgas Tehniskā
universitāte, Latvija

ZINĀTNISKĀ KOMISIJA

Dr. phys. **Aleksejs Kataševs**,
Rīgas Tehniskā universitāte,
Latvija

Dr. habil. sc. ing. **Viktors
Mironovs**, Rīgas Tehniskā
universitāte, Latvija

11.30–11.35

ATKLĀŠANA

Marina Romanova, Rīgas Tehniskā universitāte, Latvija

11.35–11.50

VĀJA ELEKTRONU EMISIJA NO NANODIAMANTA, KAS APSTAROTS AR AUGSTAS ENERĢIJAS ELEKTRONIEM

Jurijs Dehtjars, Mirko Rocca, Arturs Sokolovs, Hermanis Sorokins, Rīgas Tehniskā universitāte, Latvija

11.50–12.05

SAĶEPINĀTU PULVERVEIDA DETAĻU APSTRĀDE UN SAVIENOŠANA AR PULSĒJOŠO ELEKTROMAGNĒTISKO LAUKU

Viktors Mironovs, Vjaceslavs Zemcenkovs, Rīgas Tehniskā universitāte, Latvija
Matthias Kolbe, Lietišķo zinātņu universitāte Zwickau, Vācija

12.05–12.20

ĀTRĀS SASALDĒŠANAS KONCEPCIJA AR PAPILDU ELEKTROMAGNĒTISKĀ LAUKA IEDARBĪBU

Pēteris Rudzītis, Jekaterina Kuzmina, Viktors Mironovs, Vjaceslavs Zemcenkovs, Rīgas Tehniskā universitāte, Latvija
Vadims Sokolovs, LTD "Freezerbergs", Jūrmala, Latvija

12.20–12.35

IESPĒJA DIFERENCĒTI NOVĒRTĒT TĀUKU UN ŪDENS SATURU GAĻĀ AR ULTRASKAŅAS MĒRĪJUMIEM

Aleksejs Tatarinovs, Jekaterina Kuzmina, Viktors Mironovs, Rīgas Tehniskā universitāte, Latvija

12.35–12.50

KORELĀCIJA STARP CEĻA PAĀTRINĀJUMU UN AR VIEDO ZEĶI IEGŪTO PLANTĀRA SPIEDIENA NOVĒRTĒJUMU

Pauls Daugulis, Aleksejs Kataševs, Aleksandrs Okss, Rīgas Tehniskā universitāte, Latvija

12.50–13.05

UV STAROJUMA IETEKME UZ RAUGA ŠŪNU IMOBILIZĀCIJU UZ MG- UN TI- IZCELSMES SAKAUSĒJUMU UN TO CAP PĀRKLĀJUMU VIRSMĀM*

Marks Gorohovs, Anna Bystrova, Jurijs Dehtjars, Rīgas Tehniskā universitāte, Latvija
Gaļina Hrustaļova, Latvijas Universitāte, Latvija

* Pētījums saņēmis ERA.Net RUS Plus – INNOVATION programmas finansējumu (projekts RUS_INNO2017-031-CoatDegraBac).

13.05–13.20

SPĒCĪGA PULSĒJOŠĀ MAGNĒTISKĀ LAUKA IETEKME UZ RAUGA ŠŪNĀM

Dainis Kivkucāns, Jurijs Dehtjars, Rīgas Tehniskā universitāte, Latvija
Gaļina Hrustaļova, Latvijas Universitāte, Latvija

13.20

NOSLĒGUMS, DISKUSIJAS

Biomedical Engineering and Physics, Powder Materials

HEAD OF THE SECTION

Dr. sc. ing. **Marina Romanova**,
Riga Technical university,
Latvia

Dr. habil. phys. **Yuri Dekhtyar**,
Riga Technical university,
Latvia

Dr. phys. **Alexei Katashev**,
Riga Technical university,
Latvia

Dr. habil. sc. ing. **Viktors
Mironovs**, Riga Technical
university, Latvia

SCIENTIFIC COMMITTEE

| | |
|-------------|--|
| 11.30–11.35 | OPENING AND WELCOME ADDRESSES Marina Romanova, Riga Technical university, Latvia |
| 11.35–11.50 | WEAK ELECTRON EMISSION FROM NANODIAMOND IRRADIATED WITH HIGH-ENERGY ELECTRONS Yuri Dekhtyar, Mirko Rocca, Artur Sokolov, Hermanis Sorokins, Riga Technical university, Latvia |
| 11.50–12.05 | PROCESSING AND JOINING OF SINTERED POWDER PARTS BY A PULSED ELECTROMAGNETIC FIELD Viktors Mironovs, Vjaceslavs Zemcenkovs, Riga Technical university, Latvia Matthias Kolbe, University of Applied Science Zwickau, Germany |
| 12.05–12.20 | THE CONCEPT OF BLAST FREEZING WITH ADDITIONAL EXPOSURE TO AN ELECTROMAGNETIC FIELD Peteris Rudzitis, Jekaterina Kuzmina, Viktors Mironovs, Vjaceslavs Zemcenkovs, Riga Technical university, Latvia, Vadims Sokolovs, LTD "Freezerbergs", Jurmala, Latvia |
| 12.20–12.35 | POSSIBILITY OF DIFFERENTIAL ASSESSMENT OF FAT AND WATER CONTENTS IN MEAT BY ULTRASONIC MEASUREMENTS Alexey Tatarinov, Jekaterina Kuzmina, Viktors Mironovs, Riga Technical university, Latvia |
| 12.35–12.50 | CORRELATION BETWEEN KNEE ACCELERATION AND PLANTAR PRESSURE ESTIMATION BY SMART SOCKS Pauls Daugulis, Alexei Katashev, Aleksandrs Okss, Riga Technical university, Latvia |
| 12.50–13.05 | INFLUENCE OF UV IRRADIATION ON IMMOBILIZATION OF YEAST CELLS ON THE SURFACES OF MG- AND TI-BASED ALLOYS AND THEIR CAP COATINGS* Marks Gorohovs, Anna Bystrova, Yuri Dekhtyar, Riga Technical university, Latvia Galina Khroustalyova, University of Latvia, Latvia * This work was supported by the ERA.Net RUS Plus – INNOVATION program (Project RUS_INNO2017-031-CoatDegraBac). |
| 13.05–13.20 | EFFECT OF A STRONG PULSED MAGNETIC FIELD ON YEAST CELLS Dainis Kivkucans, Yuri Dekhtyar, Riga Technical university, Latvia Galina Khroustalyova, University of Latvia, Latvia |
| 13.20 | CLOSURE, DISCUSSIONS |



RĪGAS TEHNISKĀ
UNIVERSITĀTE

RTU 64. starptautiskā zinātniskā
konference

Otrdiena,
17. oktobris

Ķīpsalas ielā 6A,
243. auditorija
Pasākuma valoda –
angļu

PROGRAMMA

Būvniecība 1

SEKCIJAS VADĪTĀJS

Mārtiņš Vilnītis, Rīgas Tehniskā
universitāte, Latvija

Dr. sc. ing. **Sandris Ručevskis**,
Rīgas Tehniskā universitāte,
Latvija

Dr. sc. ing. **Ainārs Paeglītis**,
Rīgas Tehniskā universitāte,
Latvija

ZINĀTNISKĀ KOMISIJA

Dr. sc. ing. **Anatolijs
Borodiņecs**, Rīgas Tehniskā
universitāte, Latvija

Dr. sc. ing. **Andris Čate**,
Rīgas Tehniskā universitāte,
Latvija

Dr. sc. ing. **Leonīds
Pakrastiņš**, Rīgas Tehniskā
universitāte, Latvija

12.00–12.05 **ATKLĀŠANA**
Mārtiņš Vilnītis, Rīgas Tehniskā universitāte, Latvija

12.05–12.35 **PAPLAŠINĀTA REALITĀTE KULTŪRAS MATERIĀLĀ UN NEMATERIĀLĀ MANTOJUMA
IZMANTOŠANAS UN UZLABOŠANAS JOMĀ**
Lucio Tommaso De Paolis, Salento Universitāte, Itālija

12.35–13.05 **FEM MODEĻA ATJAUNINĀŠANA UN KONSTRUKCIJU ROBEŽANALĪZE:
SAISTĪTĀ PIEEJA KONSTRUKCIJU STĀVOKĻA UZRAUDZĪBAI**
Rosalba Ferrari, Bergamo Universitāte, Itālija

13.05–14.15 **KAFIJAS PAUZE**

14.15–14.30 **DAŽAS ĢEOMĀTIKAS METODES ARHEOLOĢIJAI UN KULTŪRAS MANTOJUMAM**
Maria Grazia D'Urso, Bergamo Universitāte, Itālija

14.30–14.45 **TELPISKIE DIGITĀLIE DVĪŅI ŠODIEN UN RĪT**
Māris Kaļinka, Rīgas Tehniskā universitāte, Latvija

14.45–15.00 **3D DRUKĀŠANA PIELIETOŠANAI BŪVNICĪBĀ – ŠĪ BRĪŽA AKTUĀLIE PROJEKTI RTU**
Genādijs Šahmenko, Rīgas Tehniskā universitāte, Latvija

15.00–15.15 **OPTIMĀLA IEKŠTELPU GAISA KVALITĀTES UN SILTUMA KOMFORTA KONTROLE,
PAMATOJOTIES UZ TELPAS REĀLLAIKA 3D SKENĒŠANAS DATIEM**
Jurģis Zemītis, Rīgas Tehniskā universitāte, Latvija

15.15–15.30 **PROFILĒTAS UN SALIKTAS RIBOTAS SIENIŅAS TĒRAUDA SIJU EFEKTIVITĀTES
SALĪDZINĀJUMS**
Deivis Baranovskis, Rīgas Tehniskā universitāte, Latvija

15.30–15.45 **ILGTSPĒJĪGU BŪVMATERIĀLU IZPĒTE SADARBĪBĀ AR INDUSTRIJU**
Ģirts Būmanis, Rīgas Tehniskā universitāte, Latvija

15.45–16.00 **BIOSAISTVIELU AUTOCEĻU SEGUMIEM IZSTRĀDE, DAĻĒJI AIZVIETOJOT
FOSILĀS IZCELSMES BITUMENU**
Viktors Haritonovs, Rīgas Tehniskā universitāte, Latvija

16.00–16.15 **GRUNTS BĪDES MODUĻA NOTEIKŠANAS IESPĒJAS LATVIJĀ**
Māris Krievāns, Rīgas Tehniskā universitāte, Latvija

16.15 **NOSLĒGUMS, DISKUSIJAS**



RIGA TECHNICAL
UNIVERSITY

64th International Scientific Conference
of Riga Technical University

Tuesday,
October 17

6A Kipsalas Street,
Room 243
Language
of the event – English

PROGRAMME

Civil Engineering 1

HEAD OF THE SECTION

Dr. sc. ing. **Martins Vilnitis**,
Riga Technical University,
Latvia

Dr. sc. ing. **Sandris Rucevskis**,
Riga Technical University,
Latvia

Dr. sc. ing. **Ainars Paeglitis**,
Riga Technical University,
Latvia

SCIENTIFIC COMMITTEE

Dr. sc. ing. **Anatolijs
Borodinecs**, Riga Technical
University, Latvia

Dr. sc. ing. **Andris Chate**, Riga
Technical University, Latvia

Dr. sc. ing. **Leonids
Pakrastins**, Riga Technical
University, Latvia

| | |
|-------------|---|
| 12.00–12.05 | OPENING Martins Vilnitis, Riga Technical University, Latvia |
| 12.05–12.35 | EXTENDED REALITY FOR THE FRUITION AND THE ENHANCEMENT OF CULTURAL TANGIBLE AND INTANGIBLE HERITAGE Lucio Tommaso De Paolis, University of Salento, Italy |
| 12.35–13.05 | FEM MODEL UPDATING AND LIMIT ANALYSIS OF STRUCTURES: A COUPLED APPROACH TOWARD STRUCTURAL HEALTH MONITORING Rosalba Ferrari, University of Bergamo, Italy |
| 13.05–14.15 | BREAK |
| 14.15–14.30 | SOME GEOMATIC TECHNIQUES FOR THE ARCHAEOLOGY AND THE CULTURAL HERITAGE Maria Grazia D'Urso, University of Bergamo, Italy |
| 14.30–14.45 | SPATIAL DIGITAL TWINS TODAY AND TOMORROW Maris Kalinka, Riga Technical University, Latvia |
| 14.45–15.00 | 3D PRINTING FOR USE IN CONSTRUCTION - CURRENT PROJECTS AT RTU Genadijs Sahmenko, Riga Technical University, Latvia |
| 15.00–15.15 | OPTIMAL CONTROL OF INDOOR AIR QUALITY AND THERMAL COMFORT BASED ON ROOM REAL-TIME 3D MOTION SCANNING DATA Jurgis Zemitis, Riga Technical University, Latvia |
| 15.15–15.30 | EFFICIENCY COMPARISON OF PLATED STIFFENED AND CORRUGATED WEB BEAMS Deivis Baranovskis, Riga Technical University, Latvia |
| 15.30–15.45 | DEVELOPMENT OF SUSTAINABLE BUILDING MATERIALS IN COMPLIANCE WITH INDUSTRY NEEDS Girts Bumanis, Riga Technical University, Latvia |
| 15.45–16.00 | DEVELOPMENT OF BIO-BINDERS CAPABLE OF PARTIALLY REPLACING CONVENTIONAL FOSSIL-BASED BITUMEN IN ROAD PAVEMENTS Viktors Haritonovs, Riga Technical University, Latvia |
| 16.00–16.15 | POSSIBILITIES OF SOIL SHEAR MODULUS DETERMINATION IN LATVIA Maris Krievans, Riga Technical University, Latvia |
| 16.15 | CLOSURE, DISCUSSIONS |



RĪGAS TEHNISKĀ
UNIVERSITĀTE

RTU 64. starptautiskā zinātniskā
konference

Ceturtdiena,
19. oktobris

Ķīpsalas ielā, 6A,
345. auditorija
Pasākuma valoda –
latviešu

PROGRAMMA

Būvniecība 2

SEKCIJAS VADĪTĀJS

Sandris Ručevskis, Rīgas
Tehniskā universitāte, Latvija

Dr. sc. ing. **Aleksandrs Korjakins**,
Rīgas Tehniskā universitāte,
Latvija

Dr. sc. ing. **Diāna Bajāre**,
Rīgas Tehniskā universitāte,
Latvija

Dr. sc. ing. **Jānis Kaminskis**,
Rīgas Tehniskā universitāte,
Latvija

ZINĀTNISKĀ KOMISIJA

Ph. D. **Līva Pupure**,
Rīgas Tehniskā universitāte,
Latvija

Dr. sc. ing. **Jurģis Zemītis**,
Rīgas Tehniskā universitāte,
Latvija

Dr. sc. ing. **Andris Čate**,
Rīgas Tehniskā universitāte,
Latvija

Dr. sc. ing. **Aleksejs Mironovs**,
Rīgas Tehniskā universitāte,
Latvija

Dr. sc. ing. **Andīna Sprince**,
Rīgas Tehniskā universitāte,
Latvija

Dr. sc. ing. **Anatolijs
Borodiņecs**, Rīgas Tehniskā
universitāte, Latvija

10.00–10.10 **ATKLĀŠANA**
Sandris Ručevskis, Rīgas Tehniskā universitāte, Latvija

10.10–10.30 **ENERGOEFĒKĪVITĀTES NOVĒRTĒJUMI NO JAUNA, EKOLOĢISKA,
PUTOTA ĢEOPOLIMĒRA VEIDOTĀM BŪVĒM**
Līga Radiņa, Rīgas Tehniskā universitāte, Latvija

10.30–10.50 **GUMIJAS GRANULU IZMANTOŠANA KOMPOZĪTBETONĀ,
AIZSTĀJOT SMILTIS KĀ PILDVIELU DAŽĀDĀS TILPUMA PROPORCIJĀS**
Ģirts Kolendo, Rīgas Tehniskā universitāte, Latvija

10.50–11.10 **JONOSFĒRAS IZMAIŅU NOTEIKŠANA AR LOFAR LV614
ASTRONOMISKO RADIO AVOTU NOVĒROJUMOS**
Jānis Šteinbergs, Rīgas Tehniskā universitāte, Latvija

11.10–11.30 **INOVATĪVI KOKA SAVIENOJUMI HIBRĪDA KOKA-TĒRAUDA-BETONA RĀMJIEM**
Elvijs Bojārs, Rīgas Tehniskā universitāte, Latvija

11.30–11.50 **CENTRALIZĒTĀS SILTUMAPGĀDES SISTĒMAS IZMANTOTAŠANA SILTUMENERĢIJAS
UZGLABĀŠANAI DECENTRALIZĒTIEM SAULES KOLEKTORIEM**
Raimonds Bogdanovičs, Rīgas Tehniskā universitāte, Latvija

11.50–12.10 **KAFIJAS PAUZE**

12.10–12.30 **PJEZOELEKTRISKO PLĒVES TIPĀ SENSORU IZMANTOŠANAS PAMATOJUMS
KONSTRUKCIJAS TEHNISKĀ STĀVOKĻA UZRAUDZĪBAI UN
TO ĪPAŠĪBU ATKARĪBA NO TEMPERATŪRAS**
Aleksejs Safonovs, Rīgas Tehniskā universitāte, Latvija

12.30–12.50 **ILGTSPĒJĪGA DZĪVOJAMĀ SEKTORA ATTĪSTĪBA**
Līga Puzule, Rīgas Tehniskā universitāte, Latvija

12.50–13.10 **TERMISKĀS APSTRĀDES IETEKME UZ HIDRATĒTAS CEMENTA PASTAS REAKTIVIZĀCIJU**
Pauls P. Ārgalis, Rīgas Tehniskā universitāte, Latvija

13.10–13.30 **IEKŠTELPU GAISA TEMPERATŪRAS UN MITRUMA SVARSTĪBAS
13. GADSIMTA BAZNĪCĀS LATVIJĀ**
Mārtiņš Metāls, Rīgas Tehniskā universitāte, Latvija

13.30 **NOSLĒGUMS, DISKUSIJAS**



**RIGA TECHNICAL
UNIVERSITY**

64th International Scientific Conference
of Riga Technical University

**Thursday,
October 19**

**6A Kipsalas Street,
Room 345
Language
of the event – Latvian**

PROGRAMME

Civil Engineering 2

HEAD OF THE SECTION

Dr. sc. ing. **Sandris Rucevskis**,
Riga Technical University,
Latvia

Dr. sc. ing. **Aleksandrs
Korjakins**, Riga Technical
University, Latvia

Dr. sc. ing. **Diana Bajare**, Riga
Technical University,
Latvia

Dr. sc. ing. **Janis Kaminskis**,
Riga Technical University,
Latvia

SCIENTIFIC COMMITTEE

Ph. D. **Liva Pupure**,
Riga Technical University,
Latvia

Dr. sc. ing. **Jurgis Zemitis**,
Riga Technical University,
Latvia

Dr. sc. ing. **Andris Chate**,
Riga Technical University,
Latvia

Dr. sc. ing. **Aleksejs Mironovs**,
Riga Technical University,
Latvia

Dr. sc. ing. **Andina Sprince**,
Riga Technical University,
Latvia

Dr. sc. ing. **Anatolijs
Borodinecs**, Riga Technical
University, Latvia

10.00–10.10 **OPENING**
Sandris Rucevskis, Riga Technical University, Latvia

10.10–10.30 **ENERGY EFFICIENCY ASSESSMENTS OF NEW, ECOLOGICAL,
FOAM GEOPOLYMER BUILDINGS**
Liga Radina, Riga Technical University, Latvia

10.30–10.50 **END-OF-LIFE TYRE CRUMB RUBBER UTILIZATION IN CEMENT COMPOSITION,
REPLACING SAND AS AGGREGATE IN VARIOUS PROPORTIONS BY VOLUME**
Girts Kolendo, Riga Technical University, Latvia

10.50–11.10 **INVESTIGATING THE USE OF ASTRONOMICAL RADIO SOURCES TO MONITOR
IONOSPHERIC VARIABILITY USING LOFAR LV614**
Janis Steinbergs, Riga Technical University, Latvia

11.10–11.30 **NOVEL TIMBER CONNECTIONS FOR HYBRID TIMBER-STEEL-CONCRETE FRAME**
Elvijs Bojars, Riga Technical University, Latvia

11.30–11.50 **DISTRICT HEATING SYSTEM USED AS HEAT STORAGE FOR DECENTRALIZED
SOLAR THERMAL COLLECTORS**
Raimonds Bogdanovics, Riga Technical University, Latvia

11.50–12.10 **COFFEE BREAK**

12.10–12.30 **JUSTIFICATION FOR THE USE OF PIEZOELECTRIC FILM SENSORS FOR STRUCTURAL
HEALTH MONITORING AND DEPENDENCE OF THEIR PROPERTIES ON TEMPERATURE**
Aleksejs Safonovs, Riga Technical University, Latvia

12.30–12.50 **SUSTAINABLE DEVELOPMENT OF THE HOUSING SECTOR**
Liga Puzule, Riga Technical University, Latvia

12.50–13.10 **EFFECT OF HEAT TREATMENT ON THE REACTIVATION OF HYDRATED CEMENT PASTE**
Pauls P. Argalis, Riga Technical University, Latvia

13.10–13.30 **PRELIMINARY STUDY ON INDOOR AIR TEMPERATURE AND MOISTURE BEHAVIOUR
IN 13TH-CENTURY CHURCHES IN LATVIA**
Martins Metals, Riga Technical University, Latvia

13.30 **CLOSURE, DISCUSSIONS**



RIGA TECHNICAL
UNIVERSITY

64th International Scientific Conference
of Riga Technical University

Friday,
20 October

6A Kipsalas Street,
auditorium 543,
on-site & online

<https://rtucloud1.zoom.us/j/99309290915>

PROGRAMME

Civil Engineering

HEAD OF THE SECTION

Dr. sc. ing. **M. Vilnītis**, Riga
Technical University, Latvia

Subsection "Geomatics"

SUBSECTION CHAIR

Dr. sc. ing. **Jānis Kaminskis**,
Riga Technical University,
Latvia

Dr. **A. Kamburov**, University
of Mining and Geology St.
Ivan Rilski, Bulgaria

Dr. sc. ing. **J. Zvirgzds**, Riga
Technical University, Latvia

SCIENTIFIC COMMITTEE

Dr. sc. ing. **M. Kalinka**, Riga
Technical University, Latvia

Dr. sc. ing. **A. Celms**, Latvia
University of Life Sciences
and Technologies, Latvia

Dr. sc. ing. **E. Paršeliūnas**,
Vilnius Tech, Lithuania

Dr. ing. **J. Sužiedelytė
Visockienė**, Vilnius Tech,
Lithuania

Dr. **A. Ellmann**, Tallinn
University of Technology,
Estonia

Language of the event – Latvian

10.00–10.10 OPENING SPEECH (FROM LATVIA)

10.10–10.20 ESTABLISHMENT OF A GROUP OR COMMITTEE OF NKG (NORDIC GEODETIC COMMISSION) LATVIAN THOUGHT MATES AND ITS POSSIBLE DEVELOPMENT

A. Celms, Latvia University of Life Sciences and Technologies, Latvia
J. Kaminskis, Riga Technical University, Latvia
G. Silabriedis, University of Latvia, Latvia

10.20–10.35 REGIONAL BENEFITS OF THE BALMARGRAV PROJECT AND DEVELOPMENT OF A COOPERATION NETWORK FOR A UNIFIED HEIGHT SYSTEM

J. Kaminskis, Riga Technical University, Latvia
L. Sulakova, Riga Technical University, Latvia

10.35–10.50 SETTING CONSTRUCTION AXES

K. Plavarajs, Riga Technical University, Latvia

10.50–11.05 PUBLISHING TOPOGRAPHIC INFORMATION OF HIGH DETAILED ELABORATION DATA TO CESIUM PLATFORM

S. Adamsons, Riga Technical University, Latvia

11.05–11.20 ADVANTAGES AND DISADVANTAGES OF SLAM LASER SCANNER AGAINST TSL LASER SCANNER IN SMALL AND BIG INDOOR SPACES

K. Auznieks, Riga Technical University, Latvia

11.20–11.35 QUASI-GEOID RIGA'20 COMPATIBILITY WITH THE CITY'S LOCAL GEODETIC NETWORK

J. Kucins, Riga Technical University, Latvia

11.35–11.50 MOBILE SCANNER AND LOCAL GEODETIC NETWORK

D. Sarovs, Riga Technical University, Latvia

11.50–12.05 REVIEW OF THE WORLD METHOD OF GEOMAGNETIC MEASUREMENT

A. Zjatkovs, Riga Technical University, Latvia

12.05–12.20 FUNCTIONALITY AND RELEVANCE OF SEXTANT IN THE 21ST CENTURY

K. Berzins, Riga Technical University, Latvia

12.20 DISCUSSIONS & NETWORKING



RĪGAS TEHNISKĀ
UNIVERSITĀTE

RTU 64. starptautiskā zinātniskā
konference

Pirmdiena,
16. oktobris

Kronvalda bulv. 1,
112. auditorija

E-studiju tehnoloģijas

SEKCIJAS VADĪTĀJS

Atis Kapenieks, Rīgas Tehniskā
universitāte, Latvija

Dr. sc. ing. **Ginta Majore**,
Vidzemes Augstskola, Latvija

Dr. paed. **Jānis Kapenieks**
(sen.), Rīgas Tehniskā
universitāte, Latvija

Dr. sc. ing. **Arnis Cīrulis**,
Vidzemes Augstskola, Latvija

ZINĀTNISKĀ KOMISIJA

Dr. sc. ing. Aleksandrs
Gorbunovs, Rīgas Tehniskā
universitāte, Latvija

Dr. sc. ing. **Anita Jansone**,
Liepājas Universitāte, Latvija

Dr. paed. **Lāsma Ulmane-
Ozoliņa**, Liepājas
Universitāte, Latvija

Dr. sc. ing. **Artis Teilāns**,
Rēzeknes Tehnoloģiju
akadēmija

9.00–9.10

ATKLĀŠANA

Atis Kapenieks, Rīgas Tehniskā Universitāte, Latvija

9.10–9.30

**ZINĀŠANU IZPLATĪŠANAS MĀCĪŠANĀS GRUPĀS (KOPIENĀS) SAISTĪBA AR
SKOLOTĀJU GATAVĪBU ATTĀLINĀTĀM MĀCĪBĀM 2020.–2021. GADA PANDĒMIJAS LAIKĀ**
Evija Mirķe, Rīgas Tehniskā universitāte, Latvija

9.30–9.50

**NOVATORISKĀS MOBILĀS APLIKĀCIJAS IZSTRĀDE LATVIEŠU VALODAS EFEKTĪVAI
APGŪŠANAI DAŽĀDA VECUMA GRUPĀS ĀRVALSTU PĀRSTĀVJU INTEGRĀCIJAI LATVIEŠU
KULTŪRĀ UN SABIEDRĪBĀ, KĀ ARĪ LATVIEŠU KULTŪRAS MANTOJUMA SAGLABĀŠANAI**
Valērija Markeviča, Rīgas Tehniskā universitāte, Latvija

9.50–10.10

**E-TEHNOLOĢIJĀS BALSTĪTS PEDAGOĢISKĀ PROCESA E-EKOSISTĒMAS MODELIS
INTENSĪVĀM IZLĪDZINOŠĀM MĀCĪBĀM FIZIKĀ**
Loreta Juškaite, Rīgas Tehniskā universitāte, Latvija

10.10–10.30

PAUZE

10.30–10.50

**LINGVAKULTŪRAS UN SOCIOLINGVISTISKO ĪPATNĪBU EKOLINGVISTISKIE PAMATI UZ
UZDEVUMIEM BALSTĪTAS TIEŠSAISTES APMĀCĪBAS PAMATA STARPTAUTISKAJĀ
ESL KLASĒ**
Rita Feigina, Rīgas Tehniskā universitāte, Latvija

10.50–11.10

DIGITĀLĀS PRAKSES MODEĻA IZVEIDES AUGSTĀKĀS IZGLĪTĪBAS IEGŪŠANAI PROCESS
Inete Ielīte, Rīgas Tehniskā universitāte, Latvija; NVO "Sieviešu sadarbības tīkls", Latvija

11.10–11.30

TĀLMĀCĪBAS IESPĒJAS JŪRNICĪBAS IZGLĪTĪBĀ AR ES PROJEKTU ATBALSTU
Inese Barbare, Latvijas Jūras akadēmija; Rīgas Tehniskā universitāte, Latvija

11.30–11.50

PAUZE

11.50–12.10

KOOPERATĪVĀS MĀCĪŠANĀS METOŽU PIELIETOŠANA E-STUDIJU VIDĒ
Alīna Vagele-Kricina, Rīgas Tehniskā universitāte, Latvija

12.10–12.30

SPECIALIZĒTO TEKSTU TULKOŠANAS PROCESA PĒTĪJUMS
Oksana Ivanova, Rīgas Tehniskā universitāte, Latvija

12.30

NOSLĒGUMS, DISKUSIJAS



RIGA TECHNICAL
UNIVERSITY

64th International Scientific Conference
of Riga Technical University

Monday,
October 16

1 Kronvalda Boulevard,
Room No. 112

PROGRAMME

E-Study Technologies

HEAD OF THE SECTION

Dr. phys. **Atis Kapenieks**,
Riga Technical University,
Latvia

Dr. sc. ing. **Ginta Mojore**,
Vidzeme University of
Applied Sciences, Latvia

Dr. paed. **Jānis Kapenieks
(sen.)**, Riga Technical
University, Latvia Dr. sc. ing.

SCIENTIFIC COMMITTEE

Arnis Cīrulis, Vidzeme
University of Applied
Sciences, Latvija

Dr. sc. ing. **Aleksandrs
Gorbunovs**, Riga Technical
University, Latvia

Dr. sc. ing. **Anita Jansone**,
Liepaja University, Latvija

Dr. paed. **Lāsma Ulmane-
Ozoliņa**, Liepaja University,
Latvija

Dr. sc. ing. **Artis Teilans**,
Rezekne Academy of
Technologies

9.00–9.10 **OPENING AND WELCOME ADDRESSES**
Atis Kapenieks, Riga Technical University, Latvia

9.10–9.30 **KNOWLEDGE DISTRIBUTION IN LEARNING GROUPS (COMMUNITIES) IN RELATIONSHIP WITH THE READINESS OF TEACHERS FOR DISTANCE LEARNING DURING THE 2020-2021 PANDEMIC**
Evija Mirke, Riga Technical University, Latvia

9.30–9.50 **DEVELOPMENT OF AN INNOVATIVE MOBILE APPLICATION FOR EFFECTIVE LEARNING OF THE LATVIAN LANGUAGE BY DIFFERENT AGE GROUPS, INTEGRATION OF FOREIGN REPRESENTATIVES INTO LATVIAN CULTURE AND SOCIETY, AND PRESERVATION OF LATVIAN CULTURAL HERITAGE**
Valerija Markevica, Riga Technical University, Latvia

9.50–10.10 **E-ECOSYSTEM MODEL OF THE PEDAGOGICAL PROCESS BASED ON E-TECHNOLOGIES FOR INTENSIVE COMPENSATION TEACHING IN PHYSICS LORETA JUSKAITE, RIGA TECHNICAL UNIVERSITY, LATVIA**

10.10–10.30 **BREAK**

10.30–10.50 **ECOLINGUISTIC FOUNDATIONS TO LINGUACULTURAL AND SOCIOLINGUISTIC PECULIARITIES OF TASK-BASED ONLINE TEACHING IN THE INTERNATIONAL ESL CLASSROOM**
Rita Feigina, Riga Technical University, Latvia

10.50–11.20 **DEVELOPING THE DIGITAL INTERNSHIP MODEL FOR HIGHER EDUCATION**
Inete Ielite, Riga Technical University, Latvia; Women's NGOs Cooperation Network, Latvia

11.10–11.30 **DISTANCE LEARNING OPPORTUNITIES IN MARITIME EDUCATION WITH THE SUPPORT OF EU PROJECTS**
Inese Barbare, Latvian Maritime Academy, Riga Technical University, Latvia

11.30–11.50 **BREAK**

11.50–12.10 **THE APPLICATION OF COLLABORATIVE LEARNING METHODS IN E-LEARNING**
Alina Vagele-Kricina, Riga Technical University, Latvia

12.10–12.30 **SPECIALISED TRANSLATION PROCESS RESEARCH**
Oksana Ivanova, Riga Technical University, Latvia

12.30 **CLOSURE, DISCUSSIONS**



RĪGAS TEHNISKĀ
UNIVERSITĀTE

RTU 64. starptautiskā zinātniskā
konference

Pirmdiena,
9. oktobris

Kronvalda bulvārī 1,
225. auditorijā

PROGRAMMA

Humanitārās un sociālās zinātnes

SEKCIJAS VADĪTĀJA

Dr. psych. **Airisa Šteinberga**,
Rīgas Tehniskā universitāte,
Latvija

Dr. paed. **Agita Ābele**,
Latvijas Sporta pedagoģijas
akadēmija, Latvija

Dr. phil. **Signe Dobelniece**,
Latvijas Biozinātņu un
tehnoloģiju universitāte,
Latvija

Dr. sc. pol. **Saule Omarova**,
Kornela Universitāte, ASV

ZINĀTNISKĀ KOMISIJA

Dr. sc. soc. **Gunārs Ozolzīle**,
Rīgas Tehniskā universitāte,
Latvija

Dr. phil. **Peeter Mūrsepp**,
Tallinas Tehnoloģiju
universitāte, Igaunija

Dr. philol. **Marina Platonova**,
Rīgas Tehniskā universitāte,
Latvija

Dr. psych. **Airisa Šteinberga**,
Rīgas Tehniskā universitāte,
Latvija

Dr. sc. soc. **Tālis Tisenkopfs**,
Latvijas Universitāte, Latvija

Dr. paed. **Alīda Zigmunde**,
Rīgas Tehniskā universitāte,
Latvija

13.00–13.10

ATKLĀŠANA

Airisa Šteinberga, Rīgas Tehniskā universitāte, Latvija

13.15–13.30

STUDENTI AR CEPURĒM GALVĀ AUGSTSKOLU TELPĀS – PIEKLĀJĪBAS NORMA VAI NĒ?

Alīda Zigmunde, Rīgas Tehniskā universitāte, Elīta Stikute, Latvijas Universitāte, Latvija

13.30–13.45

SĀKUMSKOLAS PEDAGOGU UN ADMINISTRĀCIJAS ĒTISKIE RISKI UN METODES, VEICOT EFEKTĪVU DARBU AR SKOLĒNIEM AR UZVEDĪBAS TRAUCĒJUMIEM

Ērika Lanka, Latvijas Universitāte, Latvija

13.45–14.00

PAR VĒLĒŠANU SISTĒMAS REFORMU LATVIJĀ

Gunārs Ozolzīle, Rīgas Tehniskā universitāte, Latvija

14.00–14.15

IZAICINĀJUMI STUDIJU PROCESA ORGANIZĀCIJĀ MŪSDIENU AUGSTĀKAJĀ IZGLĪTĪBĀ

Roberta Šteinberga, Rīgas Tehniskā universitāte, Latvija

14.15–14.30

E-STUDIJU TEHNOLOĢIJĀS BALSTĪTS INTENSĪVO IZLĪDZINOŠO MĀCĪBU (IIM) MODELIS FIZIKĀ

Loreta Juškaite, Rīgas Tehniskā universitāte, Latvija

14.30–14.45

KAFIJAS PAUZE

14.45–15.00

SKOLĒNU FIZISKĀS AKTIVITĀTES SKOLAS VIDĒ: PIEEJAMĪBA, PROBLĒMAS, RISINĀJUMI

Antra Gulbe, Latvijas Sporta pedagoģijas akadēmija, Latvija

15.00–15.15

UZTURINĀŠANU NOZĪME SABALANSĒTA UZTURA IZVĒLĒ FIZISKI AKTĪVU RESPONDENTU GRUPĀ

Liāna Pļaviņa, Lāsma Asare, Rīgas Stradiņa universitāte, Latvija

15.15–15.30

"DERUSIFIKĀCIJAS" PSIHOLINGVISTISKIE ASPEKTI

Laila Girsava, Rīgas Tehniskā universitāte, Latvija

15.30–15.45

ROBERTA ŠTERNBERGA KOGNITĪVO STILU TESTA STANDARTIZĀCIJA UN APROBĀCIJA LATVIJĀ

Anete Hofmane, Lelde Barone, Airisa Šteinberga, Maija Zakriževska-Belogrudova, Rīgas Tehniskā universitāte, Latvija

15.45–16.00

PROBLEMĀTIKA PAŠVALDĪBU SABIEDRISKO ATTIECĪBU SPECIĀLISTU PROFESIONĀLAJĀ DARBĪBĀ

Renāte Cāne, Jana Bunkus, Biznesa augstskola Turība, Latvija

16.00–16.15

STANDARTAM BŪTISKU PATENTU PROBLEMĀTIKA

Liene Vindele, Rīgas Stradiņa universitāte, Renāte Cāne, Biznesa augstskola Turība, Latvija

16.15–16.30

SOCIĀLO TĪKLU PSIHOLOĢIJA: IETEKME UZ UZVEDĪBU UN SEVIS UZTVERI

Kristīne Samuilika, Elīna Rijniece, Aleksandra Siniegubova, Rīgas Tehniskā universitāte, Latvija

16.30

NOSLĒGUMS, DISKUSIJAS



RIGA TECHNICAL
UNIVERSITY

64th International Scientific Conference
of Riga Technical University

Monday,
October 9

1 Kronvalda Boulevard,
Room 225

PROGRAMME

Humanitaries and social sciences

HEAD OF THE SECTION

Dr. psych. **Airisa Šteinberga**,
Riga Technical University,
Latvia

Dr. paed. **Agita Ābele**,
Latvian Academy of Sport
Education, Latvia

Dr. phil. **Signe Dobelniece**,
Latvia University of Life
Sciences and Technologies,
Latvia

Dr. sc. pol. **Saule Omarova**,
Cornell University, USA

SCIENTIFIC COMMITTEE

Dr. sc. soc. **Gunārs Ozolzīle**,
Riga Technical University,
Latvia

Dr. phil. **Peeter Mürsepp**,
Tallinn University of
Technology, Estonia

Dr. philol. **Marina Platonova**,
Riga Technical University,
Latvia

Dr. psych. **Airisa Šteinberga**,
Riga Technical University,
Latvia

Dr. sc. soc. **Tālis Tisenkopfs**,
University of Latvia, Latvia

Dr. paed. **Alīda Zigmunde**,
Riga Technical University,
Latvia

13.00–13.10 **OPENING AND WELCOME ADDRESSES**
Airisa Šteinberga, Riga Technical University, Latvia

13.15–13.30 **STUDENTS WITH HATS ON THEIR HEADS IN UNIVERSITY PREMISES –
A FORM OF POLITENESS OR NOT?**
Alīda Zigmunde, Riga Technical University, Elita Stikute, University of Latvia, Latvia

13.30–13.45 **ETHICAL RISKS AND METHODS OF ELEMENTARY SCHOOL TEACHERS AND
ADMINISTRATION IN EFFECTIVE WORK WITH STUDENTS WITH BEHAVIORAL
DISORDERS**
Ērika Lanka, University of Latvia, Latvia

13.45–14.00 **ON THE REFORM OF THE ELECTORAL SYSTEM IN LATVIA**
Gunārs Ozolzīle, Riga Technical University, Latvia

14.00–14.15 **CHALLENGES OF ORGANISING THE STUDY PROCESS IN MODERN HIGHER EDUCATION**
Roberta Šteinberga, Riga Technical University, Latvia

14.15–14.30 **E-LEARNING TECHNOLOGIES-BASED MODEL FOR SUPPORTING BRIDGE COURSES
IN PHYSICS**
Loreta Juškaite, Riga Technical University, Latvia

14.30–14.45 **COFFEE BREAK**

14.45–15.00 **STUDENTS PHYSICAL ACTIVITIES IN A SCHOOL ENVIRONMENT:
ACCESSIBILITY, PROBLEMS, SOLUTIONS**
Antra Gulbe, Latvian Academy of Sport Education, Latvia

15.00–15.15 **NUTRITIONAL EDUCATION IMPACT TO DIETARY INTAKE IN A GROUP OF
PHYSICALLY ACTIVE RESPONDENTS**
Liāna Pļaviņa, Lāsma Asare, Riga Stradiņš University, Latvia

15.15–15.30 **PSYCHOLINGUISTIC ASPECTS OF "DERUSIFICATION"**
Laila Girsova, Riga Technical University, Latvia

15.30–15.45 **ROBERT STERNBERG'S COGNITIVE STYLE TEST STANDARDIZATION AND
APPROBATION IN LATVIA**
Anete Hofmane, Lelde Barone, Airisa Šteinberga, Maija Zakriževska-Belogrudova,
Riga Technical University, Latvia

15.45–16.00 **ISSUES IN THE PROFESSIONAL ACTIVITY OF MUNICIPAL
PUBLIC RELATIONS SPECIALISTS**

Renāte Cāne, Jana Bunkus, Turība University, Latvia

16.00–16.15 **ISSUES OF LEGAL REGULATION OF STANDART ESSENTIAL PATENTS**

Liene Vindele, Riga Stradiņš University, Renāte Cāne, Turība University, Latvia

16.15–16.30 **PSYCHOLOGY OF SOCIAL NETWORKS: EFFECTS ON BEHAVIOR AND
SELF PERCEPTION**

Kristīne Samuilika, Elīna Rijniece, Aleksandra Siniegubova, Riga Technical University, Latvia

16.30 **CLOSURE, DISCUSSIONS**



**RIGA TECHNICAL
UNIVERSITY**

64th International Scientific Conference
of Riga Technical University

September
29, 2023

Online

PROGRAMME

Scientific Problems of Engineering Economics of Construction and Real Estate Management, Regional and Territorial Development

HEAD OF THE SECTION

Prof. Dr. **INETA GEIPELE**,
Riga Technical University,
Latvia

Prof. Dr. **INETA GEIPELE**,
Riga Technical University,
Latvia

Prof. Dr. **MAIJA SENFELDE**,
Riga Technical University,
Latvia

Prof. Dr. **JANIS VANAGS**,
Riga Technical University,
Latvia

Doc. Dr. **ANTRA KUNDZINA**,
Riga Technical University,
Latvia

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Prof. Dr. **FRANK
RIEMENSCHNEIDER-
GREIF**, Münster University of
Applied Sciences, Germany

Prof. Dr. **REINER JÄGER**,
Karlsruhe University of
Applied Sciences, Germany

Prof. Dr. **MICHAEL
TRÜBESTEIN** MRICS,
Lucerne University of
Applied Sciences and Arts,
Switzerland

Dr. **LORETA
KANAPECKIENE**, Vilnius
Gediminas Technical
University, Lithuania

Dr. **JURGA NAIMAVICIENE**,
Vilnius Gediminas Technical
University, Lithuania

Dr. **LAURA TUPENAITE**,
Vilnius Gediminas Technical
University, Lithuania

Dr. **KAMIL KOWALCZYK**,
University of Warmia and
Mazury in Olsztyn, Poland

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Riga Technical University,
Latvia

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University, Latvia

IVETA STAMURE, Mg.REM.,
Dipl.REM., Riga Technical
University, Latvia

Assoc. Prof. Dr.oec. **SANDA
LAPUKE**, Riga Technical
University, Latvia

JĀNIS ZVIRGZDINS,
Mg.oec., Bc.Sc.Ing., Riga
Technical University, Latvia

Friday, September 29

Join Zoom Meeting

<https://rtucloud1.zoom.us/j/92665460641?pwd=ZWVzR3hzcktTbmNjbzYrRWZlaHA2UT09>

Moderator:

**JANIS ZVIRGZDINS,
ANTRA KUNDZINA**

9.30–10.00 REGISTRATION OF PARTICIPANTS

10.00–10.40 WELCOME TO THE CONFERENCE

Martins Auders, Department of Housing Policy, Ministry of Economics, Latvia
Laura Tupenaite, Vilnius Gediminas Technical University, Lithuania
Rūta Bendere, Waste Management Association of Latvia, Latvia
Ineta Geipele, Riga Technical University, Latvia

10.40–13.00 CHALLENGES IN MODELLING THE IMPACT OF GREENER AND ENVIRONMENTALLY FRIENDLY SOLUTIONS APPLICATION IN LAST-MILE DELIVERY IN LATVIA: NATIONAL AND REGIONAL PERSPECTIVE

Astra Auzina-Emsina, Riga Technical University, Latvia

PRECONDITIONS OF DEVELOPMENT OF SUSTAINABLE SOLUTION FOR TRANSPORTATION SERVICES IN LATVIA

Valerijs Skribans, Riga Technical University, Latvia



Funded by the
Erasmus+ Programme
of the European Union



ASSESSMENT OF THE IMPACT OF ECONOMIC AND ADMINISTRATIVE INSTRUMENTS ON TRANSFORMATION TO A SUSTAINABLE MOBILITY

Maris Juruss, Riga Technical University, Latvia

Janis Brizga, University of Latvia, Latvia

OPPORTUNITIES FOR THE WOODEN PUBLIC BUILDINGS' DEVELOPMENT IN LITHUANIA

Jurga Naimaviciene, Dovile Muizinikiene, Laura Tupenaite, Loreta Kanapeckiene, Tomas Gecys, Vilnius Gediminas Technical University, Lithuania

MAIN RESULTS WITHIN CLI-MA PROJECT WITH REGARD TO IMPROVE ENERGY PERFORMANCE LEVEL OF RESIDENTIAL BUILDINGS

Antra Kundzina, Ineta Geipele, Iveta Stamure, Riga Technical University, Latvia

DIGITAL TWIN AS A TOOL FOR GREEN HYDROGEN PRODUCTION OPTIMIZATION

Leo Jansons, Ineta Geipele, Namejs Zeltins, Riga Technical University, Latvia

DIGITAL TWINS IN URBAN ENERGY COMMUNITIES: A DATA ACQUISITION AND PROCESSING MANAGEMENT PROBLEM

Leo Jansons, Ineta Geipele, Namejs Zeltins, Valerijs Skribans, Riga Technical University, Latvia

THE CONCEPT OF ENERGY COMMUNITIES IN THE EUROPEAN UNION

Martins Auders, Ineta Geipele, Sanda Lapuke, Riga Technical University, Latvia

URBAN RENAISSANCE: NAVIGATING SUSTAINABLE URBANIZATION FOR REGIONAL PROSPERITY

Regina Veckalne, Tatjana Tambovceva, Riga Technical University, Riga, Latvia

ASSESSMENT OF IMPLEMENTATION OF CIRCULAR ECONOMY FRAMEWORK IN THE SRI LANKAN CONSTRUCTION SECTOR

Thilina Ganganath Weerakoon, Sulaksha Wimalasena, Sri Lanka Institute of Information Technology, Sri Lanka

Janis Zvirgzdins, Riga Technical University, Latvia

IDENTIFYING POTENTIAL HOUSEHOLD WASTE AS SECONDARY RAW MATERIALS IN THE CONSTRUCTION INDUSTRY: A CASE STUDY OF SRI LANKA

Thilina Ganganath Weerakoon, Sulaksha Wimalasena, Sri Lanka Institute of Information Technology, Sri Lanka

Janis Zvirgzdins, Riga Technical University, Latvia

RETROSPECTION OF DEVELOPMENT OF CIRCULAR ECONOMY CONCEPT

Janis Zvirgzdins, Ineta Geipele, Sanda Lapuke, Riga Technical University, Latvia

FROM INDUSTRIAL REVOLUTION TO THE NEED OF CIRCULAR ECONOMY IMPLEMENTATION

Janis Zvirgzdins, Kaspars Plotka, Ineta Geipele, Riga Technical University, Latvia

13.00–13.30

LUNCH BREAK

13.30–16.00

UNDERLINING THE NEED OF CIRCULAR ECONOMY IN URBAN ENVIRONMENT

Janis Zvirgzdins, Kaspars Plotka, Ineta Geipele, Riga Technical University, Latvia

CONCEPTUALIZATION OF SYNERGY IN URBAN ENVIRONMENT

Kaspars Plotka, Riga Technical University, Latvia

THE PROCESS OF ABOLISHMENT OF MUNICIPALITY REAL ESTATE RIGHT OF FIRST REFUSAL IN LATVIA

Janis Viesturs, Armands Auzins, Riga Technical University, Latvia

EFFICIENCY AND EFFECTIVENESS IN BUSINESS AND BEYOND: CRITICAL AND ANALYTICAL APPROACH

Janis Vanags, Ineta Geipele, Riga Technical University, Latvia

VALUES OF HIGHER EDUCATION INSTITUTIONS: THEIR CRITICAL AND ANALYTICAL EVALUATION

Janis Vanags, Ineta Geipele, Riga Technical University, Latvia

THE CONTEMPORARY DYNAMICS OF QUANTITATIVE EFFECTS OF BUSINESS PARTNERSHIPS OF CONSTRUCTION ENTERPRISES

Janis Vanags, Ineta Geipele, Riga Technical University, Latvia

Andris Vanags, Turiba University, Latvia

TECHNOLOGICAL ADVANCEMENTS IN REAL ESTATE MANAGEMENT ASSISTANCE OF VIRTUAL 3D TOUR

Jurga Naimaviciene, Lina Leimontaite, Loreta Kanapeckiene, Laura Tupenaite, Vilnius Gediminas Technical University, Lithuania

LOW-RENT HOUSING CONSTRUCTION OPPORTUNITIES

Iveta Amolina, Riga Technical University, Latvia

SITUATION IN ENERGY CERTIFICATION OF RESIDENTIAL BUILDINGS IN LATVIA

Antra Kundzina, Sanda Lapuke, Riga Technical University, Latvia

THE EFFECT OF EXTERNAL AND INTERNAL FACTORS ON MANAGEMENT EFFECTIVENESS WITHIN INDIAN CONSTRUCTION COMPANIES

Rashmi Jaymin Sanchaniya, Cijo George Thomas, Ineta Geipele, Riga Technical University, Riga, Latvia

CIRCULAR ECONOMY STRATEGIES IN BUILDING DESIGN: PRIORITIZING SUSTAINABILITY THROUGH BEST-WORST DECISION-MAKING METHOD (BWM)

Soroush Saneimoghaddam, Janis Zvirgzdins, Sanda Lapuke, Riga Technical University, Latvia

ECONOMIC CRISIS ADAPTATION IN SRI LANKAN CONSTRUCTION: PATHWAY TO PROSPERITY

Thilina Ganganath Weerakoon, Sulaksha Wimalasena, Department of Civil Engineering, Sri Lanka Institute of Information Technology, Sri Lanka, Riga Technical University, Riga, Latvia

Kristine Fedotova, Riga Technical University, Riga, Latvia

COMPATIBILITY OF LVS EN 16310:2020 WITH CONSTRUCTION DESIGN METHODS

Janis Uzulens, Zanda Zarina, Jurisconsultus Ltd., Latvia

TECHNICAL CONDITION OF SOVIET-ERA APARTMENT BUILDINGS, RELATED PROBLEMS AND POSSIBLE SOLUTIONS IN LATVIA

Zanda Zarina, Janis Uzulens, Jurisconsultus Ltd., Latvia

DEVELOPMENT OF THE MUNICIPAL REAL ESTATE STRATEGY IN LATVIA

Liva Voitehovica, Antra Kundzina, Riga Technical University, Latvia

FACTORS INFLUENCING THE ADOPTION OF SMART BUILDING AND SERVICE PREFERENCES IN SRI LANKA

Thilina Ganganath Weerakoon, Sulaksha Wimalasena, Nivethan Moganaraj, Riga Technical University, Latvia

COMPARATIVE ANALYSIS OF THE CONSTRUCTION SECTOR OF LATVIA AND AZERBAIJAN

Regina Veckalne, Humbat Humbatov, Riga Technical University, Latvia

ENVIRONMENTALLY FRIENDLY CONSTRUCTION DEVELOPMENT STRATEGY IN LATVIA

Andris Dulbinskis, Kristine Fedotova, Riga Technical University, Latvia

THE CONSTRUCTION COST INDICES: THE CASE STUDY IN LATVIA

Ineta Geipele, Janis Kaminskis, Riga Technical University, Latvia

DISTINCTIVE CHARACTERISTICS OF CONSTRUCTION MATERIALS AND THEIR EVALUATION APPROACHES IN LATVIA AND UKRAINE

Mariia Mykhalova, Kyiv National University of Construction and Architecture, Ukraine

Iveta Stamure, Sanda Lapuke, Riga Technical University, Latvia

MARINE CADASTRE AND SPATIAL PLANNING ASPECTS IN THE BALTIC SEA REGION: COMPARISON OF LATVIA AND POLAND

Kamil Kowalczyk, University of Warmia and Mazury in Olsztyn, Poland

Jānis Kaminskis, Iveta Stamure, Riga Technical University, Latvia

ANALYSIS OF MULTI-APARTMENT RESIDENTIAL HOUSING MANAGEMENT PROCESSES

Lelde Zvirbule, Civinity Ltd., Latvia, Riga Technical University, Latvia

Iveta Stamure, Riga Technical University, Latvia

Una Pavulane, Property management, Germany

PUBLIC REAL ESTATE MANAGEMENT IN THE UNITED KINGDOM

Raimonds Stamurs, IKEA Ltd., United Kingdom, Riga Technical University, Latvia

Ineta Geipele, Iveta Stamure, Sanda Lapuke, Riga Technical University, Latvia

DISCUSSIONS AND SUMMARY



RĪGAS TEHNISKĀ
UNIVERSITĀTE

RTU 64. starptautiskā zinātniskā
konference

Otrdiena,
10. oktobris

RTU Inženierzinātņu
vēstures pētniecības
centra ekspozīcijas
zāle, 119. telpa
Kronvalda bulvārī 1

PROGRAMMA

Inženierzinātņu un augstskolu vēsture

SEKCIJAS VADĪTĀJA

Profesore **ALĪDA ZIGMUNDE**,
Rīgas Tehniskā universitāte,
Latvija

Hung-yi Chien, Nacionālā
Cheng Kung universitāte,
Taivāna

Ph. D. (vēsture) **Martyn
Housden**, Bredfordas
Universitāte, Anglija

Dr. sc. ing. **Tālis Juhna**, Rīgas
Tehniskā universitāte

Dr. sc. ing. **Edgars Kirilovs**,
Rīgas Tehniskā universitāte,
Latvija

Dr. habil. arch. **Jānis Krastiņš**,
Rīgas Tehniskā universitāte,
Latvija

ZINĀTNISKĀ KOMISIJA

Dr. paed. **Aida Krūze**, Latvijas
Universitāte, Latvija

Dr. phil. (ķīmija) **Jānis
Lielmežs**, Britu Kolumbijas
Universitāte, Kanāda

Dr. phil. **Peeter Mūrsepp**,
Tallinas Tehnoloģiju
universitāte, Igaunija

Ph. D. (sociālās zinātnes)
Birute Raiļiene, Lietuvas
Zinātņu akadēmijas
Wroblewski bibliotēka,
Lietuva

Dr. habil. sc. ing. **Leonīds
Ribickis**, Rīgas Tehniskā
universitāte, Latvija

Dr. sc. ing. **Kaspars
Vārtukapteinis**, Latvijas
Lauksaimniecības
universitāte, Latvija

Dipl. ing. **Eckhard Spring**,
Mittelhesenas lietišķo zinātņu
universitāte, Vācija

Ph. D. (tehniskās zinātnes)
Virgilijus Valeika, Kauņas
Tehnoloģiju universitāte,
Lietuva

Dr. agr. **Victor Vergunov**,
Ukrainas Lauksaimniecības
zinātņu akadēmija, Ukraina

12.00–12.25 **REĢISTRĀCIJA.**

12.25–12.30 **ATKLĀŠANA.**
Ilze Gudro, Rīgas Tehniskā universitāte, Latvija

12.30–12.50 **ARHITEKTA EIŽENA LAUBES (1880–1967) KOKA NAMI.**
Jānis Kalniņš, Rīgas Tehniskā universitāte, Latvija

12.50–13.10 **LIDIJA HOFMANE-GRĪNBERGA (1898–1963) – VIENA NO PIRMAJĀM PROFESIONĀLAJĀM
ARHITEKTĒM LATVIJĀ.**
Alīda Zigmunde, Rīgas Tehniskā universitāte, Latvija

13.10–13.30 **NEZINĀMAIS PAR ARHITEKTI LIDIJU OSI (1922–1985).**
Ilze Gudro, Rīgas Tehniskā universitāte, Latvija

13.30–13.50 **ARHITEKTA AIVARA BĒRZIŅA UN DIZAINERA ANDRA GRĪNVALDA KIOSKI. DZĪVESGĀJUMU,
PROCESU UN STRĀVOJUMU KRUSTPUNKTI.**
Gustavs Grasis, RISEBA, Latvija

13.50–14.10 **TEHNISKO ZINĀTŅU TERMINOLOĢIJAS VEIDOŠANĀS LATVIEŠU VALODĀ NO 1919. LĪDZ 1944.
GADAM. IZPĒTES PROBLĒMAS.**
Māris Baltiņš, Valsts valodas centrs, Latvijas Universitāte, Latvija

14.10–14.30 **ASTRONOMS, PEDAGOGS, ASTEROĪDU PĒTNIĒKS MATĪSS DĪRIĶIS (1923–1993).**
Ilgonis Vilks, Gunta Vilka, Latvijas Universitāte, Latvija

14.30–14.50 **RĪGAS POLITEHNIKUMA / RĪGAS POLITEHNISKĀ INSTITŪTA PROFESORA HEINRIHA
MALHERA (1848–1927) DAUDZPUSĪGĀ DARBĪBA.**
Daniels Šellers, Rīgas Tehniskā universitāte, Latvija

14.50–15.10 **IZGUDROTĀJDARBĪBA LATVIJĀ GADSIMTA GARUMĀ (1923–2023).**
Ivans Griņevičs, Latvijas Izgudrotāju biedrība, Latvija



RIGA TECHNICAL
UNIVERSITY

64th International Scientific Conference
of Riga Technical University

Monday,
10 October

Exhibition Hall of RTU
Research Centre for
Engineering History,
Room 119 Kronvalda
Boulevard 1

PROGRAMME

History of Engineering Sciences and Institutions of Higher Education

HEAD OF THE SECTION

Professor **ALĪDA ZIGMUNDE**,
Riga Technical University,
Latvia

Hung-yi Chien, National
Cheng Kung University,
Taiwan

Ph. D. (history), **Martyn
Housden**, University of
Bradford, England

Dr. sc. ing. **Tālis Juhna**, Riga
Technical University, Latvia

Dr. sc. ing. **Edgars
Kirilovs**, Riga Technical
University, Latvia

Dr. habil. arch. **Jānis
Krastiņš**, Riga Technical
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University of Latvia, Latvia

Dr. phil. (chemistry) **Jānis
Lielmežs**, University of
British Columbia, Canada

Dr. phil. **Peeter Mürsepp**,
Tallinn University of
Technology, Estonia

Ph. D. (social sciences) **Birute
Railiene**, Wroblewski Library
of the Lithuanian Academy
of Sciences, Lithuania

Dr. habil. sc. ing. **Leonīds
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University, Latvia

Dr. sc. ing. **Kaspars
Vārtukapteinis**, Latvia
University of Agriculture,
Latvia

Dipl. ing. **Eckhard Spring**,
Mittelhessen University of
Applied Sciences, Germany

Ph. D. (technical sciences)
Virgilijus Valeika, Kaunas
University of Technology,
Lithuania

Dr. agr. **Victor Vergunov**,
National Academy of
Agrarian Sciences of Ukraine,
Ukraine

12.00–12.25 **REGISTRATION.**

12.25–12.30 **OPENING OF THE CONFERENCE.**
Ilze Gudro, Riga Technical University, Latvia

12.30–12.50 **THE WOODEN HOUSES OF THE ARCHITECT EIŽENS LAUBE (1880–1967).**
Jānis Kalniņš, Riga Technical University, Latvia

12.50–13.10 **LIDIJA HOFMANE-GRĪNBERGA (1898–1963) – ONE OF THE FIRST
PROFESSIONAL ARCHITECTS IN LATVIA.**
Alīda Zigmunde, Riga Technical University, Latvia

13.10–13.30 **THE UNKNOWN ABOUT THE ARCHITECT LIDIJA OSE (1922–1985).**
Ilze Gudro, Riga Technical University, Latvia

13.30–13.50 **KIOSKS BY ARCHITECT AIVARS BĒRZIŅŠ AND DESIGNER ANDRIS GRĪNVALDS.
INTERSECTIONS OF LIVES, PROCESSES, AND SOCIAL MOVEMENT.**
Gustavs Grasis, RISEBA, Latvia

13.50–14.10 **FORMATION OF THE TERMINOLOGY OF TECHNICAL SCIENCES IN THE LATVIAN LANGUAGE
FROM 1919 TO 1944. RESEARCH PROBLEMS.**
Māris Baltiņš, State Language Centre of Latvia / University of Latvia, Latvia

14.10–14.30 **ASTRONOMER, PEDAGOGUE, ASTEROID RESEARCHER
MATĪSS DĪRIKIS (1923–1993).**
Ilgonis Vilks, Gunta Vilka, University of Latvia, Latvia

14.30–14.50 **THE VERSATILE ACTIVITY OF THE PROFESSOR OF RIGA POLYTECHNICUM /
RIGA POLYTECHNIC INSTITUTE HEINRICH MALCHER (1848–1927).**
Daniels Šellers, Riga Technical University, Latvia

14.50–15.10 **INVENTIVE ACTIVITY IN LATVIA THROUGHOUT THE CENTURY (1923–2023).**
Ivans Griņevičs, Latvian Society of Inventors, Latvia



RĪGAS TEHNISKĀ
UNIVERSITĀTE

RTU 64. starptautiskā zinātniskā
konference

Trešdiena,
11. oktobris

Tiešsaistē –
ZOOM platformā /
Ķīpsalas ielā 6B-517.

PROGRAMMA

Inženiertehnika, mehānika un mašīnbūvniecība

SEKCIJAS VADĪTĀJS

Dr. sc. ing.
ANDREJS KRASŅIKOVS,
profesors, Rīgas Tehniskā
universitāte, Latvija

Dr. habil. sc. ing. **Jānis Vība**,
profesors, Rīgas Tehniskā
universitāte, Latvija

Dr. sc. ing. **Marina Čerpinska**,
docente, Rīgas Tehniskā
universitāte, Latvija

Dr. sc. ing. **Aleksandrs
Januševskis**, profesors, Rīgas
Tehniskā universitāte, Latvija

Dr. sc. ing. **Oga Kononova**,
profesore, Rīgas Tehniskā
universitāte, Latvija

ZINĀTNISKĀ KOMISIJA

| | |
|-------------|--|
| 13.00–13.10 | ATKLĀŠANA Andrejs Krasņikovs, Rīgas Tehniskā universitāte, Latvija |
| 13.10–13.20 | KONVEIJERA TIPĀ MAZĀ HIDROENERĢIJAS PĀRVEIDOŠANAS IERĪCE Jānis Vība, Vitālijs Beresņevičs, Marina Čerpinska, Mārtiņš Irbe, Rīgas Tehniskā universitāte, Latvija |
| 13.20–13.30 | PĒTĪJUMI PAR JAUNA BETONA MATERIĀLA, KAS PASTIPRINĀTS AR BAZALTA-BORA ŠĶIEDRU, AIZSARGĀJOŠAJĀM ĪPAŠĪBĀM PRET GAMMA STAROJUMU Rōmanenko Iryna, Rīgas Tehniskā universitāte, Latvija Trofymenko Oleksander, Ukrainas Nacionālā tehniskā Universitāte, I. Sikorska Kijevas Politehniskais institūts, Ukraina |
| 13.30–13.40 | GALIGO ELEMENTU METODES PIELIETOJUMS MATERIĀLU PRETESTĪBAS UZDEVUMU RISINĀŠANĀ Juris Kalinka, Rīgas Tehniskā universitāte, Latvija |
| 13.40–13.50 | ATBILSTOŠĀ GALVENĀ REZULTĪVĀ RĀDĪTĀJA IZVĒLE AIZSARGAPĢĒRBA VENTILĀCIJAS ELEMENTU OPTIMIZĀCIJAI Aleksandrs Januševskis, Sanjay Vejanand, Ivo Vaicis, Rīgas Tehniskā universitāte, Latvija Agris Guļevskis, SIA "Ekasol", Latvija |
| 13.50–14.00 | AUGSTU OGLEKĻA/TĒRAUDA ŠĶIEDRU KOMPOZĪTMATERIĀLU ELASTĪGO ĪPAŠĪBU SKAITLISKĀ MODELĒŠANA Olga Kononova, Vladislavs Jevstignejevs, Andrejs, Pupurs, Anish Niranjana Kulkarni, Rīgas Tehniskā universitāte, Latvija |
| 14.00–14.10 | DEGLĀNEKĻA KOMPOZĪTA ELASTĪGO ĪPAŠĪBU IZPĒTE Ilgar Jafarli, Artūrs Mačanovskis, Olga Kononova, Rīgas Tehniskā universitāte, Latvija |
| 14.10–14.20 | STANDARTA DUBULT-T SIJAS ŠĶĒRSGRIEZUMA MATERIĀLU NOMAIŅA PRET KOMPOZĪTMATERIĀLU Olga Kononova, Ilgar Jafarli, Rīgas Tehniskā universitāte, Latvija |
| 14.20–14.30 | IZPĒTE PAR ARMĒTU BETONU PIE DAŽĀDĀM TEMPERATŪRĀM UN ŠĶIEDRU NOTURĪBAS TESTI Andrejs Krasņikovs, Karunamoorthy Rengasamy Kannathasan, Rīgas Tehniskā universitāte, Latvija |
| 14.30–14.40 | IZGUDROJUMU UN INOVĀCIJU IZSTĀŽU "MINOX" UZPLAUKUMS LATVIJĀ Andrejs Krasņikovs, Rīgas Tehniskā universitāte, Latvija Ivans Griņevičs, Elmārs Baltiņš, Latvijas Izgudrotāju biedrība, Latvija. |

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| 14.40–14.50 | PASTIPRINĀTA AR ELEKTRISKI VĒRPTĀM NANOŠĶIEDRĀM LAMINĒTA TEKSTILA KOMPOZĪTMATERIĀLA IZGATAVOŠANA UN SEM ANALĪZE Sai Pavan Kanukuntla, Jaymin Sanchaniya, Rīgas Tehniskā universitāte, Latvija |
| 14.50–15.00 | IZPĒTE PAR ARMĒTU BETONU PIE DAŽĀDĀM TEMPERATŪRĀM UN ŠĶIEDRU NOTURĪBAS TESTI Andrejs Krasņikovs, Karunamoorthy Rengasamy Kannathasan, Rīgas Tehniskā universitāte, Latvija |
| 15.00–15.10 | MIKRO PLAISU ATTĪSTĪBA KOMPOZĪTA-METĀLA SAVIENOJUMOS AR MESO-STRUCTURE Anish Niranjana Kulkarni, Andrejs Pupurs, Rīgas Tehniskā universitāte, Latvija |
| 15.10–15.20 | HIBRĪDA POLIMĒRMATRICAS DEGLĀNEKĻA PELNU (OSA) KOMPOZĪTMATERIĀLA IZTURĪBA, KAS PASTIPRINĀTA AR 3D TRIKOTĀŽAS AUDUMU Umesh Haribhai Vavaliya, Andrejs Krasņikovs, Olga Kononova, Rīgas Tehniskā universitāte, Latvija |
| 15.20–15.30 | INOVĀTĪVAS INDUKCIJAS SILDĪŠANAS IEKĀRTAS IZSTRĀDE AUGSTAS VEIKTSPĒJAS KOMPOZĪTMATERIĀLU RAŽOŠANAI: JOMAS PĒTĪJUMI UN KONCEPCIJAS RADĪŠANA Anish Niranjana Kulkarni, Andrejs Pupurs, Mārtiņš Irbe, Viesturs Lācis, Alens Šņepsts, Rīgas Tehniskā universitāte, Latvija |
| 15.30–15.40 | DIVDIMENSIJU "SCRAMJET" IEPLŪDES PLŪSMAS APGABALA ANALĪZE PIE MAHA SKAITĻA 6,5 Dhananjay Varma, Shravan Vutukuru MVJ inženierzinātņu koledža, Bengaluru, Indija |
| 15.40–15.50 | HIDRODINAMIKAS UN MASAS PĀRNESES MODELĒŠANA USP ŠĶĪŠANAS APARĀTĀ Sabine Upnere Rīgas Tehniskā universitāte, Latvija, Normunds Jekabsons Latvijas universitāte, Latvija, Agnese Brangule Rīgas Stradiņu universitāte, Latvija |
| 15.50–16.00 | ATKĀRTOTAS IZMANTOŠANAS KOSMOSA KAPSULAS PROJEKTĒŠANA UN ANALĪZE Shravan Vutukuru, Chandan V., Shlok Dumbre, MVJ inženierzinātņu koledža, Bengaluru, Indija |
| 16.00–16.10 | SOLIDWORKS IESPĒJAS INŽENIERTEHNISKAJOS APRĒĶINOS Māris Eidsuks, Edgars Kovals, Rīgas Tehniskā universitāte, Latvija |
| 16.10–16.20 | DUBULTAS SPIRĀLES UUV PIEDZIŅAS OPTIMIZĀCIJA Shravan Koundinya Vutukuru, S. Raguraam, MVJ inženierzinātņu koledža, Bengaluru, Indija |
| 16.20 | NOSLĒGUMS, DISKUSIJAS |



RIGA TECHNICAL
UNIVERSITY

64th International Scientific Conference
of Riga Technical University

Wednesday,
October 11

Online – ZOOM
platform/ 6B-517
Kipsala Str.

PROGRAMME

Engineering, Mechanics and Mechanical Engineering

HEAD OF THE SECTION

Dr. sc. ing., **Andrejs Krasņikovs**,
Professor, Riga Technical
University, Latvia

Dr. habil. sc. ing. **Jānis Vība**,
Professor, Riga Technical
University, Latvia

SCIENTIFIC COMMITTEE

Dr. sc. ing. **Marina Čerpinska**,
Assistant Professor, Riga
Technical University, Latvia

Dr. sc. ing. **Aleksandrs
Janušovskis**, Professor, Riga
Technical University, Latvia

Dr. sc. ing., **Olga Kononova**,
Professor, Riga Technical
University, Latvia

| | |
|-------------|---|
| 13.00–13.10 | OPENING AND WELCOME ADDRESSES Andrejs Krasņikovs, Riga Technical University, Latvia |
| 13.10–13.20 | CONVEYOR TYPE SMALL HYDROPOWER CONVERSION DEVICE Janis Viba, Vitalijs Beresnevics, Marina Cerpinska, Martins Irbe, Riga Technical University, Latvia |
| 13.20–13.30 | RESEARCH ON THE PROTECTIVE PREPERTIES OF A NEW CONCRETE MATERIAL REINFORCED WITH BASALT-BORON FIBER AGAINST GAMMA RADIATION Romanenko Iryna, Riga Technical University, Latvia Trofymenko Oleksander, Ukrainian National Technical University, Kiev Polytechnic Institute n. a. I. Sikorsky, Ukraine |
| 13.30–13.40 | APPLICATION OF THE FINITE ELEMENTS METHOD IN SOLVING MATERIAL RESISTANCE TASKS Juris Kalinka, Riga Technical University, Latvia |
| 13.40–13.50 | CHOOSING OF APPROPRIATE KEY PERFORMANCE INDICATOR FOR OPTIMIZATION OF PROTECTIVE CLOTHING VENTILATION ELEMENTS Aleksandrs Janusevskis, Sanjay Vejanand, Ivo Vaicis, Riga Technical University, Latvia Agris Gulevskis, SIA "Ekasol", Latvia |
| 13.50–14.00 | NUMERICAL SIMULATION OF ELASTIC PROPERTIES OF WOVEN CARBON/STEEL FIBRE COMPOSITES Olga Kononova, Vladislavs Jevstignejevs, Andrejs, Pupurs, Anish Niranjana Kulkarni, Riga Technical University, Latvia |
| 14.00–14.10 | ELASTIC PROPERTIES INVESTIGATION OF THE OIL SHALE ASH COMPOSITE Ilgar Jafarli, Arturs Macanovskis, Olga Kononova, Riga Technical University, Latvia |
| 14.10–14.20 | REPLACEMENT OF MATERIALS OF STANDART I-BEAMS CROSS-SECTIONS BY COMPOSITE MATERIALS IN CONSTRUCTION Olga Kononova, Ilgar Jafarli, Riga Technical University, Latvia |
| 14.20–14.30 | EXPERIMENTAL INVESTIGATION OF SHORT STEEL FIBERS WITH DIFFERENT TEMPERATURE CONCENTRATION AND ITS PULLOUT TESTS Andrejs Krasņikovs, Karunamoorthy Rengasamy Kannathasan, Riga Technical University, Latvia |
| 14.30–14.40 | THE EXPANSION OF "MINOX" EXHIBITIONS OF INVENTIONS AND INNOVATIONS IN LATVIA Andrejs Krasņikovs, Riga Technical University, Latvia Ivans Grinevics, Elmars Baltins, Latvian Society of Inventors, Latvia. |
| 14.40–14.50 | FABRICATION AND SEM ANALYSIS OF NON-CRIMPING LAMINATED TEXTILE COMPOSITES REINFORCED WITH ELECTROSPUN NANOFIBERS Sai Pavan Kanukuntla, Jaymin Sanchaniya, Riga Technical University, Latvia |

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|-------------|---|
| 14.50–15.00 | INVESTIGATION OF SFRC WITH DIFFERENT TEMPERATURE CONCENTRATION AND ITS PULLOUT TESTS Andrejs Krasnikovs, Karunamoorthy Rengasamy Kannathasan Riga Technical University, Latvia |
| 15.00–15.10 | MICRO-DAMAGE EVOLUTION IN NOVEL COMPOSITE-METAL JOINTS WITH TEXTILE MESO-STRUCTURE Anish Niranjana Kulkarni, Andrejs Pupurs, Riga Technical University, Latvia |
| 15.10–15.20 | THE STRENGTH OF A HYBRID POLYMER MATRIX OIL SHALE ASH (OSA) COMPOSITE MATERIAL REINFORCED BY 3D-KNITTED FABRIC Umesh Haribhai Vavaliya, Andrejs Krasnikovs, Olga Kononova, Riga Technical University, Latvia |
| 15.20–15.30 | DEVELOPMENT OF INNOVATIVE INDUCTION HEATING SETUP FOR MANUFACTURING OF HIGH PERFORMANCE COMPOSITES: STATE-OF-THE-ART AND PROJECT CONCEPT MAPPING Anish Niranjana Kulkarni, Andrejs Pupurs, Martins Irbe, Viesturs Lacis, Alens Snepsts, Riga Technical University, Latvia |
| 15.30–15.40 | DESIGN ANALYSIS OF TWO-DIMENSIONAL SCRAMJET INLET FLOWFIELD AT MACH 6.5 Dhananjay Varma, Shravan Vutukuru, MVJ College of Engineering, Bengaluru, Karnataka, India |
| 15.40–15.50 | MODELING OF HYDRODYNAMICS AND MASS TRANSFER IN A USP DISSOLUTION APPARATUS Sabine Upnere Riga Technical University, Latvia, Normunds Jekabsons University of Latvia, Latvia, Agnese Brangule Riga Stradini University, Latvia |
| 15.50–16.00 | DESIGN AND ANALYSIS OF RE-ENTRY SPACE CAPSULE Shravan Vutukuru, Chandan V., Shlok Dumbre, MVJ College of Engineering, Bengaluru, Karnataka, India |
| 16.00–16.10 | SOLIDWORKS CAPABILITIES IN ENGINEERING CALCULATIONS Maris Eiduals, Edgars Kovals, Riga Technical University, Latvia |
| 16.10–16.20 | OPTIMISATION OF PROPULSION IN DOUBLE HELICAL UUV Shravan Koundinya Vutukuru, S. Raguraam, Department of Aerospace Engineering, MVJ College of Engineering, Bangalore, India |
| 16.20 | CLOSURE, DISCUSSIONS |



RĪGAS TEHNISKĀ
UNIVERSITĀTE

RTU 64. starptautiskā zinātniskā
konference

PROGRAMMA

Ceturtdiena,
12. oktobris

RTU Datorzinātnes
un informācijas
tehnoloģijas fakultāte,
Zunda krastmala 10,
104. auditorija

Lietišķās datorsistēmas

SEKCIJAS VADĪTĀJA

Dr. sc. ing. **Oksana Ņikiforova**,
profesore, Rīgas Tehniskā
universitāte, Latvija

Dr. habil. sc. ing. **Jānis
Grundspenķis**, profesors,
Rīgas Tehniskā universitāte,
Latvija

ZINĀTNISKĀS KOMISIJAS VADĪTĀJS

ZINĀTNISKĀ KOMISIJA

Dr. sc. comp. **Guntis
Arnicāns**, profesors, Latvijas
Universitāte, Latvija

Dr. sc. comp. **Guntis
Bārzdīņš**, profesors, Latvijas
Universitāte, Latvija

Dr. habil. sc. comp. **Jānis
Bārzdīņš**, profesors, Latvijas
Universitāte, Latvija

Dr. habil. sc. comp. **Juris
Borzovs**, profesors, Latvijas
Universitāte, Latvija

Dr. habil. **Gintautas
Dzemyda**, Professor, Vilnius
University, Lithuania

Dr. **Dalē Dzemydienē**,
Professor, Vilnius University,
Lithuania

Ph. D. **Nuno M. Garcia**,
Professor, University of Beira
Interior, Portugal

Ph. D. **Hele-Mai Haav**, vadošā
pētniece, Tallinn University of
Technology, Estonia

Dr. habil. ing. **Zbigniew
Huzar**, Professor, Wrocław
University of Science and
Technology, Poland

Ph. D., **Saša Lazarević**,
Associate Professor,
University of Belgrade,
Serbia

Ph. D. **Henry Linger**,
Associate Professor, Monash
University, Australia

Ph. D. **Chu Kiong Loo**,
Professor, University of
Malaya, Malaysia

Dr. **Audronė Lupeikienė**,
Associate Professor, Vilnius
University, Lithuania

Dr. **Virginijus Marcinkevičius**,
vadošais pētnieks, Vilnius
University, Lithuania

Zhou Mingtao, Professor,
Chinese Academy of Science,
Beijing Hope Software Co.,
Ltd., China

Ph. D. **Mohammed El Mohajir**,
Professor, Sidi Mohamed Ben
Abdellah University, Morocco

Ph. D. **Eduard Petlenkov**,
Professor, Tallinn University
of Technology, Estonia

Ph. D. **Dušan Savić**, Associate
Professor, University of
Belgrade, Serbia

Ph. D. **Miloš Stojmenović**,
Professor, Singidunum
University, Serbia

Ph. D. **Jaak Tepandi**,
Professor, Tallinn University
of Technology, Estonia

Dr. **Olegas Vasilecas**,
Professor, Vilnius Gediminas
Technical University,
Lithuania

Dr. **Tzvetomir Vassilev**,
Professor, University of Ruse,
Bulgaria

Ph. D. **Wita Wojtkowski**,
Professor, Boise State
University, USA

16.00–16.10

ATKLĀŠANA

Dr. sc. ing. **Oksana Ņikiforova**, profesore, Rīgas Tehniskā universitāte, Latvija

16.10–16.30

IESKATS MŪSDIENU OPTIMĀLĀS PROJEKTĒŠANAS METODĒS PROCESIEM UN IERĪCĒM

Jurijs Lavendels, Rīgas Tehniskā universitāte, Latvija, Igors Mihailovs,
Rīgas Tehniskā universitāte, Latvija

16.30–16.50

ESS DAĻIŅU PAATRINĀTĀJA DATU APSTRĀDE UN PIRMIE ANALĪZES REZULTĀTI

Kārlis Berkolds Rīgas Tehniskā universitāte, Latvija

16.50–17.10

DATU CENTRA TERMODINAMISKĀS UZVEDĪBAS PROGNOZĒŠANA

Agris Ņikitenko, Rīgas Tehniskā universitāte, Latvija, Ansis Avotiņš, Rīgas Tehniskā universitāte,
Latvija, Pēteris Apse-Apsītis, Rīgas Tehniskā universitāte, Latvija, Jānis Ķikāns,
Rīgas Tehniskā universitāte, Latvija

17.10–17.30

VIDES SENSORU NOVIETOJUMS ĒKĀS TERMODINAMISKĀS UZVEDĪBAS PROGNOZĒŠANAI

Agris Ņikitenko, Rīgas Tehniskā universitāte, Latvija, Jevgēņijs Teličko,
Rīgas Tehniskā universitāte, Latvija, Ēriks Bricis, AS "SAFTehnika", Latvija

| | |
|-------------|--|
| 17.30–17.50 | INTERNETA LIETOTĀJU IZSEKOŠANAS AKTIVITĀŠU ANALĪZE LATVIJAS INTERNETA SEGMENTĀ Vitālijs Teže, Rīgas Tehniskā universitāte, Latvija |
| 17.50–18.10 | UZŅĒMUMA DARBINIEKU UZVEDĪBAS ANALĪZE, PAMATOJOTIES UZ DARBINIEKU KLASTERU UZVEDĪBAS ŠABLONIEM Pāvels Garkalns, Rīgas Tehniskā universitāte, Latvija, Oksana Nikiforova, Rīgas Tehniskā universitāte, Latvija, Vitalijs Zabiņako, SIA "ABC software", Latvija, Jurijs Kornijenko, SIA "ABC software", Latvija |
| 18.10–18.20 | PĀRTRAUKUMS |
| 18.20–18.40 | PATTERNLANG: UZLABOTA VALODA SINTAKSES ANALĪZEI Maksims Uhanovs, Rīgas Tehniskā universitāte, Latvija, Gints Jēkabsons, Rīgas Tehniskā universitāte, Latvija |
| 18.40–19.00 | BIZNESA PROCESOS SAKŅOTAS DATU PRASĪBAS SERVISIEM Vladimirs Moskaļovs, Rīgas Tehniskā universitāte, Latvija, Mārīte Kirikova, Rīgas Tehniskā universitāte, Latvija |
| 19.00–19.20 | RADOŠĀ MĀKSLĪGĀ INTELEKTA PIELIETOŠANA, LAI UZLABOTU SPĒJĀS IZSTRĀDES UN UZTURĒŠANAS SNIEGUMU Uldis Karlovs-Karlovs, Rīgas Tehniskā universitāte, Latvija |
| 19.20–19.40 | ADAPTĪVA MĀCĪBU PLĀNA ĢENERĒŠANAS METOŽU UN MODEĻU IZSTRĀDE Svetlana Jurenoka, Rīgas Tehniskā universitāte, Latvija, Aleksejs Jurenoks, Rīgas Tehniskā universitāte, Latvija |
| 19.40–20.00 | GRUPU PROJEKTI MĀCĪBU PROCESĀ Jānis Amoliņš, Rīgas Tehniskā universitāte, Latvija, Sabina Kataļņikova, Rīgas Tehniskā universitāte, Latvija, Natālija Prokofjeva, Rīgas Tehniskā universitāte, Latvija, Marina Uhanova, Rīgas Tehniskā universitāte, Latvija, Viktorija Ziborova, Rīgas Tehniskā universitāte, Latvija |
| 20.00–20.20 | INOVĀCIJA UN DARBASPĒKA IZAICINĀJUMI INFORMĀCIJAS TEHNOLOĢIJU JOMĀ. LATVIJAS SITUĀCIJAS ANALĪZE Andris Ozols, Rīgas Tehniskā universitāte, Latvija |
| 20.20 | NOSLĒGUMS, DISKUSIJAS |



RIGA TECHNICAL
UNIVERSITY

64th International Scientific Conference
of Riga Technical University

Thursday,
October 12

RTU Faculty of
Computer Science
and Information
Technology,
10 Zunda krastmala,
Auditorium 104

PROGRAMME

Applied Computer Systems

HEAD OF THE SECTION

Dr. sc. ing. **Oksana Nikiforova**,
Professor, Riga Technical
University, Latvia

SCIENTIFIC COMMITTEE CHAIR

Dr. habil. sc. ing. **Janis
Grundspenkis**, Professor Riga
Technical University, Latvia

SCIENTIFIC COMMITTEE

Dr. sc. comp. **Guntis
Arnicāns**, Professor,
University of Latvia, Latvia

Dr. sc. comp. **Guntis
Bārzdiņš**, Professor,
University of Latvia, Latvia

Dr. habil. sc. comp. **Jānis
Bārzdiņš**, Professor,
University of Latvia, Latvia

Dr. habil. sc. comp. **Juris
Borzovs**, Professor,
University of Latvia, Latvia

Dr. habil. **Gintautas
Dzemyda**, Professor, Vilnius
University, Lithuania

Dr. **Dalė Dzemydienė**,
Professor, Vilnius University,
Lithuania

Ph. D. **Nuno M. Garcia**,
Professor, University of Beira
Interior, Portugal

Ph. D. **Hele-Mai Haav**, Senior
Researcher, Tallinn University
of Technology, Estonia

Dr. habil. ing. **Zbigniew
Huzar**, Professor, Wrocław
University of Science and
Technology, Poland

Ph. D. **Saša Lazarević**,
Associate Professor,
University of Belgrade,
Serbia

Ph. D. **Henry Linger**,
Associate Professor, Monash
University, Australia

Ph. D. **Chu Kiong Loo**,
Professor, University of
Malaya, Malaysia

Dr. **Audronė Lupeikienė**,
Associate Professor, Vilnius
University, Lithuania

Dr. **Virginijus Marcinkevičius**,
Senior Researcher, Vilnius
University, Lithuania

Zhou Mingtao, Professor,
Chinese Academy of Science,
Beijing Hope Software Co.,
Ltd., China

Ph. D. **Mohammed El Mohajir**,
Professor, Sidi Mohamed Ben
Abdellah University, Morocco

Ph. D. **Eduard Petlenkov**,
Professor, Tallinn University
of Technology, Estonia

Ph. D. **Dušan Savić**, Assistant
Professor, University of
Belgrade, Serbia

Ph. D. **Miloš Stojmenović**,
Professor, Singidunum
University, Serbia

Ph. D. **Jaak Tepandi**,
Professor, Tallinn University
of Technology, Estonia

Dr. **Olegas Vasilecas**,
Professor, Vilnius Gediminas
Technical University,
Lithuania

Dr. **Tzvetomir Vassilev**,
Professor, University of Ruse,
Bulgaria

Ph. D. **Wita Wojtkowski**,
Professor, Boise State
University, USA

16.00–16.10 **OPENING AND WELCOME ADDRESSES**
Oksana Nikiforova, Professor, Riga Technical University, Latvia

16.10–16.30 **AN INSIGHT INTO CONTEMPORARY OPTIMAL DESIGN METHODS FOR PROCESSES AND EQUIPMENT**
Jurijs Lavendels, Riga Technical University, Latvia, Igors Mihailovs, Riga Technical University, Latvia

16.30–16.50 **ESS PARTICLE ACCELERATOR DATA PROCESSING AND FIRST ANALYSIS RESULTS**
Kārlis Berkolds, Riga Technical University, Latvia

16.50–17.10 **FORECASTING OF DATA CENTRE THERMODYNAMIC BEHAVIOUR**
Agris Ņikitenko, Riga Technical University, Latvia, Ansis Avotiņš, Riga Technical University, Latvia,
Pēteris Apse-Apsītis, Riga Technical University, Latvia, Jānis Ķikāns, Riga Technical University, Latvia

17.10–17.30 **ENVIRONMENTAL SENSOR POSITIONING IN BUILDINGS FOR THERMODYNAMICS BEHAVIOUR FORECASTING**
Agris Ņikitenko, Riga Technical University, Latvia, Jevgēnijs Teličko, Riga Technical University, Latvia,
Ēriks Bricis, AS "SAF Tehnika", Latvia

| | |
|-------------|--|
| 17.30–17.50 | ANALYSIS OF INTERNET USER TRACKING ACTIVITIES IN LATVIAN SEGMENT OF THE INTERNET Vitalijs Teze, Riga Technical University, Latvia |
| 17.50–18.10 | ANALYSIS OF THE BEHAVIOR OF COMPANY EMPLOYEES BASED ON BEHAVIOR PATTERNS OF EMPLOYEES' CLUSTERS Pavels Garkalns, Riga Technical University, Latvia, Oksana Nikiforova, Riga Technical University, Latvia, Vitaly Zabiniako, "ABC software" Ltd., Latvia, Jurijs Kornienko "ABC software" Ltd., Latvia |
| 18.10–18.20 | BREAK |
| 18.20–18.40 | PATTERNLANG: IMPROVED LANGUAGE FOR SYNTAX ANALYSIS Maksims Uhanovs, Riga Technical University, Latvia, Gints Jēkabsons, Riga Technical University, Latvia |
| 18.40–19.00 | BUSINESS PROCESS BASED DATA REQUIREMENTS FOR SERVICES Vladimirs Moskaļovs, Riga Technical University, Latvia, Mārīte Kirikova, Riga Technical University, Latvia |
| 19.00–19.20 | THE USE OF GENERATIVE AI TO IMPROVE AGILE DEVELOPMENT AND OPERATIONS PERFORMANCE Uldis Karlovs-Karlovskis, Riga Technical University, Latvia |
| 19.20–19.40 | DEVELOPMENT OF METHODS AND MODELS FOR GENERATING THE ADAPTIVE CURRICULUM Aleksejs Jurenoks, Riga Technical University, Latvia, Svetlana Jurenoka, Riga Technical University, Latvia |
| 19.40–20.00 | GROUP PROJECTS IN LEARNING PROCESS Janis Amolins, Riga Technical University, Latvia, Sabina Katalnikova, Riga Technical University, Latvia, Natalya Prokofyeva, Riga Technical University, Latvia, Marina Uhanova, Riga Technical University, Latvia, Viktorija Ziborova, Riga Technical University, Latvia, |
| 20.00–20.20 | INNOVATION AND LABOUR SUPPLY CHALLENGES TO INFORMATION TECHNOLOGY INDUSTRY: CASE OF LATVIA Andris Ozols, Riga Technical University, Latvia |
| 20.20 | CLOSURE, DISCUSSIONS |



RĪGAS TEHNISKĀ
UNIVERSITĀTE

RTU 64. starptautiskā zinātniskā
konference

Ceturtdiena,
12. oktobris

Ķīpsalas ielā 6B,
417. aud. / ZOOM

PROGRAMMA

Mašīnbūves tehnoloģija un siltumtehnika

SEKCIJAS VADĪTĀJA

Irīna Boiko, profesore, Rīgas
Tehniskā universitāte, Latvija

SEKCIJAS VADĪTĀJAS VIETNIEKI

Dr. sc. ing. **Dmitrijs Rusovs**,
asoc. profesors, Rīgas
Tehniskā universitāte, Latvija

Dr. sc. ing. **Anita Avišāne**,
docente, Rīgas Tehniskā
universitāte, Latvija

ZINĀTNISKĀ KOMISIJA

Dr. sc. ing. **Gennady
Varlamov**, profesors,
Ukrainas Nacionāla tehniskā
universitāte, I. Sikorska
Kijevas Politehniskais
institūts

Dr. sc. ing. **Ēriks Geriņš**,
profesors, Rīgas Tehniskā
universitāte, Latvija

Dr. sc. ing. **Sigurds
Jaundālders**, asoc.
profesors, Rīgas Tehniskā
universitāte, Latvija

Dr. sc. ing. **Artis Kromanis**,
asoc. profesors,
Rīgas Tehniskā universitāte,
Latvija

Dr. sc. ing. **Oskars Liniņš**,
profesors, Rīgas Tehniskā
universitāte, Latvija

Dr. sc. ing. **Natālija
Mozga**, asoc. profesore,
Rīgas Tehniskā universitāte,
Latvija

13.30–13.40

ATKLĀŠANA

Irīna Boiko, RTU, Latvija

13.40–13.50

**PĒTĪJUMS PAR ADITĪVĀS RAŽOŠANAS (AM) TEHNOLOĢIJAS IZSTRĀDĀŠANU
RADIOFREKVENCES KVADRUPOLA (RFQ) IZGATAVOŠANAI UN VEIKTSPĒJAS UZLABOŠANAI**
Guntis Pikurs, Toms Torims, Rīgas Tehniskā universitāte, Latvija, Maurizio Vretenar,
CERN, Šveice / Francija

13.50–14.00

CIETSAKAUSĒJUMA GRIEZĒJINSTRUMENTA VEIKTSPĒJU EKSPERIMENĀLIE PĒTĪJUMI NERŪSĒJOŠĀ TĒRAUDA VIRPOŠANAS PROCESĀ

Viktors Gutakovskis, Rīgas Tehniskā universitāte, Latvija

14.00–14.10

AR PVD METODI IEGŪTO PLĀNU NANOSTRUKTURĒTO TRIBOLOĢISKO PĀRKLĀJUMU PATIESĀS MIKROCĪTĪBAS NOVĒRTĒŠANA IZMANTOJOT MATEMĀTISKOS DEKONVOLŪCIJAS MODEĻUS

Uldis Kandars, Ernests Jansons, Jānis Lungevičs, Raimonds Širants, Armands Leitāns,
Irīna Boiko, Rīgas Tehniskā universitāte, Latvija

14.10–14.20

BERZES PĀRA DETAĻAS AR PĀRKLĀJUMU KALPOŠANAS LAIKA NOTEIKŠANA

Oskars Liniņš, Armands Leitāns, Ernests Jansons,
Jānis Lungevičs, Rīgas Tehniskā universitāte, Latvija

14.20–14.30

BERZES PĀRA "TĒRAUDS-ANTIFRIKCIJAS MATERIĀLS" NODILUMA EKSPERIMENTĀLO REZULTĀTU UN ANALĪTISKO APRĒĶINU PĒTĪJUMI

Guntis Sprīņģis, Irīna Boiko, Rīgas Tehniskā universitāte, Latvija

14.30–14.40

SPIEDTVERTNES UN SISTĒMAS ŪDENRAŽA UZGLABŠANAI. KOMPONENTI UN RISINĀJUMI

Dmitrijs Rusovs, Varis Žentiņš, Vera Kulakova, Rīgas Tehniskā universitāte, Latvija

14.40–14.50

DŪMGĀZU KONDENSATORA EFEKTIVITĀTES PAAUGSTINĀŠANA IZMANTOJOT SILTUMSŪKŅU TEHNOLOĢIJU

Varis Žentiņš, Dmitrijs Rusovs, Vera Kulakova, Rīgas Tehniskā universitāte, Latvija

14.50–15.00

KAVITĀCIJAS IETEKMES PĒTĪJUMI UZ ZEMA SPIEDIENA ŠĶIDRĀ METĀLA AR BRĪVU VIRSMU KONTŪRA DARBĪBU

Oskars Mikanovskis, Rīgas Tehniskā universitāte, Latvija

15.00–15.10 **PRIEKŠĒJĀ RATA AIZMUGURĒJĀS SVIRAS LŪZUMA METALOGRAFISKĀ EKSPERTĪZE**

Jānis Ozoliņš, Didzis Avišāns, Rīgas Tehniskā universitāte, Latvija

15.10–15.20 **JAUNA IEEJA VĒJU TURBĪNU IZTURĪBAS PRET VIESUĻVĒTRAS NODROŠINĀŠANAI**

Vladimirs Vorohobovs, Mārtiņš Kleinhofs, Rīgas Tehniskā universitāte, Latvija

15.20 **NOSLĒGUMS, DISKUSIJAS**



RIGA TECHNICAL
UNIVERSITY

Thursday,
October 12

6B Ķīpsālas Street,
Room 417 / ZOOM

64th International Scientific Conference
of Riga Technical University

PROGRAMME

Mechanical Engineering Technology and Heat Engineering

HEAD OF THE SECTION

Dr. sc. ing. **Irina Boiko**,
Professor, Riga Technical
University, Latvia

Dr. sc. ing. **Dmitrijs Rusovs**,
Associate Professor, Riga
Technical University, Latvia

Dr. sc. ing. **Anita Avisane**,
Assistant Professor, Riga
Technical University, Latvia

SECTION VICE-CHAIRS

SCIENTIFIC COMMITTEE

Dr. sc. ing. **Gennady
Varlamov**, Professor,
National Technical University
of Ukraine, I. Sikorsky Kyiv
Polytechnic Institute, Ukraine

Dr. sc. ing. **Eriks Gerins**,
Professor, Riga Technical
University, Latvia

Dr.sc.ing., asoc.
professor, **Sigurds
Jaundalderis**, Riga Technical
University, Latvia

Dr. sc. ing. **Artis Kromanis**,
Associate Professor, Riga
Technical University, Latvia

Dr. sc. ing. **Oskars Linins**,
Professor, Riga Technical
University, Latvia

Dr. sc. ing. **Natalija
Mozga**, Associate Professor,
Riga Technical University,
Latvia

13.30–13.40 **OPENING AND WELCOME ADDRESSES**
Irina Boiko, RTU, Latvia

13.40–13.50 **RESEARCH ON ADDITIVE MANUFACTURING (AM) TECHNOLOGY DEVELOPMENT FOR RADIO FREQUENCY QUADRUPOLE (RFQ) FABRICATION AND PERFORMANCE IMPROVEMENT**
Guntis Pikurs, Toms Torims, Riga Technical University, Latvia, Maurizio Vretenar, CERN, Switzerland / France

13.50–14.00 **EXPERIMENTAL STUDIES ON THE PERFORMANCE OF CARBIDE TOOL IN STAINLESS STEEL TURNING PROCESS**
Viktors Gutakovskis, Riga Technical University, Latvia

14.00–14.10 **DECONVOLUTION MODELS FOR EVALUATING THE TRUE MICROHARDNESS OF THIN NANOSTRUCTURED TRIBOLOGICAL COATINGS DEPOSITED BY PVD TECHNIQUE**
Uldis Kandars, Ernests Jansons, Janis Lungevics, Raimonds Sirants, Armands Leitans, Irina Boiko, Riga Technical University, Latvia

14.10–14.20 **DETERMINATION OF SERVICE LIFE OF COATED FRICTION PAIR PARTS**
Oskars Linins, Armands Leitans, Ernests Jansons, Janis Lungevics, Riga Technical University, Latvia

14.20–14.30 **STUDIES OF EXPERIMENTAL RESULTS AND ANALYTICAL CALCULATIONS OF WEAR OF FRICTION PAIR "STEEL-ANTIFRICTION MATERIAL"**
Guntis Springis, Irina Boiko, Riga Technical University, Latvia

14.30–14.40 **PRESSURE TANKS AND SYSTEMS FOR HYDROGEN STORAGE. COMPONENTS AND SOLUTIONS**
Dmitrijs Rusovs, Varis Zentins, Vera Kulakova, Riga Technical University, Latvia

14.40–14.50 **INCREASING THE FLUE GAS CONDENSER EFFICIENCY USING HEAT PUMP TECHNOLOGY**
Varis Zentins, Dmitrijs Rusovs, Vera Kulakova, Riga Technical University, Latvia

14.50–15.00 **INVESTIGATION OF CAVITATION INFLUENCE ON THE LOW PRESSURE LIQUID METAL WITH FREE SURFACE LOOP OPERATION**
Oskars Mikanovskis, Riga Technical University, Latvia

15.00–15.10 **METALLOGRAPHIC EXPERTISE OF FRONT WHEEL REAR LEVER FRACTURE**
Janis Ozolins, Didzis Avisans, Riga Technical University, Latvia

15.10–15.20

**A NEW APPROACH FOR ENSURING THE HURRICANE RESISTANCE
OF THE WIND TURBINE**

Vladimirs Vorohobovs, Mārtiņš Kleinhofs, Riga Technical University, Latvia

15.20

CLOSURE, DISCUSSIONS



**RIGA TECHNICAL
UNIVERSITY**

64th International Scientific Conference
of Riga Technical University

**Friday,
October 6**

**Zunda krastmala
8-108/109**

PROGRAMME

Materials Science and Applied Chemistry

9.00–9.10 **OPENING AND WELCOME ADDRESSES**
Professor Māris Turks, Riga Technical University, Latvia

9.10–9.30 **CHEMISTS, EDUCATED IN RIGA IN THE LAST 160 YEARS**
Walden Medal Awardee Professor **Alīda Zigmunde**, Riga Technical University, Latvia

9.30–9.50 **PARADIGM SHIFT IN SINTERING OF CALCIUM PHOSPHATES AND THEIR COMPOSITES**
Walden Medal Laureate Professor Jānis Ločs, Riga Technical University, Latvia

9.50–10.35 **TKX-50: A NEW HIGH EXPLOSIVE DEVELOPED AT LMU MUNICH**
Professor Thomas M. Klapötke, Ludwig Maximilian University of Munich, Germany



10.40–11.10 **COFFEE BREAK**

RISEUS2 SESSION: FINAL RISEUS2 CONFERENCE
(Zunda krastmala 8-108)
Session Chair: Professor JĀNIS LOČS



11.10–11.30 **ADSORPTION ONTO APATITIC CALCIUM PHOSPHATES FOR DRUG DELIVERY: TOWARD THE DEVELOPMENT OF BIOMATERIALS WITH LOCAL ACTIVITY**
Associate Professor Stéphanie SARDA, Institut National Polytechnique de Toulouse CIRIMAT, France

11.30–11.50 **THE ROLE OF CAP BIOMATERIALS IN MAXCILO-FACIAL SURGERY**
Dr. rer. nat. Anja Heselich, Frankfurt Orofacial Regenerative Medicine Laboratory, Goethe University Frankfurt, Germany

11.50–12.10 **HOW BIOREACTORS CAN BE USED FOR BIOMATERIAL DEVELOPMENT AND EVALUATION?**
Professor Mauro Alini, AO Research Institute Davos, Switzerland

12.10–12.30 **CELLS COMPARTMENTALIZATION TO BE USED IN BONE TISSUE ENGINEERING**
Professor João F. Mano, Chemistry Department of the University of Aveiro, Portugal

MATERIALS AND TECHNOLOGIES FOR CYBERSECURITY SESSION
(Zunda krastmala 8-109)

11.10–11.30 **ENHANCED ELECTROMAGNETIC PROTECTION AND CYBERSECURITY THROUGH FIELD-DEPLOYABLE INNOVATIVE SHIELDING, MONITORING AND DATA DESTRUCTION TECHNOLOGIES**
Professor Sergejs Gaidukovs, Riga Technical University, Latvia

11.30–11.50 **HIGH-PERFORMANCE EMI SHIELDING MATERIALS AND STRUCTURES**
Miks Bleija, Assistant Professor Oskars Platnieks, Riga Technical University, Latvia

11.50–12.10 **TESTING OF ELECTROMAGNETIC PROTECTION**
Eduards Lobanovs, Gatis Šūpols, Vents Riekstiņš, Institute of Electronics and Computer Science, Latvia

12.10–12.30 **INDOOR LOCALIZATION APPLICATIONS FOR DATA PROTECTION**
Pēteris Paikens, Krišjānis Nesenbergs, Kirils Solovjovs, Institute of Electronics and Computer Science, Latvia

12.30–13.50 **POSTER SESSION (Zunda krastmala 8-107/108)**

ORAL PRESENTATION SESSION 1: BIOMATERIALS RESEARCH

(Zunda krastmala 8–108)

Session Chairs: Associate Professor KRISTAPS KĻAVIŅŠ, Leading Researcher JANA VECSTAUDŽA

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| 13.50–14.00 | STRETCHABLE DOUBLE NETWORK NANO-COMPOSITE HYDROGEL FOR BONE TISSUE REGENERATION Abhishek Rajesh Indurkar, Riga Technical University, Latvia |
| 14.00–14.10 | OCTACALCIUM PHOSPHATE AND DOXORUBICIN HYDROCHLORIDE: NOVEL DRUG DELIVERY SYSTEM FOR CANCER TREATMENT Ilijana Kovrlija, Riga Technical University, Latvia |
| 14.10–14.20 | A DIRECT AND FEASIBLE METHOD FOR THE PREPARATION OF OCTA CALCIUM PHOSPHATE Rajan Choudhary, Riga Technical University, Latvia |
| 14.20–14.30 | EXPLORING THE MECHANISM OF PLL/HA HYDROGEL CYTOTOXICITY Jingzhi Fan, Riga Technical University, Latvia |
| 14.30–14.40 | HIGHLY POROUS HYBRID SCAFFOLDS FOR LOCAL DELIVERY OF NON-ANTIBIOTIC ANTIMICROBIALS Līga Stīpniece, Riga Technical University, Latvia |
| 14.40–14.50 | INJECTABLE NANOPARTICLE-HYDROGEL COMPOSITES FOR BONE REGENERATION Anna Rubīna, Riga Technical University, Latvia |
| 14.50–15.00 | EXPLORING PLATELET-RICH FIBRIN MICROSTRUCTURE AND HISTOLOGY: WITH AND WITHOUT HYDROGEL CARRIERS Karina Egle, Riga Technical University, Latvia |
| 15.00–15.10 | CALCIUM PHOSPHATE BONE CEMENTS FOR DOXORUBICIN DELIVERY Estere Oseļska, Riga Technical University, Latvia |
| 15.10–15.20 | REVEALING PHYSICO-CHEMICAL AND ANTIBACTERIAL PROPERTIES OF CHEMICALLY COUPLED ϵ-POLYLYSINE/HYALURONIC ACID HYDROGELS Artemijs Sceglavs, Riga Technical University, Latvia |

ORAL PRESENTATION SESSION 2

(Zunda krastmala 8–109)

Session Chair: Assistant Professor OSKARS PLATNIEKS

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|-------------|---|
| 13.20–13.30 | HIGH-VOLTAGE DUAL-ELECTROLYTE Zn-MnO₂ BATTERY ENABLED BY PAM HYDROGELS Ramona Dūrena, Riga Technical University, Latvia |
| 13.30–13.40 | WOOD MIMIC COMPOSITES FROM CELLULOSE, HEMICELLULOSE AND LIGNIN Sergejs Beļuns, Riga Technical University, Latvia |
| 13.40–13.50 | ACCELERATED WEATHERING OF 3D-PRINTED NANOCOMPOSITES Anda Barkāne, Riga Technical University, Latvia |
| 13.50–14.00 | LAMINATION OF BIO-BASED FILMS WITH SPRAYED-ON CELLULOSE FOR SUSTAINABLE PACKAGING Mārtiņš Nābels-Šneiders, Riga Technical University, Latvia |
| 14.00–14.10 | DEVELOPMENT OF GRAPHENE-CONTAINING KEVLAR FABRIC COATING VIA LIQUID EXFOLIATION OF GRAPHITE Laimdota Vilcēna, Riga Technical University, Latvia |
| 14.10–14.20 | RESEARCH OF BALLISTIC VEST PANELS AND THEIR CONSTRUCTIVE COMPLIANCE WITH REGULATORY DOCUMENTS Dana Barkāne, Riga Technical University, Latvia |
| 14.20–14.30 | USE OF THE MARTINDALE TESTER IN DETERMINING THE TRIBOELECTRIC PROPERTIES OF TEXTILE MATERIALS Evelīna Mileika, Juris Blūms, Riga Technical University, Latvia |
| 14.30–14.40 | NMR STUDIES OF 6-AMINOSUBSTITUTED PYRIDO- AND PYRIMIDO-[1,2-<i>a</i>]BENZIMIDAZOLE-8,9-DIONES Anastasija Gaile, Riga Technical University, Latvia |
| 14.40–14.50 | INVESTIGATION OF THE SULFONYL GROUP DANCE FOR THE SYNTHESIS OF 4-AZIDO-6,7-DIMETHOXY-2-SULFONYL-QUINAZOLINES Dāgs Dāvis Līpiņš, Riga Technical University, Latvia |



RĪGAS TEHNISKĀ
UNIVERSITĀTE

RTU 64. starptautiskā zinātniskā
konference

Piektdiena,
6. oktobris

RTU Zinātniskās
bibliotēkas
konferenču zālē,
Paula Valdena ielā 5

PROGRAMMA

Mikroviļņu inženierija un elektronika

SEKCIJAS VADĪTĀJS

Dr. sc. ing. **Dmitrijs Pikuļins**,
Rīgas Tehniskā universitāte,
Latvija

Dr. sc. ing. **Artūrs Āboltiņš**,
Rīgas Tehniskā universitāte,
Latvija

Dr. sc. ing. **Anna Litviņenko**,
Rīgas Tehniskā universitāte,
Latvija

Dr. sc. ing. **Māris
Tērauds**, Rīgas Tehniskā
universitāte, Latvija

Dr. sc. ing. **Jānis Semēnako**,
Rīgas Tehniskā universitāte,
Latvija

ZINĀTNISKĀ KOMISIJA

Plkst. 10.30

PLAKĀTU SESIJA

FUNDAMENTĀLĀS FREKVENCES IETEKME UZ KOLPICA HAOSA OSCILATORA DINAMIKU

Darja Čirjuļina, Rīgas Tehniskā universitāte, Latvija

EKSPERIMENTĀLS PĒTĪJUMS PAR ANALOGO UN DISKRĒTO HAOSA OSCILATORU SINHRINIZĀCIJU

Ruslans Babajans, Rīgas Tehniskā universitāte, Latvija

OBJEKTU ATKLĀŠANA TRANSPORTLĪDZEKĻU DATU KOPU IZPLATĪŠANĀS LAIKA SIGNĀLOS AR DZIĻIEM PULSĒJOŠIEM KONVOLŪCIJU NEIRONU TĪKLIEM

Edgars Lielāmurs, Rīgas Tehniskā universitāte, Latvija

PUNKTU MĀKOŅU DATU KOPAS PRASĪBAS VIRSZEMES ELEKTROLĪNIJU 3D MODELĒŠANAI

Diāna Gauče, Rīgas Tehniskā universitāte, Latvija

FREKVENČU MODULĒTA ANTIPODĀLAS HAOTISKAS MANIPULĀCIJAS CIPARU SAKARU SISTĒMA

Filips Čapligins, Rīgas Tehniskā universitāte, Latvija

PAPLAŠINĀTĀ SPEKTRA HAOTISKIE SAKARI: SALĪDZINĀJUMS STARP HAOTISKO SINHRONIZĀCIJU UN SALĀGOTO FILTRĀCIJU

Nikolajs Tihomorskis, Rīgas Tehniskā universitāte, Latvija

PROGRESĪVĀ BEZVADU ENERĢIJAS PĀRVADE

Pāvels Krukovskis, Rīgas Tehniskā universitāte, Latvija

SMADZEŅU-DATORA SASKARNES: TO ATTĪSTĪBA, PERSPEKTĪVAS UN IEROBEŽOJUMI

Jānis Simanovičs, Rīgas Tehniskā universitāte, Latvija

UZ PROGRAMMĒJAMĀM AIZTURES LĪNIJĀM BALSTĪTS IMPULSA POZĪCIJAS MODULATORS AR 160 PS LAIKA IZŠĶIRTSPĒJU

Pauls Ēriks Šics, Rīgas Tehniskā universitāte, Latvija

Sandis Migla, Rīgas Tehniskā universitāte, Latvija



**RIGA TECHNICAL
UNIVERSITY**

64th International Scientific Conference
of Riga Technical University

**Friday,
October 6**

**Conferene hall, RTU
Scientific Library,
5 Paula Valdena Street**

PROGRAMME

Microwave Engineering and Electronics

HEAD OF THE SECTION

Dr. sc. ing. **Dmitrijs Pikulins**,
Riga Technical University,
Latvia

Dr. sc. ing. **Arturs Aboltins**,
Riga Technical University,
Latvia

Dr. sc. ing. **Anna Litvinenko**,
Riga Technical University,
Latvia

Dr. sc. ing. **Maris Terauds**,
Riga Technical University,
Latvia

Dr. sc. ing. **Janis Semenako**,
Riga Technical University,
Latvia

SCIENTIFIC COMMITTEE

10.30 POSTER SECTION

FUNDAMENTAL FREQUENCY IMPACT ON COLPITTS CHAOS OSCILLATOR DYNAMICS

Darja Cirjulina, Riga Technical University, Latvia

EXPERIMENTAL STUDY ON ANALOG AND DISCRETE CHAOS OSCILLATORS SYNCHRONIZATION

Ruslans Babajans, Riga Technical University, Latvia

OBJECT DETECTION ON AUTOMOTIVE TIME-OF-FLIGHT DATA WITH DEEP SPIKING CONVOLUTIONAL NEURAL NETWORKS

Edgars Lielamurs, Riga Technical University, Latvia

REQUIREMENTS TO POINT CLOUD DATASET FOR 3D MODELING OF OVERHEAD POWER LINES

Diana Gauce, Riga Technical University, Latvia

FREQUENCY MODULATED ANTIPODAL CHAOS SHIFT KEYING DIGITAL COMMUNICATION SYSTEM

Filips Capligins, Riga Technical University, Latvia

CHAOTIC SPREAD-SPECTRUM COMMUNICATION: COMPARISON BETWEEN CHAOTIC SYNCHRONIZATION AND MATCHED FILTERING

Nikolajs Tihomorskis, Riga Technical University, Latvia

ADVANCED WIRELESS POWER TRANSFER

Pavels Krukovskis, Riga Technical University, Latvia

BRAIN-COMPUTER INTERFACING: DEVELOPMENTS, PERSPECTIVES, AND LIMITATIONS

Janis Simanovics, Riga Technical University, Latvia

PROGRAMMABLE DELAY LINES-BASED PULSE POSITION MODULATOR WITH 160 PS TIME RESOLUTION

Pauls Eriks Sics, Riga Technical University, Latvia
Sandis Migla, Riga Technical University, Latvia

Opening and Keynote Session "Baltic Research Program"

SECTION CHAIR

Dr. **Andrei Blinov**, Tallinn University of Technology, Estonia
Professor **Ilya Galkin**, Riga Technical University, Latvia

| | |
|-------------|--|
| 10.00–10.30 | OPENING AND WELCOME ADDRESSES Professor Leonids Ribickis, Professor Oskars Krievs, Professor Antans Sauhats, Riga Technical University, Latvia |
| 10.30–11.10 | EXPERIENCE, CHALLENGES AND RESULTS IN CARRYING OUT A SCIENTIFIC COOPERATION PROJECT BETWEEN THE BALTIC COUNTRIES AND NORWAY – EMONDI Professor Raimondas Pomarnacki, Vilnius Gediminas Technical University, Lithuania |
| 11.10–11.50 | IoT BASED TOOLS AND METHODS FOR ELECTRICAL MACHINE DIAGNOSTICS Dr. Toomas Vaimann, Tallinn University of Technology, Estonia |
| 11.50–12.30 | OPTIMIZED RESIDENTIAL ENERGY STORAGE SYSTEMS – ORBES Dr. Andrei Blinov, Tallinn University of Technology, Estonia |
| 12.30–12.40 | ANNOUNCEMENTS Professor Ilya Galkin, Riga Technical University, Latvia |
| 12.40 | LUNCH (INVITATION ONLY) |

Electrical Machines, Drives and Vehicles

SECTION CHAIR

Professor **Valery Vodovozov**, Tallinn University of Technology, Estonia
Professor **Andrejs Podgornovs**, Riga Technical University, Latvia

| | |
|-------------|--|
| 13.15–13.30 | STUDY OF THE DISC-TYPE ELECTROMAGNETIC PUMP WITH PERMANENT MAGNETS FOR LIQUID METAL APPLICATIONS Arturs Brekis, University of Latvia, Latvia |
| 13.30–13.45 | ONLINE FAULT DETECTION AND DIAGNOSIS IN THREE PHASE INDUCTION MACHINES USING THE $\alpha\beta$ VECTOR APPROACH: A PRACTICAL IMPLEMENTATION Daniel Foito, Instituto Politecnico de Setubal, Portugal |
| 13.45–14.00 | PRELIMINARY DESIGN ANALYSIS OF AN AXIAL FLUX YOKELESS STATOR SWITCHED RELUCTANCE MACHINE Shahid Hussain, Tallinn University of Technology, Estonia |
| 14.00–14.15 | MODELLING A MOTOR COOLING SYSTEM WITH STATOR LAMINATION FINS Oleksandr Dobzhanskyi, Point Park University, USA |
| 14.15–14.30 | ANALYSIS OF COMMON MODE AND RAPIDLY VARYING VOLTAGE PROFILE ON STATOR CURRENT HARMONICS OF AN INVERTER-FED INDUCTION MOTOR Muhammad Usman Sardar, Tallinn University of Technology, Estonia |
| 14.30–14.45 | INTERRELATION AND SELECTION OF TEETH ZONE PARAMETERS OF A HOMOPOLAR INDUCTOR ALTERNATOR Deniss Brodnevs, Riga Technical University, Latvia |
| 14.45–15.00 | CONTROL OF PICK-AND-PLACE ROBOTS WITH REDUCED POWER CONSUMPTION Valery Vodovozov, Tallinn University of Technology, Estonia |
| 15.00–15.15 | IMPLEMENTATION OF HYBRID PWM WITH SMOOTH TRANSITIONS BETWEEN MODULATION MODES FOR RAILWAY TRACTION FIELD-ORIENTED CONTROL SYSTEM Vsevolod Burenin, Riga Technical University, Latvia |
| 15.15–15.30 | AN APPROACH TO PERMEANCE CALCULATION OF A TEETH ZONE OF A HIA USING MATLAB Deniss Brodnevs, Riga Technical University, Latvia |
| 15.30–15.45 | COFFEE BREAK (ROOM 114) |

Power Electronics (Part I)

SECTION CHAIR

Professor **Dmitri Vinnikov**, Tallinn University of Technology, Estonia
Professor **Ilya Galkin**, Riga Technical University, Latvia

| | |
|-------------|--|
| 16.30–16.45 | A THREE-PHASE UNFOLDING-BASED PFC TOPOLOGY WITH TWO INDUCTORS FOR ELECTRIC VEHICLES BATTERY CHARGING Parham Mohseni, Tallinn University of Technology, Estonia |
| 16.45–17.00 | ZERO CURRENT DETECTION CIRCUIT BASED ON SATURABLE TRANSFORMER APPLICATION IN GAN BASED DC-DC CONVERTER WITH TRIPLE-MODE SWITCHING Kaspars Kroičs, Riga Technical University, Latvia |
| 17.00–17.15 | STEP-UP/DOWN PARTIAL POWER CONVERTER WITH ENHANCED MPPT EFFICIENCY AROUND ZERO PARTIALITY Neelesh Yadav, Tallinn University of Technology, Estonia |
| 17.15–17.30 | IMPEDANCE NETWORK-BASED DIODE-CLAMPED MULTILEVEL INVERTER VOLTAGE BALANCING WITH CASCADED VOLTAGE MULTIPLIER Tanel Jalakas, Tallinn University of Technology, Estonia |
| 17.30–17.45 | SIX PHASE FAULT TOLERANT INVERTER USING A MULTILEVEL NINE SWITCH CONVERTER Armando Cordeiro, Instituto Politécnico de Lisboa; INESC ID Lisboa, Portugal |
| 17.45–18.00 | DROOP CONTROL IMPLEMENTATION IN BIDIRECTIONAL STEP-UP/DOWN PARTIAL POWER CONVERTER FOR BATTERY ENERGY STORAGE APPLICATIONS Naser Hassanpour, Tallinn University of Technology, Estonia |
| 18.00–18.15 | ISOLATED HIGH POWER DENSITY HIGH STEP-UP DC-DC CONVERTER Saeed Pourjafar, Tallinn University of Technology, Estonia |
| 18.15–18.30 | DC DROOP CONTROL STRATEGIES AND TUNING PRINCIPLES Indrek Roasto, Tallinn University of Technology, Estonia |

Power Engineering (Part I)

SECTION CHAIR

Professor **Aleksandrs Dolgicers**, Riga Technical University, Latvia

Professor **Tatjana Lomane**, Riga Technical University, Latvia

| | |
|-------------|--|
| 13.15–13.30 | THE ROLE OF HYDROGEN IN THE GREEN FUTURE OF THE BALTIC ENERGY SYSTEM Roman Petrichenko, Riga Technical University, Latvia |
| 13.30–13.45 | OPERATION, OPTIMIZATION AND TAXATION OF LARGE-SCALE COMBINED SOLAR AND HYDRO PUMPED STORAGE POWER PLANT Lubov Petrichenko, Riga Technical University, Latvia |
| 13.45–14.00 | COMPUTER SIMULATION OF MODES FOR BALTIC POWER SYSTEM AS PART OF ENTSO-E POWER UNIT Tatjana Lomane, Riga Technical University, Latvia |
| 14.00–14.15 | OPTIMAL GENERATION STRUCTURE WITHIN SUSTAINABLE ENERGY COMMUNITIES DEMAND Tatjana Lomane, Riga Technical University, Latvia |
| 14.15–14.30 | ENSURING FULLY RENEWABLE BALTIC POWER SYSTEM Roman Petrichenko, Riga Technical University, Latvia |
| 14.30–14.45 | APPLICATION OF ARBITRARY POLYNOMIAL CHAOS IN THE ANALYSIS OF POWER SYSTEM ADEQUACY Roman Petrichenko, Riga Technical University, Latvia |
| 14.45–15.00 | DIRECTIONAL EARTHFAULT PROTECTION OPERATION AND SETUP ASPECTS IN MEDIUM VOLTAGE COMPENSATED NETWORK Olegs Borscevskis, Riga Technical University, Latvia |
| 15.00–15.15 | NEW EXPERIENCE OF FUEL CELL MICRO CHP OPERATION IN LATVIA Jevgenijs Kozadajevs, Riga Technical University, Latvia |
| 15.15–15.30 | COFFEE BREAK (ROOM 114) |

Power Engineering (Part II)

SECTION CHAIR

Assistant Professor **Jevgenijs Kozadajevs**, Riga Technical University, Latvia
Professor **Laila Zemite**, Riga Technical University, Latvia

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|-------------|--|
| 15.30–15.45 | IMPACT OF VARIABLE FACTORS ON THE VIABILITY AND EFFICIENCY OF ENERGY COMMUNITIES: A SCENARIO SIMULATION STUDY IN LATVIA Roberts Lazdins, Riga Technical University, Latvia |
| 15.45–16.00 | DATA, ANALYTICS AND ALGORITHMS TO SUPPORT LOCAL ENERGY COMMUNITIES Evita Kairisa, Institute of Physical Energetics, Latvia |
| 16.00–16.15 | EFFECTS OF POOR QUALITY UPS Fatih Çıgırıkçı, Arçelik A.Ş., Turkey |
| 16.15–16.30 | A RESILIENT POWER SUPPLY APPROACH BY STRATEGIC INTERCONNECTION OF MULTIPLE MICROGRIDS Partha Kayal, National Institute of Technology Silchar, India |
| 16.30–16.45 | POWER SYSTEM MODELLING IN THE BALTIC COUNTRIES: DATA ACCESSIBILITY AND CONSISTENCY ASPECTS Jana Teremranova (Riga Technical University, Latvia) |
| 16.45–17.00 | HYBRID HEATING SYSTEM SIZING AND OPERATION CONTROL WITH NEURAL NETWORK BASED SIMULATION Dmitrijs Rusovs, Riga Technical University, Latvia |
| 17.00–17.15 | GREEN DAY AHEAD MARKET IN INDIAN POWER SECTOR Sonali Mangal, Grid Controller of India Limited, India |

Gala Dinner at Domus Auditorialis auditoria center, Zunda krastmala 8, from 19.30 till 22.30.

Power Engineering (Part III)

SECTION CHAIR

Professor **Aleksandrs Dolgicers**, Riga Technical University, Latvia
Professor **Tatjana Lomane**, Riga Technical University, Latvia

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|-------------|---|
| 10.00–10.15 | LET'S TAKE WHAT THE SUN GIVES US Josifs Survilo, Riga Technical University, Latvia |
| 10.15–10.30 | PURPOSEFUL CHANGE IN TRANSMISSION LINE Josifs Survilo, Riga Technical University, Latvia |
| 10.30–10.45 | POTENTIAL FOR WASTE HEAT RECOVERY IN A DIGITAL CURRENCY MINING FACILITY: A BUILDING INFRASTRUCTURE CASE STUDY Alejandro Parrado-Duque, The University of Quebec at Trois-Rivieres, Canada |
| 10.45–11.00 | ANALYSIS OF THE CONDITION TRANSFORMER AFTER A FAULT USING THE SFRA AND FDS METHOD Miroslav Gutten, University of Zilina, Slovakia |
| 11.00–11.15 | TOWARDS SUSTAINABLE TRANSPORT: EVALUATING POTENCIAL OF HYDROGEN FUEL CELL BUSES AND TRUCKS IN LATVIA Andris Bačkurs, Latvia University of Life Sciences and Technologies, Latvia |
| 11.15–11.30 | BASIS OF OPERATIONAL PLANNING METHODOLOGY IN DIVERSIFIED GAS DISTRIBUTION SYSTEMS Ainars Selickis, Riga Technical University, Latvia |
| 11.30–11.45 | ASSESSING FINANCIAL AND OPERATIONAL FEASIBILITY OF SOLAR ENERGY STORAGE Davids Kronkalns, Riga Technical University, Latvia |
| 11.45–12.00 | TECHNICAL CONDITION ASSESSMENT FRAMEWORK FOR STEEL UNDERGROUND GAS DISTRIBUTION PIPELINES IN LATVIA Aleksandrs Kuposovs, Riga Technical University, Latvia |
| 12.00–12.45 | LUNCH (INVITATIONS ONLY) |

Hybrid Session

SECTION CHAIR

Professor **Ilya Galkin**, Riga Technical University, Latvia
Professor **Dmitri Vinnikov**, Tallinn University of Technology, Estonia
Professor **Andrejs Podgornovs**, Riga Technical University, Latvia
Professor **Nadezhda Kunicina**, Riga Technical University, Latvia

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|-------------|---|
| 12.45–13.00 | AN ACADEMIC LABORATORY FOR ALL-ELECTRIC ENERGY COMMUNITIES: THE CASE STUDY OF PVZEN MICROGRID Angela Amato, Polytechnic University of Turin, Italy |
| 13.00–13.15 | COMPARISON OF POWER FLOW METHODS FOR DISTRIBUTION GRIDS Ahmed Gamal Ezzeldin Mohamed Ibrahim Mowafy, Riga Technical University, Latvia |
| 13.15–13.30 | SPECIFIC ELECTRICAL LOADS OF MULTI-APARTMENT RESIDENTIAL BUILDINGS IN THE AGGLOMERATION "MOSCOW – MOSCOW REGION" Yuri Soluyanov, Kazan State Power Engineering University, Russia |
| 13.30–13.45 | SECURE VIDEO IoT MONITORING SYSTEM BASED ON ESP32 Kristers Šabanks, University of Latvia, Latvia |
| 13.45–14.00 | A REVIEW OF ENERGY STORAGE TECHNOLOGIES – COMPARISON AND FUTURE CHALLENGES Christos Pergamalis, National and Kapodistrian University of Athens, Greece |
| 14.00–14.15 | COMPUTER VISION SYSTEM FOR AUTONOMOUS SEA BUCKTHORN HARVESTING ROBOT Jurijs Timofejevs, Riga Technical University, Latvia |
| 14.15–14.30 | CULTIVATING FUTURE-READY EDUCATION: STRIKING A BALANCE WITH PERSONALIZED EMPOWERMENT IN ELECTRICAL ENGINEERING Nadezhda Kunicina, Riga Technical University, Latvia |
| 14.30–14.45 | EVALUATION OF THE EFFICIENCY OF COLLABORATION BETWEEN UNIVERSITIES AND ENTERPRISES Antons Patlins, Riga Technical University, Latvia |
| 14.45–15.00 | CHOOSING OF ELECTRICAL ENGINEERING EQUIPMENT USING FUZZY MODELS IN EXPERT EVALUATION METHODS Elizaveta Staroverova, Kostroma State University of Technology, Russia |
| 15.00–15.15 | NAVIGATING NEW HORIZONS IN ELECTRICAL ENGINEERING EDUCATION Nadezhda Kunicina, Riga Technical University, Latvia |
| 15.15–15.30 | COFFEE BREAK (ROOM 114) |



**RIGA TECHNICAL
UNIVERSITY**

**Tuesday,
October 10**

**12-k1 Azenes Street,
Room 115**

IEEE 64th International Scientific Conference on Power and
Electrical Engineering of Riga Technical University (RTUCON) 2023

PROGRAMME

Electrical Engineering

SECTION CHAIR

Professor **Ilya Galkin**, Riga Technical University, Latvia
Dr. **Milan Belik**, University of West Bohemia, Czechia

| | |
|-------------|---|
| 15.30–15.45 | SELECTION OF MICROCONTROLLER BOARD AND STEPPER MOTOR DRIVER FOR FDM 3D PRINTING TO REDUCE POWER CONSUMPTION Vlads Vladinovskis, Riga Technical University, Latvia |
| 15.45–16.00 | PROCESSES IN LIVING ORGANISMS AS A SOURCE OF ELECTRICAL ENERGY Anatolijs Simonovs, Riga Technical University, Latvia |
| 16.00–16.15 | RESEARCH REGARDING THE METHODS FOR COMPUTING GROUNDING RESISTANCE Jelena Dikun, Higher Education Institution Klaipeda, Lithuania |
| 16.15–16.30 | PV SYSTEM FOR EMERGENCY POWER SUPPLY OF CATTLE-FARM IN WAR CONDITIONS Olena Rubanenko, Vinnitsya National Technical University, Ukraine |
| 16.30–16.45 | METHOD FOR ESTIMATING THE EFFICIENCY OF ENERGY RECYCLING FOR ELECTRIC TRANSPORT EQUIPPED WITH MOBILE SUPERCAPACITOR STORAGE SYSTEM Girts Stana, Riga Technical University, Latvia |
| 16.45–17.00 | DIGITAL TWIN OF PV SYSTEM FOR UKRAINIAN THERMAL POWER PLANT FLUE GAS CLEANING UNIT Milan Belik, University of West Bohemia, Czechia |
| 17.00–17.15 | PROSPECTS FOR THE USE OF ELECTRIC DRIVES IN URBAN PASSENGER VEHICLE TRANSPORT IN UKRAINE Roberts Grants, Riga Technical University, Latvia |

Power Electronics (Part II)

SECTION CHAIR

Associate Professor **Ingars Steiks**, Riga Technical University, Latvia
Dr. **Andrii Chub**, Tallinn University of Technology, Estonia

| | |
|-------------|--|
| 10.00–10.15 | A NEW HIGH STEP-UP NPC-BASED SWITCHED-CAPACITOR SEVEN-LEVEL GRID-TIED INVERTER FOR PV APPLICATIONS Tanel Jalakas, Tallinn University of Technology, Estonia |
| 10.15–10.30 | AN OVERVIEW OF WIDE VOLTAGE-RANGE ISOLATED DC-DC CONVERTERS Salman Khan, Tallinn University of Technology, Estonia |
| 10.30–10.45 | A SINGLE-PHASE HIGH-FREQUENCY ISOLATED QUASI-Z-SOURCE AC-AC CONVERTER WITHOUT COMMUTATION PROBLEM AND STEP-CHANGE FREQUENCY OPERATION Nasser Hassanpour, Tallinn University of Technology, Estonia |
| 10.45–11.00 | DESIGN OF GaN-BASES THREE-PHASE GRID-CONNECTED PV INVERTER Orkhan Karimzada, Sapienza University of Rome, Italy |
| 11.00–11.15 | COMPARISON OF GaN HEMT POWER LOSS CALCULATION METHODS FOR DAB CONVERTER Marcis Prieditis, Riga Technical University, Latvia |
| 11.15–11.30 | EV BATTERY CHARGING CONVERTERS WITH WIDE OUTPUT DC VOLTAGE RANGE Mohammad Mahad Nadeem, Tallinn University of Technology, Estonia |
| 11.30–11.45 | ANALYSIS AND STATIC MODE OPTIMIZATION OF SIMULTANEOUS INDUCTIVE AND CAPACITIVE COUPLED WIRELESS POWER TRANSFER SYSTEM Oleksandr Husev, Tallinn University of Technology, Estonia |
| 11.45–12.45 | LUNCH (INVITATIONS ONLY) |

Education in Engineering

SECTION CHAIR

Professor **Nadezhda Kunicina**, Riga Technical University, Latvia

| | |
|-------------|--|
| 15.30–15.45 | THE MATLAB GRADER: EXPANDING POSSIBILITIES WITH VARIOUS TASK VERSIONS Maris Terauds, Riga Technical University, Latvia |
| 15.45–16.00 | ENHANCING STUDENT MOTIVATION AND ACADEMIC SUCCESS. EFFECTIVE STRATEGIES FOR PROMOTING STUDY PROGRAMS IN EDUCATION Nadezhda Kunicina, Riga Technical University, Latvia |
| 16.00–16.15 | THE EVALUATION OF COOPERATION BETWEEN UNIVERSITIES Antons Patlins, Riga Technical University, Latvia |
| 16.15–16.30 | DEVELOPMENT OF MUTAL RECOGNITION OF EDUCATION APPROACH IN ADVANCED COMPUTER-ORIENTED ENGINEERING TECHNOLOGIES IN THE BALTIC REGION Jelena Caiko, Riga Technical University, Latvia |
| 16.30–16.45 | GEN Z ORIENTED ENGINEERING EDUCATION IN THE "INDUSTRY 4.0" AGE Zoja Raud, Tallinn University of Technology, Estonia |
| 16.45–17.00 | STUDY COURSES DIGITALISATION AT RTU ON THE BASIS OF HPC PLATFORM AND COMBINED LEARNING METHODOLOGY Nadezhda Kunicina, Riga Technical University, Latvia |
| 17.00–17.15 | A STRATEGIC APPROACH TO IMPLEMENTING PROBLEM-BASED LEARNING IN HIGHER EDUCATION THROUGH STUDENT-MANAGED LABORATORIES AND ADAPTING EXISTING COURSES Martins Priede, Riga Technical University, Latvia |
| 17.15–17.30 | SUSTAINABLE DEVELOPMENT OF THE PROFESSIONAL EDUCATION DURING THE PERIOD OF COVID19 Nadezhda Kunicina, Riga Technical University, Latvia |

Award Ceremony and Closing of the conference



RĪGAS TEHNISKĀ
UNIVERSITĀTE

RTU 64. starptautiskā zinātniskā
konference

Otrdien,
17. oktobrī

Āzenes iela 12,
201. auditorija

PROGRAMMA

Telekomunikācijas

SEKCIJAS VADĪTĀJS

Profesors **Vjačeslavs Bobrovs**,
Rīgas Tehniskā universitāte,
Latvija

Dr. sc. ing. **Ģ. Ivanovs**,
Rīgas Tehniskā universitāte,
Latvija

Dr. sc. ing. **J. Poriņš**,
Rīgas Tehniskā universitāte,
Latvija

Dr. sc. ing. **V. Bobrovs**,
Rīgas Tehniskā universitāte,
Latvija

Dr. sc. ing. **O. Ozoliņš**,
Rīgas Tehniskā universitāte,
Latvija

ZINĀTNISKĀ KOMISIJA

Dr. habil. phys. **A. Ozols**,
Rīgas Tehniskā universitāte,
Latvija

Dr. sc. ing. **R. Parts**,
Rīgas Tehniskā universitāte,
Latvija

Dr. sc. ing. **E. Lipenbergs**,
SPRK, Latvija

Dr. sc. ing. **D. Kalibatiene**,
VGTU, Lietuva

Dr. sc. ing. **J. Jeļinskis**,
"INCE", Latvija

Dr. sc. ing. **N. Bogdanovs**,
"LAFINVENTS", Latvija

Dr. sc. ing. **S. Spolītis**, Rīgas
Tehniskā universitāte, Latvija

Dr. sc. ing. **A. Ipatovs**, Rīgas
Tehniskā universitāte, Latvija

Dr. sc. ing. **A. Udaļcovs**,
"Ericsson", Zviedrija

12.30–12.40

ATKLĀŠANA

Profesors Sandis Spolītis, Sakaru sistēmu Tehnoloģiju izpētes centrs,
Telekomunikāciju institūts, Rīgas Tehniskā universitāte.

12.40–13.10

Ielūgtā runa

VIENPOLĀRU KVANTU KASKĀDES IERĪČU IESPĒJOTI BRĪVĀS TELPAS OPTISKIE SAKARI VIDĒJĀ INFRASARKANĀJĀ DIAPAZONĀ

Xiaodan Pang, Telekomunikāciju institūts, Rīgas Tehniskā universitāte

13.10–13.20

MĀKSLĪGĀ INTELEKTA PIELIETOJUMS TĪKLA TRAFIKA INŽENIERIJĀ

Tianhua Chen, Elans Grabs, Aleksandrs Ipatovs, Telekomunikāciju institūts,
Rīgas Tehniskā universitāte.

13.20–13.30

ZEMU IZMAKSU ŠĶIEDRAS BREGA REŽĢU MĒRPĀRVEIDOTĀJS

Andis Supe, Ruslans Sudņņiks, Arturs Ziemelis, Telekomunikāciju institūts,
Rīgas Tehniskā universitāte.

13.30–13.40

OPTISKĀS ŠĶIEDRAS DISPERSIJAS RAKSTUROŠANA AR ČETRU VIĻŅU MIJIEDARBI

Kaspars Zaķis, Sandis Spolītis, Andis Supe, Sakaru sistēmu Tehnoloģiju izpētes centrs,
Telekomunikāciju institūts, Rīgas Tehniskā universitāte.

13.40–13.50

FBG OPTISKIE SENSORI INFRASTRUKTŪRAS TEHNISKĀ STĀVOKĻA UZRAUDZĪBAS RISINĀJUMIEM

Uģis Seņkāns, Jānis Braunfelds, Sandis Spolītis, Vjačeslavs Bobrovs, Jurgis Poriņš,
Telekomunikāciju institūts, Rīgas Tehniskā universitāte

13.50–14.00

AUGSTA PĀRRAIDES ĀTRUMA ĪSA ATTĀLUMA DAUDZMODU SAKARU SISTĒMAS VEIKTSPĒJA

Rihards Mūrnieks, Sandis Spolītis, Vjačeslavs Bobrovs, Sakaru sistēmu Tehnoloģiju izpētes centrs,
Telekomunikāciju institūts, Rīgas Tehniskā universitāte.

14.00–14.10

SILĪCIJA FOTONIKA NĀKAMĀS PAAUDZES SAKARU TĪKLIEM

Armands Ostrovskis, Michael Koenigsmann, Toms Salgals, Benjamin Krüger, Fabio Pittala,
Ryan P. Scott, Hansjoerg Haisch, Hadrien Louchet, Aleksandrs Mariņins, Sandis Spolītis,
Jurgis Poriņš, Lu Zhang, Richard Schatz, Xianbin Yu, Vjačeslavs Bobrovs, Markus Gruen,
Xiaodan Pang, Oskars Ozoliņš, Sakaru sistēmu Tehnoloģiju izpētes centrs, Telekomunikāciju
institūts, Informācijas zinātnes un elektroniskās inženierijas koledža,
Keysight Technologies, RISE pētniecības institūts, KTH Lietišķās fizikas departaments.

14.10–14.20

PAUZE

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|-------------|--|
| 14.20–14.30 | FBG BĀZĒTU SENSORU TĪKLU IZVEIDE PRIEKŠ ATTĀLINĀTIEM UZRAUDZĪBAS RISINĀJUMIEM Ints Murans, Jānis Braunfelds, Uģis Seņkāns, Sandis Spolītis, Vjačeslavs Bobrovs, Sakaru sistēmu Tehnoloģiju izpētes centrs, Telekomunikāciju institūts, Rīgas Tehniskā universitāte. |
| 14.30–14.40 | EFEKTĪVA PLATJOSLA PASTIPRINĀTĀJA IZSTRĀDE ŠOPS RISINĀJUMIEM Dmitrijs Prigunovs, Toms Salgals, Telekomunikāciju institūts, Rīgas Tehniskā universitāte. |
| 14.40–14.50 | SILĪCIJA MIKRO RIŅĶA MODULATORA VEIKTSPĒJAS ANALĪZE UN NOVĒRTĒJUMS O JOSLAS UN C JOSLAS LIETOJUMIEM Kristaps Rubuls, Armands Ostrovskis, Dilan Enrique Ortiz Blanco, Aleksandrs Marinins, Ints Murāns, Arvīds Sedulis, Toms Salgals, Jurģis Poriņš, Xiaodan Pang, Sandis Spolītis, Vjačeslavs Bobrovs, Oskars Ozoliņš, Sakaru sistēmu Tehnoloģiju izpētes centrs, Telekomunikāciju institūts, Rīgas Tehniskā universitāte. |
| 14.50–15.00 | FEC KODU VEIKTSPĒJAS ANALĪZE WDM-PON PĀRRAIDES SISTĒMĀM Ričards Kudojars, Toms Salgals un Svitlana Matsenko, Telekomunikāciju institūts, Rīgas Tehniskā universitāte. |
| 15.00–15.10 | PASĪVO OPTISKO TĪKLU DARBĪBAS NOVĒRTĒJUMS OPTISKAJĀS C UN L JOSLĀS Nauris Silkāns, Jānis Braunfelds, Rihards Mūrnieks, Sandis Spolītis, Sakaru sistēmu Tehnoloģiju izpētes centrs, Telekomunikāciju institūts, Rīgas Tehniskā universitāte. |
| 15.10–15.20 | ŠĶĪEDRAS BREGA REŽĢA SENSORA PIELIETOJUMS DROŠĪBU SISTĒMU RISINĀJUMOS Imants Zālītis, Rihards Mūrnieks, Jānis Braunfelds, Sandis Spolītis, Sakaru sistēmu Tehnoloģiju izpētes centrs, Telekomunikāciju institūts, Rīgas Tehniskā universitāte. |
| 15.20–15.30 | NEIZKLIEDĒJOŠO STĀVOKĻU DINAMIKAS NOVĒRTĒJUMS NANOFOTONIKĀ Toms Salgals, Dmitrii Redka, Aleksander Krotovs, Aleksei Kuznetcovs, Vjačeslavs Bobrovs, Telekomunikāciju institūts, Rīgas Tehniskā universitāte. |
| 15.30–15.40 | JAUNAS KOMPLEKSAS PIEEJAS IZVEIDE UN NOVĒRTĒJUMS NANODAĻIŅU OPTISKAJAI MANIPULĀCIJAI Toms Salgals, Dmitrii Redka, Aleksander Krotovs, Aleksei Kuznetcovs, Vjačeslavs Bobrovs, Telekomunikāciju institūts, Rīgas Tehniskā universitāte. |
| 15.40–15.50 | JAUNU NE-ERMITISKO SINGULARITĀŠU NOVĒRTĒJUMS PILNĪGI DIELEKTRISKĀS NANOSTRUKTŪRĀS Toms Salgals, Dmitrii Redka, Aleksander Krotovs, Aleksei Kuznetcovs, Vjačeslavs Bobrovs, Telekomunikāciju institūts, Rīgas Tehniskā universitāte. |



RIGA TECHNICAL
UNIVERSITY

64th International Scientific Conference
of Riga Technical University

Tuesday,
October 17

12 Azenes street 12,
Room 201

PROGRAMME

Telecommunications

HEAD OF THE SECTION

Professor **Vjačeslavs Bobrovs**,
Riga Technical University,
Latvia

Dr. sc. ing. **G. Ivanovs**,
Riga Technical University,
Latvia

Dr. sc. ing. **J. Porins**,
Riga Technical University,
Latvia

Dr. sc. ing. **V. Bobrovs**,
Riga Technical University,
Latvia

SCIENTIFIC COMMITTEE

Dr. habil. phys. **A. Ozols**,
Riga Technical University,
Latvia

Dr. sc. ing. **R. Parts**,
Riga Technical University,
Latvia

Dr. sc. ing. **E. Lipenbergs**,
SPRK, Latvia

Dr. sc. ing. **D. Kalibatiene**,
VGTU, Lithuania

Dr. sc. ing. **J. Jelinskis**,
"INCE", Latvia

Dr. sc. ing. **N. Bogdanovs**,
"LAFINVENTS", Latvia

Dr. sc. ing. **S. Spolitis**, Riga
Technical University, Latvia

Dr. sc. ing. **A. Ipatovs**, Riga
Technical University, Latvia

Dr. sc. ing. **A. Udalcovs**,
"Ericsson", Sweden

12.30–12.40

OPENING

Sandis Spolitis, Communication Technologies Research Center, Institute of Telecommunications, Riga Technical University, Latvia

12.40–13.10

Keynote Speaker

FREE-SPACE OPTICAL COMMUNICATIONS IN THE MID-INFRARED RANGE ENABLED BY UNIPOLAR QUANTUM CASCADE DEVICES

Xiaodan Pang, Institute of Telecommunications, Riga Technical University

13.10–13.20

ARTIFICIAL INTELLIGENCE APPLICATION IN NETWORK TRAFFIC ENGINEERING

Tianhua Chen, Elans Grabs, Aleksandrs Ipatovs, Institute of Telecommunications, Riga Technical University

13.20–13.30

LOW COST FIBER BRAGG GRATING TRANSDUCER

Andis Supe, Ruslans Sudņiks, Arturs Ziemelis, Institute of Telecommunications, Riga Technical University

13.30–13.40

OPTICAL FIBER DISPERSION CHARACTERISATION THROUGH FOUR-WAVE MIXING

Kaspars Zakis, Sandis Spolitis, Andis Supe, Communication Technologies Research Center, Institute of Telecommunications, Riga Technical University

13.40–13.50

FBG SENSING SOLUTIONS FOR INFRASTRUCTURE STRUCTURAL HEALTH MONITORING APPLICATIONS

Ugis Senkans, Janis Braunfelds, Sandis Spolitis, Vjaceslavs Bobrovs, Jurgis Porins, Institute of Telecommunications, Riga Technical University

13.50–14.00

HIGH-SPEED SHORT-REACH MULTIMODE OPTICAL COMMUNICATION SYSTEMS' PERFORMANCE

Rihards Murnieks, Sandis Spolitis, Vjaceslavs Bobrovs, Communication Technologies Research Center, Institute of Telecommunications, Riga Technical University

14.00–14.10

SILICON PHOTONICS FOR NEXT-GENERATION NETWORKS

Armands Ostrovskis, Michael Koenigsmann, Toms Salgals, Benjamin Krüger, Fabio Pittala, Ryan P. Scott, Hansjoerg Haisch, Hadrien Louchet, Aleksandrs Marinins, Sandis Spolitis, Jurgis Porins, Lu Zhang, Richard Schatz, Xianbin Yu, Vjaceslavs Bobrovs, Markus Gruen, Xiaodan Pang, Oskars Ozolins, Communication Technologies Research Center, Institute of Telecommunications, College of Information Science and Electronic Engineering, RISE Research Institutes of Sweden, Department of Applied Physics, KTH Royal Institute of Technology

14.10–14.20

BREAK

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| 14.20–14.30 | <p>DESIGNING OF FBG BASED SENSOR NETWORKS FOR LONG-DISTANCE MONITORING SOLUTION</p> <p>Ints Murans, Janis Braunfelds, Ugis Senkans, Sandis Spolitis, Vjaceslavs Bobrovs, Communication Technologies Research Center, Institute of Telecommunications, Riga Technical University.</p> |
| 14.30–14.40 | <p>DEVELOPMENT OF AN EFFICIENT BROADBAND AMPLIFIER FOR FOTS SOLUTIONS</p> <p>Dmitrijs Prigunovs, Toms Salgals, Institute of Telecommunications, Riga Technical University.</p> |
| 14.40–14.50 | <p>PERFORMANCE ANALYSIS AND EVALUATION OF SILICON MICRO RING MODULATOR FOR O-BAND AND C-BAND APPLICATIONS</p> <p>Kristaps Rubuls, Armands Ostrovskis, Dilan Enrique Ortiz Blanco, Aleksandrs Marinins, Ints Murans, Arvids Sedulis, Toms Salgals, Jurgis Porins, Xiaodan Pang, Sandis Spolitis, Vjaceslavs Bobrovs, Oskars Ozolins, Communication Technologies Research Center, Institute of Telecommunications, Riga Technical University.</p> |
| 14.50–15.00 | <p>PERFORMANCE ANALYSIS OF FEC CODES FOR WDM-PON TRANSMISSION SYSTEMS</p> <p>Ricards Kudojars, Toms Salgals un Svitlana Matsenko, Institute of Telecommunications, Riga Technical University.</p> |
| 15.00–15.10 | <p>PERFORMANCE ASSESSMENT OF PASSIVE OPTICAL NETWORKS IN OPTICAL C AND L BANDS</p> <p>Nauris Silkans, Janis Braunfelds, Rihards Murnieks, Sandis Spolitis, Communication Technologies Research Center, Institute of Telecommunications, Riga Technical University.</p> |
| 15.10–15.20 | <p>IMPLEMENTATION OF FIBER BRAGG GRATING SENSORS FOR SECURITY SYSTEM APPLICATIONS</p> <p>Imants Zalitis, Rihards Murnieks, Janis Braunfelds, Sandis Spolitis Communication Technologies Research Center, Institute of Telecommunications, Riga Technical University.</p> |
| 15.20–15.30 | <p>EVALUATION OF DYNAMICS OF NON-SCATTERING STATES IN NANOPHOTONICS</p> <p>Toms Salgals, Dmitrii Redka, Aleksander Krotovs, Aleksei Kuznetcovs, Vjaceslavs Bobrovs, Institute of Telecommunications, Riga Technical University.</p> |
| 15.30–15.40 | <p>DEVELOPMENT AND EVALUATION OF NOVEL COMPLEX APPROACH TO THE OPTICAL MANIPULATION OF NANOPARTICLES</p> <p>Toms Salgals, Dmitrii Redka, Aleksander Krotovs, Aleksei Kuznetcovs, Vjaceslavs Bobrovs, Institute of Telecommunications, Riga Technical University.</p> |
| 15.40–15.50 | <p>EVALUATION OF NOVEL NON-HERMITIAN SINGULARITIES IN ALL-DIELECTRIC NANOSTRUCTURES</p> <p>Toms Salgals, Dmitrii Redka, Aleksander Krotovs, Aleksei Kuznetcovs, Vjaceslavs Bobrovs, Institute of Telecommunications, Riga Technical University.</p> |

