

66th International Scientific Conference
of Riga Technical University

Plenary Session

9:30–10:00	REGISTRATION AND COFFEE
10:10–10:30	WELCOME ADDRESS Academician Dr. sc. ing. Tālis Juhna , Rector of RTU
10:30–10:50	OBSERVATIONS AND FUTURE VISION FOR SCIENCE Dr. sc. ing. Maira Indrikova , Vice-Rector for Research
10:50–11:15	CELLS ON AUTOPILOT: HOW CONTROL ENGINEERING SHAPES LIVING MEDICINES Professor Dr. Mustafa Khammash , Department of Biosystems Science and Engineering, ETH Zürich
11:15 –11:35	INTERDISCIPLINARY COOPERATION AS THE KEY TO REGIONAL SCIENTIFIC GROWTH: THE EXPERIENCE OF RTU REZEKNE ACADEMY Associate Professor Dr. oec. Jeļena Lonska , RTU Rezekne
11:35	AWARDS CEREMONY Awarding of tenured professors' diplomas Awarding The Scientist of the Year 2025 The Young Female Scientist of the Year 2025 The Young Male Scientist of the Year 2025 RTU Scientific Article of the Year 2025 Awarding the Paul Walden Memorial Medal Awarding RTU Annual Academic Excellence Award – Teaching Staff 2025, RTU Academic Excellence of the Year Award – Young Teaching Staff 2025 RTU Academic Excellence Environmental Promoter 2025
	COFFEE AND SNACKS

* The working language of the plenary session is Latvian.

Simultaneous translation from Latvian to English.

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Civil and Mechanical Engineering

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	<i>Ph. D. Līva Pupure,</i> Riga Technical University, Latvia	

9:00–9:05 OPENING AND WELCOME ADDRESSES

Sandris Rucevskis, Riga Technical University, Latvia

9:05–9:40 FROM BIOPHYSICS TO MEDICAL RESEARCH: DISCOVERIES FROM SINGLE-MOLECULE MICROSCOPY

Davide Mazza, Università Vita-Salute San Raffaele, Italy

9:40–10:15 STARTUPS, BUSINESS MODELS & STARTUP LESSONS LEARNED

Ralph Sonntag, Stralsund University of Applied Sciences, Germany

10:15–10:35 COFFEE BREAK

Session I, Ķīpsalas iela 6A, "Big Bang"

10:35–10:50 DIAMOND NANOPARTICLES AS A NEW MATERIAL FOR NANO-DOSIMETRY

Mirko Rocca, Riga Technical University, Latvia

10:50–11:05 ARTIFICIAL INTELLIGENCE-ASSISTED SELECTION IN MEDICAL IMAGING TECHNOLOGIES

Nikola Nedaškowska¹², Sofija Bindere¹², Sofia Benvenuti³, Giorgia Falanga³, Mehmet Akif Ufacik¹,

¹Riga Technical University,

²Riga Stradins University, Latvia,

³Università Vita-Salute San Raffaele, Italy

11:05–11:20 NON-INVASIVE METHODOLOGY FOR ANALYSING HUMAN CERVICAL VERTEBRAE MOVEMENT: A NARRATIVE REVIEW

Nicole Burtovaja, Riga Technical University, Latvia

11:20–11:35 ATTACHMENT DYNAMICS OF SACCHAROMYCES CEREVISIAE YEAST CELLS TO THE SURFACES OF MICROPATTERNED UV-IRRADIATED SiO₂ SUBSTRATES

Hermanis Sorokins, Riga Technical University, Latvia

11:35–11:50 SURFACE FUNCTIONALIZATION OF NANOPARTICLES AND ITS INFLUENCE ON BIOMOLECULE ADSORPTION

Marks Gorohovs, Riga Technical University, Latvia

11:50–12:05 COFFEE BREAK

12:05–12:20	BIONICALLY INSPIRED DOUBLE-LAYER CAPACITIVE HAPTIC SENSOR FOR SMART TEXTILE APPLICATIONS Kornēlija Dvurečenska¹, Aleksejs Kataševs², Aleksandrs Okss², ¹ Rīga Teika Secondary School, ² Rīga Technical University, Latvia
12:20–12:35	PURIFICATION OF SHIP BALLAST WATER FROM HEAVY METAL IONS TO REDUCE POLLUTION Dagnis Beitāns-Špaks, Jurijs Dehtjars, Marks Gorohovs, Renāte Kalniņa, Igors Kozaks, Elizabete Skrebele, Hermanis Sorokins, Viktorija Špilova, Rīga Technical University, Latvia
12:35–12:50	VALIDITY OF THE DAID® SMART SOCKS FOR THE EVALUATION OF FOOT PLANTAR PRESSURE IN A SINGLE-LEG SQUAT STUDY Anna Davidoviča¹, Aleksejs Kataševs², Aleksandrs Okss², Darja Nesteroviča¹, Signe Tomsone¹, Guna Semjonova¹, ¹ Rīga Stradins University, ² Rīga Technical University, Latvia
12:50–13:30	LUNCH BREAK
13:30–13:50	COMETARY ACTIVITY MODELLING FOR THE ESA COMET INTERCEPTOR MISSION Gints Jasmonts¹, Andris Slavinskis^{1, 2}, ¹ Rīga Technical University, ² SIA NanoCraft, Latvia
13:50–14:05	POSSIBILITIES OF ALTERNATIVE FUEL USAGE IN AVIATION Jēkabs Pavlovskis, Rīga Technical University, Latvia
14:05–14:20	OXIDATION-RESISTANT COATINGS FOR CARBON-CARBON COMPOSITES IN AEROSPACE SYSTEMS Aleksandrs Kuzevanovs, Konstantins Savkovs, Anna Litviņenko, Rīga Technical University, Latvia
14:20–14:35	SHUNTING WORK OPTIMISATION AT RAILWAY MARSHALLING YARDS TO REDUCE TIME AND FUEL CONSUMPTION USING INNOVATIVE DIGITAL TECHNOLOGIES Oksana Iščuka, Mihails Gorobecs, Rīga Technical University, Latvia
14:35–14:50	ERROR GENESIS IN THE DECISION-MAKING PROCESS IN THE OPERATIONAL MANAGEMENT CYCLE Kirils Kļēpackis, Vladimirs Šestakovs, Rīga Technical University, Latvia
14:50–15:10	COFFEE BREAK
15:10–15:25	ELECTROSTATIC INDUCTION MODEL OF TEXTILE TRIBOELECTRIC GENERATOR Aleksejs Kataševs, Aleksandrs Okss, Ilgvars Gorņevs, Vilnis Jurkāns, Juris Blums, Rīga Technical University, Latvia
15:25–15:40	ELECTRICAL POTENTIAL ON SURFACES OF LASER-PROCESSED TITANIUM ALLOYS FOR IMPLANTS Arturs Aboliņš¹, Alberta Aversa², Jurijs Dehtjars¹, Māris Dortiņš¹, Marks Gorohovs¹ Lyubomir Lazov¹, Arturs Mamajevs¹, Hermanis Sorokins¹, Edmunds Sprūdžs¹, Elizabete Skrebele¹, ¹ Rīga Technical University, Latvia, ² Politecnico di Torino, Italy
15:40–15:55	BIOMEDIX PROJECT: BIOMEDICAL INNOVATIONS THROUGH DIGITAL TRANSFORMATION OF ADDITIVE TECHNOLOGIES AND KNOWLEDGE EXCHANGE Marks Gorohovs, Jurijs Dehtjars, Rīga Technical University, Latvia
15:55–16:10	CALLME PROJECT: A COLLABORATIVE E-PLATFORM FOR INNOVATION AND EDUCATIONAL ENHANCEMENT IN MEDICAL ENGINEERING Marks Gorohovs, Jurijs Dehtjars, Rīga Technical University, Latvia
16:10	CLOSURE, DISCUSSIONS