



VILNIUS  
TECH

International Conference  
TRANSBALTICA:  
Transportation Science and Technology

# Conference Programme





Entrance

VILNIUS TECH Plytinės Building  
Corpus P2, Auditorium P2-156  
Plenary Session, In-Person Session  
Plytinės Street 25

VILNIUS TECH Transport Building  
Plytinės Street 27

VILNIUS TECH Plytinės Building  
Corpus P1, Auditorium P1-315  
Dinner, Lunch and Closing Remarks  
Plytinės Street 25

Time (EEST, UTC+3)	<b>14 September 2023: First Day of the Conference</b>		
10:30 – 11:00	Welcome Coffee and Registration (Auditorium: P2-156)		
11:00 – 13:00	<b>PLENARY SESSION (Auditorium: P2-156)</b> <i>Virtual Room:</i> <a href="https://liedm.zoom.us/my/transbaltica">https://liedm.zoom.us/my/transbaltica</a>		
	Opening Speech	<ul style="list-style-type: none"> <li>• <b>Assoc. Prof. Paulius Skačkauskas</b>, Scientific Committee of the 14th International Scientific Conference “Transbaltica 2023: Transportation Science and Technology”</li> </ul>	
	Welcome Speech	<ul style="list-style-type: none"> <li>• <b>Prof. Olegas Prentkovskis</b>, Dean of the VILNIUS TECH Faculty of Transport Engineering</li> </ul>	
	<i>Plenary Session Speakers:</i> <ul style="list-style-type: none"> <li>• <b>Margarita Prokopovič</b> (VILNIUS TECH): Collaboration Between University and Industry</li> <li>• <b>Artūras Nareika</b> (Jungent Baltic Oil Division): Sustainability – What Does It Mean in Lubricants Business</li> <li>• <b>Eimantas Sinkevičius</b> (Yara International): Disruptive Innovations in Logistics</li> </ul>		
13:00 – 13:30	Break: Refreshments and Snacks (Auditorium: P2-156)		
13:30 – 15:00	<b>PARALLEL SESSIONS</b>		
	Auditorium P2-156: <i>In-Person</i> <a href="https://liedm.zoom.us/my/transbaltica">https://liedm.zoom.us/my/transbaltica</a>	<i>Virtual Room 1:</i> <i>Vehicle Engineering and Dynamics</i> <a href="https://liedm.zoom.us/my/transbaltica1">https://liedm.zoom.us/my/transbaltica1</a>	<i>Virtual Room 2:</i> <i>Logistics and Transportation</i> <a href="https://liedm.zoom.us/my/transbaltica2">https://liedm.zoom.us/my/transbaltica2</a>
15:00 – 16:00	Tour in the new VILNIUS TECH Laboratory Building		
16:00	Dinner (Auditorium: P1-315)		

Time (EEST, UTC+3)	<b>15 September 2023: Second Day of the Conference</b>			
9:30 – 10:00	Welcome Coffee (Auditorium: P2-156)			
10:00 – 12:00	<b>PARALLEL SESSIONS</b>			
	Auditorium P2-156: <i>In-Person</i> <a href="https://liedm.zoom.us/my/transbaltica">https://liedm.zoom.us/my/transbaltica</a>	<i>Virtual Room 3:</i> <i>Vehicle Engineering and Dynamics</i> <a href="https://liedm.zoom.us/my/transbaltica3">https://liedm.zoom.us/my/transbaltica3</a>	<i>Virtual Room 4:</i> <i>Railway Transport</i> <a href="https://liedm.zoom.us/my/transbaltica4">https://liedm.zoom.us/my/transbaltica4</a>	<i>Virtual Room 5:</i> <i>Logistics and Transportation</i> <a href="https://liedm.zoom.us/my/transbaltica5">https://liedm.zoom.us/my/transbaltica5</a>
12:00	Lunch and Closing Remarks (Auditorium: P1-315)			

**PARALLEL SESSIONS (14 September 2023, 13:30 – 15:00)**

<p align="center"><i>Auditorium P2-156:</i> <i>In-Person</i> <b>Chairman: Prof. Michał Stosiak</b> <b>Co-Chairman: Assoc. Prof. Paulius Skačkauskas</b> <a href="https://liedm.zoom.us/my/transbaltica">https://liedm.zoom.us/my/transbaltica</a></p>	<p align="center"><i>Virtual Room 1:</i> <i>Vehicle Engineering and Dynamics</i> <b>Chairman: Assoc. Prof. Mykola Karpenko</b> <b>Co-Chairman: Prof. Vidus Žuraulis</b> <a href="https://liedm.zoom.us/my/transbaltica1">https://liedm.zoom.us/my/transbaltica1</a></p>	<p align="center"><i>Virtual Room 2:</i> <i>Logistics and Transportation</i> <b>Chairman: Assoc. Prof. Viktor Skrickij</b> <b>Co-Chairwoman: Assoc. Prof. Kristina Čižiūnienė</b> <a href="https://liedm.zoom.us/my/transbaltica2">https://liedm.zoom.us/my/transbaltica2</a></p>
<p align="center">Safety Behaviour of Heavy Truck Drivers in International Transport <i>(Sebastjan Škerlič, Robert Muha, Vanja Erčulj)</i></p>	<p align="center">Rational Choice of Powers Ration of Engines of Tractor Vehicle and Active Trailer Link <i>(Mykhailo Podryhalo, Ruslan Kaidalov, Ihor Hrytsuk, Vasyl Omelchenko)</i></p>	<p align="center">Development of Rail Freight Transport Considering the International Intermodal Transport and Logistics: Lithuanian Case <i>(Aldona Jarašūnienė, Dmitrij Ševaldin, Stasys Steišūnas)</i></p>
<p align="center">Experimental Study of the Multi-Disc Negative Brake for a Hydraulic Motor <i>(Pawel Sliwinski, Ryszard Jasinski)</i></p>	<p align="center">Using of the Trucks with Electrical Drive on the Farm Enterprises <i>(Valerii Dembitskyi, Igor Murovanyi, Volodymyr Sakhno, Mykola Maiak)</i></p>	<p align="center">Sustainable Digital Marketing and Digital Supply Chain Management Theoretical Aspects <i>(Margarita Išoraitė)</i></p>
<p align="center">The Purpose of the Research Agenda for Rail Wagon Predictive Maintenance <i>(Mateusz Zajac, Artur Kierzkowski, Agnieszka Tubis, Tomasz Kisiel, Franciszek Restel, Ewa Mardeusz, Jacek Ryczynski)</i></p>	<p align="center">Simulation of Thermoelectric Coolers for Automotive Temperature Stabilization Systems <i>(Andrii Bucaros, Oleg Onishchenko)</i></p>	<p align="center">Modelling the Potential Impact of the Application of Environmentally Friendly Transport Applied in Last-Mile Delivery on the National Economy: the Case of Latvia <i>(Astra Auzina-Emsina)</i></p>
<p align="center">How the War in Ukraine Impacts Global Air Transportation Ecosystem: Assessment and Forecasting of Consequences <i>(Viktoriia Ivannikova, Olena Sokolova, Kostiantyn Cherednichenko)</i></p>	<p align="center">Resilience of Life Support Systems for Crewed Autonomous Transport Systems for Extended Space Missions in Isolated Environment <i>(Igor Kabashkin, Sergey Glukhikh)</i></p>	<p align="center">Green Logistics: From Theory to Practice <i>(Aldona Jarašūnienė, Margarita Išoraitė)</i></p>
<p align="center">Perceiving the Resilience of Land Transport Critical Entities <i>(David Rehak, Heidi Janeckova)</i></p>	<p align="center">The Hazards of Batteries Used in Electric Vehicles and Ensuring Their Safety <i>(Tomas Pasaulis, Robertas Pečeliūnas)</i></p>	<p align="center">Challenges for Enhanced Military Mobility on the Eastern Flank of NATO <i>(Jaroslav Kompan, Michal Hrnčiar)</i></p>
<p align="center">Manual Waste Sorting Study in Conveyor Transport System Based on Virtual Reality <i>(Robert Giel, Alicja Dąbrowska)</i></p>	<p align="center"><i>Optimization of the Power Drive of a Mild Hybrid Vehicle</i> <i>(Oleksandr Dzyubenko, Volodymyr Dvadnenko)</i></p>	<p align="center">Sustainable Supply Chain Management Tools <i>(Margarita Išoraitė)</i></p>
<p align="center">The Use of Fault Tree Analysis to Create Adverse Event Scenarios for the Purposes of Cargo Zone Crew Training at the Airport <i>(Agnieszka Tubis, Honorata Poturaj, Ewa Mardeusz, Tomasz Kisiel)</i></p>	<p align="center">Operational Risks When Transporting Gas and Gas-Hydrogen Mixtures Through Existing Gas Pipelines <i>(Liubomyr Poberezhnyi, Liubov Poberezhna, Pavlo Popovych)</i></p>	<p align="center">Technology Advancement in Relation to Transport Poverty <i>(Mariusz Kostrzewski, Ahmed Eliwa, Yahya Abdelatty)</i></p>

**PARALLEL SESSIONS (15 September 2023, 10:00 – 12:00)**

<p align="center"><i>Auditorium P2-156: In-Person</i></p> <p align="center"><b>Chairwoman: Assoc. Prof. Viktoriia Ivannikova</b> <b>Co-Chairman: Assoc. Prof. Paulius Skačkauskas</b> <a href="https://liedm.zoom.us/my/transbaltica">https://liedm.zoom.us/my/transbaltica</a></p>	<p align="center"><i>Virtual Room 3: Vehicle Engineering and Dynamics</i></p> <p align="center"><b>Chairman: Prof. Vidas Žuraulis</b> <b>Co-Chairman: MSc. Paulius Kojis</b> <a href="https://liedm.zoom.us/my/transbaltica3">https://liedm.zoom.us/my/transbaltica3</a></p>	<p align="center"><i>Virtual Room 4: Railway Transport</i></p> <p align="center"><b>Chairman: Prof. Gintautas Bureika</b> <b>Co-Chairman: Assoc. Prof. Mykola Karpenko</b> <a href="https://liedm.zoom.us/my/transbaltica4">https://liedm.zoom.us/my/transbaltica4</a></p>	<p align="center"><i>Virtual Room 5: Logistics and Transportation</i></p> <p align="center"><b>Chairwoman: Assoc. Prof. Kristina Čižiūnienė</b> <b>Co-Chairman: Prof. Olegas Prentkovskis</b> <a href="https://liedm.zoom.us/my/transbaltica5">https://liedm.zoom.us/my/transbaltica5</a></p>
<p>Possibilities of Applying Biometric Data Scanning Tools in Vehicles <i>(Margarita Prokopovič, Kristina Čižiūnienė)</i></p>	<p>Determining the Growth of Energy Consumption and Power to Increase the Speed of the Car <i>(Mykola Mykhalevych, Sergiy Shuklinov, Yuliia Umantseva)</i></p>	<p>Reduction of Energy Consumption by Electric Rolling Stock of Quarry Railways <i>(Ievgen Riabov, Liliia Kondratieva, Liliia Overianova, Bagish Yeritsyan, Sergey Goolak)</i></p>	<p>Visualization Creation of the Klaipeda Seaport for the Navigational Simulator <i>(Arvydas Jankauskas, Nijolė Batarlienė, Vytautas Dubra)</i></p>
<p>Supply Chain Digital Maturity Modeling – A Case Study of a Wood-Based Supply Chain <i>(Natalia Gnacy, Sylwia Werbińska-Wojciechowska)</i></p>	<p>Application of Laser Technologies for Scanning Communication Routes While Restoring the Infrastructure of Ukraine <i>(Sergii Panchenko, Yevgeniia Ugnenko, Elena Uzhviieva, Yevhen Korostelov, Nataliia Sorochuk)</i></p>	<p>Prevention of Crisis Situations During the Operation of the Critical Infrastructure of Railway Transport <i>(Valerii Samsonkin, Oksana Yurchenko, Iuliia Bulgakova, Oleksandra Soloviova, Assem Akbaeva)</i></p>	<p>Simulation of Truck Customs Terminal Work <i>(Prokudin Georgii, Chupaylenko Oleksii, Khobotnia Tanya, Hilevska Kateryna, Prokudina Irina)</i></p>
<p>Vibrations of Micro-Hydraulic Pipes Induced by Pulsatile Fluid Flow <i>(Michał Stosiak, Mykola Karpenko, Paulius Skačkauskas, Adam Deptuła, Justina Krawczyk)</i></p>	<p>Distribution Optimization for Connected Autonomous Vehicles (CAV) Considering Fuel Consumption Optimization <i>(Guangyuan Yang, Hui Ma, Keqi Chen, Aoran Zhou)</i></p>	<p>Determination Modelling of Ukraine’s High-Speed Railways with Shared Use for Passengers and Cargo Service <i>(Andrii Pozdniakov, Viktor Myronenko, Olga Pozdniakova)</i></p>	<p>Comprehensive Service of Refrigerated Containers in Intermodal Transport Chains <i>(Ludmiła Filina-Dawidowicz, Mykhaylo Postan, Paweł Grzelak, Julia Sienkiewicz)</i></p>
<p>Progressive Tool Modernization Using Sensor Technology in Automotive Parts Manufacturing <i>(Juras Skardžius, Saulius Nagurnas, Vidas Žuraulis)</i></p>	<p>The Conceptual Model for Increasing Wear Resistance and Lubrication Efficiency for Non-Conformal and Conformal Friction Units from the Standpoint of Micro-EHD Theory <i>(Mykola Dmitrichenko, Oleksandr Milanenko, Anatoliy Savchuk, Yuliia Turytsia, Oleksiy Kushch, Andriy Bobro)</i></p>	<p>Approaches to Improving the Locomotive Maintenance Organization System Through the Introduction of Reliability Centered Maintenance <i>(Oleksandr Ochkasov, Maksim Ocheretniuk, Viačeslav Petrenko)</i></p>	<p>Digitalization of the Logistics Sector: The Case of Lithuania <i>(Ieva Meidutė-Kavaliauskienė, Urtė Antanaitytė, Renata Činčikaitė)</i></p>
<p>Comparison of the Development of Private Car and Railway Transport Systems in Europe <i>(Gediminas Vaičiūnas)</i></p>	<p>Peculiarities Traffic Accidents With the Participation of Motorcyclists <i>(Ludmila Macurová, Pavol Kohút, Ján Ondruš, Michal Ballay)</i></p>	<p>Study of Effect of Oil Replenishment on the Amount of Mechanical Impurities in Multi-Unit Diesel Engine Oil <i>(Gediminas Vaičiūnas, Stasys Steišūnas)</i></p>	<p>Research on the Relationship Between the Length of Superior Road Infrastructure and Foreign Direct Investment in the Slovak Republic <i>(Martin Zuzaniak, Vladimír Konečný)</i></p>
<p>User and Operator Friendly Outdoor Car Parking Lot Occupancy Detection (OCPLOD) System Design: Ondokuz Mayıs University Example <i>(Metin Mutlu Aydın, Zahid Enes Genç, Recep Arslan, Dimitris Potoglou)</i></p>	<p>Emissions of Petroleum Products from Roads Into Roadside Soils as Part of Exhaust Gas Emissions And Surface Wastewater <i>(Valentina Iurchenko, Oksana Melnikova, Larysa Mykhailova)</i></p>	<p>Estimation of Running Smoothness and Derailment Stability Considering the Parameters of Passenger Car Suspension <i>(Gintautas Bureika)</i></p>	<p>Analysis of Compliance of the Lithuanian Railway Infrastructure as a Unified North Atlantic Treaty Organization Supply System with the Requirements <i>(Ieva Meidutė-Kavaliauskienė, Renata Činčikaitė, Almantas Liepuonis)</i></p>
<p>Risk Assessment for the Preparation of Training Scenarios for Tram Drivers <i>(Agnieszka A. Tubis, Artur Kierzkowski, Łukasz Wolniewicz, Ewa Mardeusz, Franciszek Restel, Tomasz Kisiel, Mateusz Zajac)</i></p>	<p>New Sustainable and Economical Tank Shapes for the Oil and Gas Transport Infrastructure of Ukraine <i>(Anton Makhinko, Nataliia Makhinko, Viktor Karpov, Katerina Krayushkina, Oleksandr Kordun)</i></p>	<p>Customer Center as a Tool for Increasing Competitiveness in Rail Freight Transport <i>(Eva Nedeliakova)</i></p>	<p>Assessment of the Correct Distribution of the Selected Type of Goods on the Loading Area of the Semi-Trailer: Case Study <i>(Arnold Jančár, Ján Ondruš)</i></p>
<p>The Influence of Track Vertical Irregularities on the Crane Dynamic Behaviour <i>(Viačeslav Petrenko)</i></p>	<p>Exploring Concrete Scrap as a Promising Building Material for Restoration Ukraine’s Transport Infrastructure <i>(Katerina Krayushkina, Oleksandr Lapenko, Nataliia Makhinko)</i></p>		
<p>Employing Digital Twins in Operation and Maintenance Management of Transportation Systems <i>(Robert Giel, Sylwia Werbińska-Wojciechowska, Klaudia Winiarska)</i></p>	<p>Design of a Vehicle Monitoring System for the Needs of Security Managers <i>(Martin Boros, Andrej Velas, Zuzana Zvakova, Jozef Svetlik)</i></p>		
<p>Reliability of Fuel Supply Chains During Military Operations – Case Study <i>(Jacek Ryczyński, Artur Kierzkowski)</i></p>	<p>The Current State of Using Drones for Property Protection in Slovakia <i>(Andrej Veľas, Jakub Ďurica, Martin Boroš)</i></p>		