

Automotive and Railway Transport

Chairman – Dr. **S. Japertas**

Co-Chairman – Dr. **V. Lukoševičius**

10.00 – 18.00	Session
11.40 – 12.00	Coffee Break
13.30 – 14.15	Lunch
16.00 – 16.20	Coffee Break

Validation of a Multi-Body Human Model for Efficient Rear Impact Simulations

S. Himmetoglu, Hacettepe University (Turkey)

An Analysis of Head-on Frontal Collisions by Modelling Crash Tests

S. Himmetoglu, Hacettepe University (Turkey)

Comparative Study of Diesel and Compressed Natural Gas (CNG) Engine

M. Dziwiątkowski, D. Szpica, Bialystok University of Technology (Poland)

Computational Evaluation of the Compression Ratio Impact on External and Economic Indicators of a Piston Pneumatic Engine

D. Szpica, M. Korbut, Bialystok University of Technology (Poland)

The Proposal of Functions Describing the Opening and Closing Process of the Low-pressure Gas-phase Injector

D. Szpica, M. Kuszniar, Bialystok University of Technology (Poland)

Conditions for the Use of Optimal Energy-saving Driving Cycles of Trucks on Highways

M. Oliskevych, Lviv National Agrarian University, **R. Pelio**, National University "Lvivska Politechnika" (Ukraine)

Mathematical Modeling and Computational Study of a Passenger Car Dynamics During Acceleration

O. Osetrov, B. Chuchumenko, National Technical University "Kharkiv Polytechnic Institute", **A. Polivyanchuk**, O.M. Beketov National University of Urban Economy in Kharkiv, **V. Korohodskyi**, Kharkiv National Automobile and Highway University (Ukraine)

Assessment of the Stellite Valve Clearance in a Dual-Fuel CI Engine Powered by Natural Gas and Diesel

P. Cybulko, Medgal sp. z o. o., **B. Szczucka – Lasota, T. Węgrzyn**, Silesian University of Technology (Poland)

Methodology for Assessing the Ecological Safety of Cars

R. Zaripov, N. Sembayev, Torighyrov University (Kazakhstan), **P. Gavrilovs**, Riga Technical University (Latvia)

Study of the Influence of a Semi-Trailer Technical State on Handling and Manoeuvrability

O. Kravchenko, Zhytomyr Polytechnic State University, **V. Polyakov**, National Transport University Mykhaila Omelianovycha-Pavlenka (Ukraine), **K. Kravchenko, J. Dizo**, University of Zilina (Slovak Republic)

Research of the Impact of Road Surface, Tire Pressure and Automobile Speed on the Braking Distance

J. Liebuviene, V. Jokubyniene, Klaipeda State University of Applied Sciences (Lithuania)

Assessment of Railway Infrastructure Development in Central-Eastern Europe Using Taxonomic Method

A. Massel, Railway Research Institute (Poland)

Market Liberalisation of Railway Freight Transport in Croatia

K. Solina, Croatian Regulatory Authority for Network Industries, **B. Abramović, N. Brnjac**, University of Zagreb (Croatia)

Rational Integration Level of Solar Generation in Traction Power Supply Substations for Supplying Auxiliary Consumers

M. Kuznetsov, Institute of Renewable Energy of the National Academy of Sciences of Ukraine (Ukraine), **V. Kuznetsov, P. Hubsykyi**, Railway Research Institute (Poland), **Vit. Kuznetsov**, National metallurgical academy of Ukraine, **O. Ostapchuk**, National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", Institute of Renewable Energy of the National Academy of Sciences of Ukraine (Ukraine)

Impact of Station Modernisation Projects on Railway System Resilience

M. Feszczyn, P. Smoczyński, A. Gill, Poznan University of Technology (Poland)

Train Driver Reliability Analysis with the Use of HCR and Train Simulation Program

W. Miler, A. Gill, P. Smoczyński, Poznan University of Technology (Poland)

Economic Externalities of the Panama Metro Network

A. Berbey-Alvarez, H. Alvarez, J. Guevara-Cedeño, Universidad Tecnológica de Panamá (Panama), **M. Meztis**, Transport Academy, "Ērmes", **R. Muhitovs**, Riga Technical University (Latvia) (Latvia)

Watering of Cargo for Reducing Dust Emissions from Coal Wagon

M. Biliaiev, V. Kozachyna, P. Mashykhina, Dnipro National University of Railway Transport named after academician V. Lazaryana, **V. Biliaieva**, Oles Honchar Dnipro National University, **O. Berlov**, Prydniprovska State Academy of Civil Engineering and Architecture, **S. Tyshchenko**, Dnipro State Agrarian and Economic University (Ukraine)

Road with Fan for Reducing Exposure to Traffic Emissions

M. Biliaiev, V. Kozachyna, M. Oladipo, Dnipro National University of Railway Transport named after academician V. Lazaryana, **T. Rusakova, V. Biliaieva**, Oles Honchar Dnipro National University (Ukraine)

Reduction of Guiding Forces in Curves - Comparison of Fundamental Solutions

J. Kalivoda, Czech Technical University in Prague (Czech Republic)

Dynamic Loading Determination of the Supporting Structure of the Hopper Wagon Having Elastic Elements in the Center Sill

O. Fomin, University of Infrastructure and Technologies (Ukraine), **J. Gerlici, Y. Fomina**, University of Zilina (Slovak Republic), **A. Lovska**, Ukrainian State University of Railway Transport (Ukraine)

Engineering Design of a Tyre-rail Adapter for a Light Road-Rail Vehicle

J. Dižo, M. Blatnický, J. Fiačan, University of Zilina (Slovak Republic), **S. Semenov, E. Mikhailov**, Volodymyr Dahl East Ukrainian National University (Ukraine)

Design of a Track Chassis of the Locust 1203 Skid-steer Loader

M. Blatnický, J. Dižo, University of Zilina (Slovak Republic), **O. Kravchenko**, Zhytomyr Polytechnic State University (Ukraine)

Algorithm for Train Overtaking at Railway Stations within Railway Line Simulation Models with Parameter Fine-tuning

T. Vyčítal, M. Bažant, University of Pardubice (Czech Republic)

Section of Double-tracked Railway Line with Switch Point Area in the Middle: a Simulation Capacity Assessment

J. Bulíček, M. Bažant University of Pardubice (Czech Republic)

Comparison of Energy Performance of Railway Rolling Stock on the Žilina – Rajec Railway Line

J. Čamaj, A. Šperka, M. Dedík, K. Hrudkay, University of Zilina (Slovak Republic)

Perspectives of High-speed Train Traffic in Ukraine at the Stage of Integration with the European Network

M. Kurhan, D. Kurhan, M. Husak, N. Hmelevska, Dnipro National University of Railway Transport named after academician V. Lazaryana (Ukraine)

HYPERNEX: Ignition of the European Hyperloop Ecosystem Project Within Horizon 2020

E. Wawrzyn, K. Polak, Railway Research Institute (Poland)

Efficiency of Environmental Energy Conversion in Internal Combustion Engines. Evaluation of Ideal Thermodynamic Cycles

P. Hashchuk, Lviv State University of Life Safety, **S. Nikipchuk**, Lviv Polytechnic National University (Ukraine)

A Review of Options Regarding Improvements in the Performance Parameters of the 'Belarus 112H-01' Mini-Tractor

N. Dobrzinskij, General Jonas Žemaitis Military Academy of Lithuania (Lithuania)

A Practical way to Determine Slippage and Lead in the Front Wheels of the 'Belarus 112H-01' Mini-Tractor

N. Dobrzinskij, General Jonas Žemaitis Military Academy of Lithuania (Lithuania)

Investigation and Analysis on Fun Buggy Simulation

M. N. Uppu, KTU, **A. Darguzis**, KTU, Kaunas University of Applied Engineering Sciences (Lithuania)

Research of the ABS Effect on Car Braking Distance under Different Conditions

D. Juodvalkis, KTU, Kaunas University of Applied Engineering Sciences (Lithuania)

Investigation of the Adhesion of Snow Car Tyres to the Road Surface

D. Juodvalkis, R. Skvireckas, KTU, Kaunas University of Applied Engineering Sciences (Lithuania)