

Elżbieta Macioszek
Irena Jurdana
Grzegorz Sierpiński *Editors*

Smart and
Environmentally
Friendly Contemporary
Road Traffic and
Transportation
Engineering Solutions



Springer

Contents

Road Traffic Engineering, and Road Traffic Safety

Analyzing the Relationship Between Built Road Environment and Perceived Road Safety. A Case Study in Four Cities in Flanders, Belgium	3
<i>Girma Fikre, An Neven, and Davy Janssens</i>	
Setting Priorities for Safety Improvements on Two-Lane Roads in Israel	16
<i>Victoria Gitelman</i>	
Not Just the Driver: How Road Design Influences Speeding and Traffic Safety	30
<i>Marko Šoštarić, Marijan Jakovljević, Juraj Leonard Vertlberg, and David Gruhonjić</i>	
Hourly Distribution of the Probability of a Fire Accident in a Urban Road Tunnel	42
<i>Aleksander Król, Małgorzata Król, and Krystian Szewczyński</i>	
Evaluation of the Effectiveness of Traffic Calming Measures on the City's Street and Road Network	55
<i>Olha Kholodova, Maryna Buhaiova, Andrii Sakhno, and Oleh Kholodov</i>	
Analyzing and Evaluating Safety in Numbers for Cyclists in a Large Dataset ...	75
<i>Andreas Leich, Ronald Nippold, Louis Calvin Touko Tcheumadjeu, and Peter Wagner</i>	
Smart, and Ecological Solutions	
A Microsimulation-Driven Approach to Assess Performance of Alternative Intersection Designs Embedded with Smart Vehicle Technologies	89
<i>Anna Granà, Elżbieta Macioszek, and Maria Luisa Tumminello</i>	
Towards Accurate Vehicle Speed Estimation in Aerial Views: How Localization and Tracking Methods Influence Speed Estimation in UAV-Based Vehicle Monitoring	106
<i>Muhammad Waqas Ahmed, Muhammad Adnan, Muhammad Ahmed, Davy Janssens, Geert Wets, Afzal Ahmed, and Wim Ectors</i>	

A Virtual Approach to Evaluate Vehicular Flows to Promote Sustainable and Safe Mobility in Small and Smart Communities	122
<i>Giuseppe Cappelli, Sofia Nardoianni, Mauro D'Apuzzo, and Vittorio Nicolosi</i>	
The Impact of Road Conditions on Energy Consumption in the Electric Drive System of a Passenger Car – Experimental Analysis in the RDE Cycle	138
<i>Maciej Sproch, Mariusz Graba, Krystian Hennek, and Jarosław Mamala</i>	
Leveraging GAIA-X for Intelligent Mobility and Transportation Systems in Europe	154
<i>Sebastian Naumann and Joachim Schade</i>	
Digital Twin of a Specialized Off-Road Vehicle for Peoples with Special Needs	170
<i>Marcin Staniek and Ireneusz Celiński</i>	
Economic, Regulatory, and Social Aspects	
Involvement of Pension Funds in Public Private Partnership Projects	197
<i>Václav Baroch and Rudolf Franz Heidu</i>	
Factors Shaping the Supply of Traditional Fuels and Their Impact on Price, Analysis of Selected Cases	210
<i>Piotr Kotylak</i>	
Preliminary Diagnosis of the Impact Factors of the COVID-19 Pandemic on Passenger Rail Transport Based on a Short Survey	225
<i>Katarzyna Markowska</i>	
Author Index	245