

1. Record Nr.	UNINA9910523910503321
Autore	Macioszek Elzbieta
Titolo	Present Approach to Traffic Flow Theory and Research in Civil and Transportation Engineering / / edited by Elzbieta Macioszek, Grzegorz Sierpiski
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2022
ISBN	3-030-93370-9
Edizione	[1st ed. 2022.]
Descrizione fisica	1 online resource (209 pages)
Collana	Lecture Notes in Intelligent Transportation and Infrastructure, , 2523-3459
Disciplina	006.3 388.31
Soggetti	Transportation engineering Traffic engineering Computational intelligence Transportation Technology and Traffic Engineering Computational Intelligence
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Intro -- Preface -- Organization -- Organizing Committee -- Organizing Chair -- Members -- The Conference took place under the Honorary Patronage -- Scientific Committee -- Referees -- Contents -- Civil and Traffic Engineering as the Sources of Decision in Transport Planning -- Tram and Bus Stops in Cities - An Overview of Assessment Methods -- Abstract -- 1 Introduction -- 2 Classification of Evaluation Methods -- 2.1 Type of Research -- 2.2 Research Subject -- 2.3 Type of Vehicle -- 2.4 Research Object -- 2.5 Method of Evaluation -- 2.5.1 Simple Audits, Inventories -- 2.5.2 Crash-Data Research -- 2.5.3 Road Safety Audit -- 2.5.4 Geospatial Analysis -- 2.5.5 Multi-criteria Assessment Method -- 2.5.6 User Rating -- 2.5.7 Accompanying Observations -- 3 Detailed Classification of Scoring Infrastructure Assessment Methods -- 4 Summary -- References -- Application of Genetic Algorithms for the Planning of Urban Rail Transportation System -- Abstract -- 1 Introduction -- 2 Approach -- 3 Methods for Solution -- 4 Determining the Size of the Primary Population -- 5

Crossover -- 6 Mutation -- 7 Results -- 8 Conclusions -- Acknowledgments -- References -- Inland Navigation Point Infrastructure as a Source of Transport Planning Decisions -- Abstract -- 1 Introduction -- 2 Research Method -- 2.1 Methodology of Literature Review -- 2.2 Methodology of Open Interviews -- 3 Results -- 3.1 Literature Review -- 3.2 Open Interview -- 4 Conclusions -- References -- Modelling and Optimization as Support in the Management of Transport Processes -- Evaluation of BEV and FCHEV Electric Vehicles in the Creation of a Sustainable Transport System -- Abstract -- 1 Introduction -- 2 Electric Vehicles Market -- 2.1 Infrastructure -- 2.2 Hydrogen Refuelling/Electricity Charging Cost -- 2.3 Fueling/Charging Time for Electric Vehicles -- 3 BEV and FCHEV Electric Vehicles.

3.1 Energy Efficiency -- 4 Environmental Impact of Electric Vehicles -- 5 Conclusions -- References -- Application and Comparison of Machine Learning Algorithms in Traffic Signals Prediction -- Abstract -- 1 Introduction -- 2 Preparation of Data -- 2.1 Data Generation -- 2.2 Data Processing -- 3 Machine Learning Methods for Traffic Signal Forecasting -- 3.1 Benchmark Models -- 3.2 Dense Model (DM) -- 3.3 Convolutional Neural Network (CNN) -- 3.4 LSTM -- 3.5 Autoregressive Long Short Term Memory (AR-LSTM) -- 4 Comparison of Forecasting Results -- 5 Conclusions -- References -- Comprehensive Estimate of Life Cycle Costs of New Technical Systems, Using Reliability Verification Algorithm -- Abstract -- 1 Introduction -- 2 Materials and Methods -- 3 Results -- 4 Conclusions -- References -- Development of Technology for the Formation of Innovative Logistics Products - Components of the Transport Holding Ecosystem -- Abstract -- 1 Introduction -- 2 Materials and Methods -- 3 Results -- 4 Discussion -- 5 Conclusions -- References -- Safety Issues in Transport - Human Factor, Applicable Procedures, Modern Technology -- Implementation of a Methodology for the Fatigue Analysis in Quay Crane Operators Through a Multi-agent - Discrete Event Simulation: The Salerno Container Terminal Case Study -- Abstract -- 1 Introduction -- 2 Methodology -- 2.1 Model Simulation: Overview -- 3 Case Study -- 3.1 Port of Salerno -- 3.2 Data Analysis -- 3.3 Scenarios Simulation -- 4 Results -- 5 Conclusions and Future Prospects -- References -- Preempting Fire Engines at Traffic Signals in Brunswick, Germany, Using ITS-G5 -- Abstract -- 1 Introduction -- 2 Related Work -- 3 Initial Situation -- 3.1 Protection Levels -- 3.2 Speed Losses at Intersections -- 3.3 Goals of Improvement -- 4 Preemption at Traffic Signals -- 4.1 Beacons -- 4.2 Traffic Control Center and GNSS.

4.3 ETSI ITS-G5 -- 5 Route Search -- 5.1 Database -- 5.2 Route Search Algorithm -- 5.3 Re-routing -- 6 Implementation -- 6.1 System Architecture -- 6.2 Data Distribution Using MQTT -- 6.3 Signal Control -- 6.4 Issues -- 7 Results and Conclusions -- Acknowledgements -- References -- A Numerical Case Study on the Thermal Runaway of a Lithium-Ion EV Battery Module -- Abstract -- 1 Introduction -- 2 State of Art -- 3 The Numerical Model -- 4 Results -- 5 Conclusions -- References -- Structure and Traffic Organization in Transport Systems -- Impact of Drivers' Waiting Time on the Gap Acceptance at Median, Uncontrolled T-Intersections -- Abstract -- 1 Introduction -- 2 Literature Review -- 3 Median, Uncontrolled T-Intersections -- 4 Method of Analysis of Impact of Waiting Time on Gap Acceptance -- 5 Characteristics of Research Objects -- 6 Survey Results -- 7 Summary -- References -- Development of Ecological Public Transport in Poland on the Example of Selected Cities -- Abstract -- 1 Introduction -- 2 Strategies for the Development of Clean Public Transport in the EU and Poland -- 2.1 EU Documents Setting Out Actions for Sustainable Urban

Transport -- 2.2 Green Public Transport Development Strategies in Polish Documents -- 3 Sources of Finance for Clean Urban Transport Measures -- 4 Examples of Implementation of Low-and Zero-Emission Means of Transport in Selected Polish Cities -- 5 Conclusions -- References -- Assessment of External Economic Cooperation in the Aspect of Transport Development of the Greater Tumen Initiative -- Abstract -- 1 Introduction -- 2 Materials and Methods -- 3 Results -- 4 Discussion -- 5 Conclusions -- References -- Author Index.

Sommario/riassunto

This book presents many valuable tips for making decisions related to traffic flow in the transport networks. The knowledge base in practical examples, as well as the decision support systems described in this book, finds interest among people who face the daily challenge of searching for solutions to the problems of contemporary transport networks and systems. The publication is therefore addressed to local authorities related to the planning and development of development strategies for selected areas with regard to transport (both in the urban and regional dimension) and to representatives of business and industry, as people directly involved in the implementation of traffic engineering solutions. The tips contained in individual sections of the publication allow to look at a given problem in an advanced way and facilitate the selection of the appropriate strategy (among others, in relation to the evaluation of BEV and FCHEV electric vehicles in the creation of a sustainable transport systems, development of ecological public transport on the example of selected cities, impact of drivers' waiting time on the gap acceptance at median, uncontrolled T-intersections). In turn, due to a new approach to theoretical models (including, *inter alia*, the application of genetic algorithms for the planning of urban rail transportation system, comprehensive estimate of life cycle costs of new technical systems using reliability verification algorithm, application and comparison of machine learning algorithms in traffic signals prediction), the publication also interests scientists and researchers carrying out research in this area.