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Editorial

Vehicle and Traffic Safety

Marek Guzek [1,*], Rafał S. Jurecki [2] and Wojciech Wach [3]

[1] Faculty of Transport, Warsaw University of Technology, 00-662 Warsaw, Poland
[2] Faculty of Mechatronics and Mechanical Engineering, Kielce University of Technology, 25-314 Kielce, Poland; rjurecki@tu.kielce.pl
[3] Institute of Forensic Research in Cracow, 31-033 Cracow, Poland; wwach@ies.gov.pl
* Correspondence: marek.guzek@pw.edu.pl

1. Introduction

The role of the road transportation of people and goods is increasing. Despite significant progress in the development of car design and road safety improvement programs, the number of accidents and the casualties caused by them, as well as the related economic and social costs, remains unsatisfactory. In this context, it is extremely important to develop and exchange knowledge regarding contemporary car safety problems, interactions in the vehicle–human–road system, the development of car construction, and methods of analyzing road accidents.

This book contains submissions [1–29] that were invited to be published a Special Issue of *Energies* entitled "Vehicle and Traffic Safety". We invited researchers, specialists, and industry representatives to publish their achievements regarding various topics in the fields of ground vehicle transport and automotive engineering, active and passive vehicle safety, vehicle dynamics and stability, accident analysis and reconstruction, vehicle (and its assemblies) testing, the safety of alternative vehicle drives, including electric and hybrid vehicles, and the impact of aspects such as traffic control systems, road infrastructure (including street and road lighting), autonomous and connected vehicles, and human factors on road safety.

Detailed topics of interest in the call for papers included, but were not limited to:

- Ground vehicle safety;
- Vehicle active safety;
- Vehicle passive safety;
- Accident analysis;
- Accident reconstruction;
- Vehicle dynamics;
- Vehicle stability and handling;
- Autonomous vehicles;
- Autonomous and connected vehicles;
- Vehicle testing;
- The safety of electric/hybrid cars;
- Driving simulators;
- The visibility (recognizability) of pedestrians and obstacles;
- The lighting of vehicles and roads;
- Crashworthiness;
- Road safety infrastructure;
- Traffic control systems;
- Traffic organization.

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2. A Brief Overview of the Content of This Special Issue

The response to our invitation may be considered broad. The related basic statistics are as follows:

- Submissions: 45;
- Published papers: 29 (all research articles);
- Rejections: 16.

In total, 115 authors contributed to the preparation of these 29 publications. The authors were mainly affiliated to universities (there were 31 such units among the affiliations), research institutes (8), and enterprises (2).

The authors came from 15 countries, representing a wide territorial cross-section:

Austria	2 Authors/1 Article
China	6/1
Croatia	3/1
Czechia	10/1
France	3/1
Greece	4/1
Germany	3/1
India	4/1
Italy	6/2
Korea	2/1
Poland	56/18
Saudi Arabia	3/1
Spain	4/1
UK	3/1
Ukraine	6/1

The topics of the articles varied. The authors presented the results of their research which covered many aspects that directly or indirectly affected issues relating to vehicle and road safety and referred to the previously mentioned topics. Various research methodologies were used (experimental research on real objects, simulation research, questionnaire research, etc.).

Some articles directly related to vehicle safety in the field of car passive safety [1,14], active vehicle safety [7,11,12,20,26], or comfort [25]. Several papers were devoted to issues related to the operation and safety of electric vehicles [10,19,29] and autonomous vehicles [2,8,9,13,16,18]. Several studies referred to selected problems in the reconstruction of road accidents [5,22,28]. A separate group of papers analyzed selected aspects of road infrastructure and traffic control [3,6,23,24]. All of the data show that the weakest link in the road safety system is man, and more specifically, vehicle drivers. Tests involving drivers were the topic of [4,15]. Car driving simulators are an essential tool in testing drivers, as well as design solutions. The use of such tools in research can be found in [21,27]. The study [17] was slightly different, as the authors analyzed the state of road traffic safety in a specific country and the impact of non-technical methods on shaping this state.

The overview presented above is, of course, simplified. The abovementioned links between topics and articles are not unambiguous. The works were often multi-threaded, indicating various influences in the human–vehicle–environment system.

The review presented above shows that a relatively large number of articles were in line with contemporary trends in the development of the automotive industry (e.g., electric vehicles and traffic automation and driver assistance systems). Relatively few papers focused on passive safety, and no articles considered crashworthiness.

3. Conclusions

Most of the topics indicated in the invitation were reflected in the submitted and accepted articles, and as Guest Editors, we are very satisfied with this. To conclude, we

would like to thank all of the authors for their efforts in preparing the articles. We would also like to thank the reviewers and the publishing house staff for their efficient processing.

We are convinced that the presented collection of high-quality articles on the above-mentioned topics in this Special Issue of the journal will bring a lot of valuable experience and expand our knowledge in this field.

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