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Special issue: design for transport safety [editorial]

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Special Issue Design for Transport Safety

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Design for Transport Safety Special Issue is largely based on the research presented at the Special Session with the same title at the UMTIK 2014, 16th International Conference on Machine Design and Production which took place on 30 June-3 July 2014 in Izmir, Turkey. 30th anniversary of the very first UMTIK Conference organised by and held at the Middle East Technical University, Ankara was celebrated through presentations of research in a much broader field than its origins. Former chairs enthusiastically shared their experiences and nostalgia with the delegates.

Design for Transport Safety is very important in the world as its main function in saving lives is complemented by its benefits to business and service sectors. This has been reflected by the global contributions to the Special Issue.

Design for Transport Safety Special Issue attracted contributions from academics and practicing engineers alike reflecting collaboration in interdisciplinary research areas from biomechanics to computer science, involved various transport means from aviation to road transport, reflected the inclusive nature through investigations for people ranging from pedestrians to pregnant drivers and included design studies in various components of the transport systems from seats within the vehicles to guardrails on the roads. Doing so in general, the special issue facilitated a focus on past, present and future technological aspects in Design for Transport Safety. The paper by Acar and Bewsher recognises the importance of whiplash injuries and presents a conceptual design for an integrated head restraint and car seat system to mitigate whiplash in rear-end vehicle collisions. The paper by Heerwan, Ogino and Oshinoya proposes a combination of anti-lock braking system and regenerative brake control to improve the braking performance hence safety and stability of small electric vehicles. The paper by Subramanian, Chawla, Mukherjee and Goehlich reports an optimisation study in order to minimise weighted injury cost for pedestrians and suggest pedestrian-friendly vehicle shape. Atahan's paper focuses on the crashworthiness analysis of a bridge rail-to-guardrail transition. The paper by Rølvåg, Welo, van Houten and Wiggenraad describes a model and verify a virtual model of a wing impactor based on static and dynamic compression test sensitivity analyses. The paper by Acar, Meric and Acar focusses on pregnant drivers and explores the effect of including a fetus in the uterus model on the risk of fetus mortality through drop-test and frontal crash simulations. The paper by Ghrib and Sassi conducts a parametric study on the crashworthiness of guardrail posts embedded in cohesionless soils. The paper by Dağdeviren, Yavuz, Kocabaş, Ünsal and Esat explores the effects of chassis geometry over crashworthiness, particularly focusing on the motor vehicle structure of a ladder frame chassis subjected to full-frontal and pole side collisions. The paper by Yang and Yang demonstrates the effectiveness of radio frequency identification technologies in retrieving information from roadside and other vehicles for future driver warning systems or autonomous vehicle control systems.

I would like to extend my gratitude to the reviewers for their time, industrious work and comprehensive advice. They assisted the review process with their expertise in a complex

and advancing field of design and transport safety research. Without them, publishing this special edition would not be possible.

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