IEEE/ASME TRANSACTIONS ON MECHATRONICS

Call for Papers

Focused Section on Mechatronics in Road Mobility Systems

The road mobility system is undergoing a paradigm shift towards more sustainable, efficient, safer and smarter transportation. In this context, mechatronic systems, which are becoming highly multidisciplinary, requires an ever increasing combination of mechanical, electrical/electronic, control and information disciplines. This further offers ample prospects for the integration of various mechatronic components/subsystems, towards enhanced system safety, performance, energy and intelligence. Moreover, emerging smart technologies, including artificial intelligence (AI), cybernetics, internet of things (IoT), as well as high-performance computing and control, are changing the way in which road mobility systems interact with the society. Thus, future mobility becomes highly multidisciplinary and requires novel technologies and approaches of mechatronic systems to further improve its safety, sustainability and smartness. The objective of this Focused Section is to compile recent research and development efforts contributing to advances in mechatronics for road mobility systems. The Focused Section will also welcome contributions addressing the state-of-the-art in associated developments and methodologies, and the perspectives on future developments and applications. Manuscripts should contain both theoretical and practical/experimental results and will be subject to the normal TMECH review procedures. The topics of interest within the scope of this Special Section include (although not limited to) the following:

- Novel design and optimization of mechatronics in road mobility;
- Learning-based methods for mechatronics of safe, smart and sustainable road mobilities;
- Intelligent sensing, estimation, prediction and control of mechatronic systems for road mobility;
- Human-machine interactions for future mobility;
- Experimental validation of mechatronics for road mobility;
- Integration of mechatronics within intelligent transportation systems and IoT;
- Cyber-physical systems for advanced road mobility;
- Target application of mechatronic chassis and powertrain systems to electrified and automated vehicles;
- New testing and validation methods and procedures for mechatronic systems in road mobility.

Manuscript Preparation:

Papers must contain original contributions and be prepared in accordance with TMECH standards. Instructions for authors are available online at: http://www.ieee-asme-mechatronics.org/

Manuscript Submission:

Manuscripts should be submitted through the online submission service available at: http://mc.manuscriptcentral.com/tmech-ieee. The cover letter should report the following statement: ***"This paper is submitted for possible publication in the focused section on Mechatronics in Road Mobility Systems"***. All manuscripts will be subjected to peer review process. If you have any question relating to this Focused Section, please email one of the Guest Editors.

Important Dates:

Submission of manuscripts	September 1, 2020
Completion of First Review	December 1, 2021
Submission of Revised Papers	January 15, 2021
Completion of Final Review	March 15, 2021
Submission of Final Manuscripts and Copyright Forms	April 30, 2021
Publication	June, 2021

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Short-bios of the Guest Editorial Team

Valentin Ivanov received the Ph.D. degree in 1997 and the D.Sc. degree in 2006 in Automotive Engineering from Belarusian National Technical University in Minsk, where he worked successively as Assistant, Associated and Full Professor. In 2007, as a Research Professor, he became an Alexander von Humboldt Fellow and in 2008 a Marie Curie Fellow with Technische Universität Ilmenau, Germany. Currently he is working at TU Ilmenau with the Automotive Engineering Group as the coordinator of several European industrial-academic projects. In this position, he was coordinator of the European Marie Skłodowska-Curie Innovative Training Network ITEAM on multi-actuated ground vehicles and is coordinating now the European Projects CLOVER, OWHEEL and XILforEV on novel mechatronic systems and electric vehicles. Valentin Ivanov is a SAE Fellow, IEEE senior member, member of Society of Automotive Engineers of Japan and the Association of German Engineers. He is a recipient of SAE Ralph R. Teetor Educational Award (USA) and CADLM Intelligent Optimal Design Prize. His research fields are vehicle dynamics, electric vehicles, and automotive control systems.

Chen Lv is a Nanyang Assistant Professor at School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore. He received his PhD degree from the Depart, of Automotive Engineering, Tsinghua University, China in 2016. He was a joint PhD researcher at EECS Dept., University of California, Berkeley, USA during 2014-2015, and worked as a Research Fellow at Advanced Vehicle Engineering Center, Cranfield University, UK during 2016-2018. His research focuses on vehicle intelligence and electrification, where he has contributed 2 books, 2 book chapters, over 90 papers and 12 granted patents. Dr. Lv serves as an Academic Editor for PLOS ONE, Automotive Innovation, Intl. J. of Electric and Hybrid Vehicles, and Intl. J. of Vehicle Systems Modelling and Testing, and served as a Guest Editor for several journals, including IEEE Transactions on Industrial Informatics, Applied Energy, and IEEE/ASME Transactions on Mechatronics. He received many awards, selectively including the Highly Commended Paper Award of IMechE UK in 2012, the NSK Outstanding Mechanical Engineering Paper Award in 2014, the 1st Class Award of China Automotive Industry Scientific and Technological Invention in 2015, Tsinghua University Outstanding Doctoral Thesis Award in 2016, the Seal of Excellence of EU H2020 Marie Skłodowska-Curie Actions in 2017, and the Best Workshop/Special Session Paper Award of IEEE Intelligent Vehicle Symposium in 2018.

Loïc Boulon received the master degree in electrical and automatic control engineering from the University of Lille (France), in 2006. Then, he obtained a PhD in electrical engineering from University of Franche-Comté (France). Since 2010, he is a professor at UQTR and he works into the Hydrogen Research Institute (Full Professor since 2016). His work deals with modeling, control and energy management of multiphysics systems. His research interests include hybrid electric vehicles, energy and power sources (fuel cell systems, batteries and ultracapacitors). He has published more than 120 scientific papers in peer-reviewed international journals and international conferences and given over 35 invited conferences all over the word. In 2015, Loïc Boulon was general chair of the IEEE-Vehicular Power and Propulsion Conference in Montréal (QC, Canada). Prof. Loïc Boulon is now VP-Motor Vehicles of the IEEE Vehicular Technology Society and he found the "International Summer School on Energetic Efficiency of Connected Vehicles" and the "IEEE VTS Motor Vehicle Challenge". He is the holder of the Canada Research Chair in Energy Sources for the Vehicles of the Future.

Xiaosong Hu received the Ph.D. degree in Automotive Engineering from Beijing Institute of Technology, China, in 2012. He did scientific research and completed the Ph.D. dissertation in Automotive Research Center at the University of Michigan, Ann Arbor, USA, between 2010 and 2012. He is currently a professor at the State Key Laboratory of Mechanical Transmissions and at the Department of Automotive Engineering, Chongqing University, China. He was a postdoctoral researcher at the Department of Civil and Environmental Engineering, University of California, Berkeley, USA, between 2014 and 2015, as well as at the Swedish Hybrid Vehicle Center and the Department of Signals and Systems at Chalmers University of Technology, Gothenburg, Sweden, between 2012 and 2014. His research interests include modeling and control of alternative powertrains and energy storage systems. Dr. Hu has been a recipient of several prestigious awards/honors, including Emerging Sustainability Leaders Award in 2016, EU Marie Currie Fellowship in 2015, ASME DSCD Energy Systems Best Paper Award in 2015, and Beijing Best Ph.D. Dissertation Award in 2013. Dr. Hu is focused on sustainable mobility solutions, particularly in domains of modeling and control of power/propulsion systems of electrified vehicles in sustainable transportation. He has completed more than 20 China Invention Patents and 130 papers. Dr. Hu is an active IEEE Senior Member and serves an associate editor for many esteemed journals, including Elsevier Renewable and Sustainable Energy Reviews, Elsevier Energy, SAE Journal of Alternative Powertrains, IEEE Transactions on Vehicular Technology, IEEE Transactions on Transportation Electrification, IEEE Access, IET Intelligent Transport Systems, IET Electrical Systems in Transportation, IET Power Electronics, MDPI Sustainability, Energies, as well as a

guest editor for many scientific journals, e.g., IEEE Transactions on Industrial Informatics and IEEE Transactions on Industrial Electronics.

Aybike Ongel is an Associate Professor of Civil Engineering and the Principal Investigator of the Individual Mobility and Vehicle Services team at TUMCREATE Singapore. From 20013 to 2017, she worked as an Assistant Professor of Civil Engineering at Bahcesehir University. From 2008-2012, she was an Assistant Professor in the Civil Engineering Department at the Kultur University and a lecturer at Bogazici University. From 2010-2012, she worked as a Visiting Research Associate in Road Engineering/Sealing Components Department at EMPA Swiss Federal Laboratories for Materials Science and Technology. She received her M.S. and Ph.D. in Civil and Environmental Engineering with an emphasis in transportation from University of California Davis in 2003, and 2007, respectively. Her research interests include autonomous and electric mobility, and sustainability. She has contributed to 1 book chapter, published more than 50 scientific papers in international peer reviewed journals and conferences, and given over 50 talks all over the world.