



SPECIAL SESSION SS10

2020 IEEE 19th International Power Electronics and Motion Control Conference (IEEE-PEMC 2020) will include Special Sessions, which are organized on highly specialized topics within the scope that were not included in the previous editions of the conference.

Session details:

Session title: <u>Control strategies for complex mechatronic systems</u>	
<p>Session description (session scope, novelty, goals; 100-200 words):</p> <p>In the session the topics related to control of uncertain mechatronic systems will be presented. The paper in the following scope are welcome (but not limited to):</p> <p>i) Modeling of the drive system with one of the following elements: linear and non-linear mechanical joint, nonlinear models of friction and others, ii) Control problems of complex mechatronic systems taking into account one of the following elements: elasticity of the mechanical connection, friction characteristic of the motor and load, variation of the parameters of the plant, iii) Precise control of mechatronic systems using advanced control strategies, e.g. model predictive control, fuzzy and neural control, structures with disturbance observers and others iv) Estimation techniques for complex mechatronic systems with changeable parameters, e.g. Kalman filtering, v) Identification of the mechanical parameters in complex mechatronics systems.</p>	<p>Keywords, topics:</p> <p>mechatronic torsional vibration control estimation techniques</p>

Organizer(s) details:

First (main) organizer (title, name and surname): <u>prof. Krzysztof Szabat</u>	
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Short bio: Krzysztof Szabat received the Ph.D. and D.Sc. degrees from the Electrical Engineering Faculty of Wroclaw University of Technology, Wroclaw, Poland, in 2003 and 2008, respectively. In 2016 he was awarded with the title Professor of Technical Sciences. Currently he is Head of the Department of Electrical Machines, Drives and Measurements at Wroclaw University of Science and Technology. He is the author and coauthor of over 100 journal and conference papers. His main field of interest is the application of the control theory, artificial intelligence methods, and microprocessor techniques to motion control. Prof. Szabat had scientific/didactic stays in the universities in Germany, Ireland, UK, Croatia and Russia.	
Second (optional) organizer (title, name and surname): <u>prof. Tomasz Pajchrowski</u>	
E-mail: <u>tomasz.pajchrowski@put.poznan.pl</u>	Affiliation: <u>Poznan University of Technology</u>
Short bio Tomasz Pajchrowski received the Ph.D. degree and the D.Sc. degree in in control of electrical drives from Poznan University of Technology (PUT), Poznań, Poland, in 2005 and 2016, respectively. He is currently an Assistant Professor with the Faculty of Control, Robotics and Electrical Engineering , PUT and deputy director of the Institute of Robotics and Machine Intelligence. He is an author and co-author of over 100 scientific papers and 1 patent. His research interests include control of synchronous permanent-magnet motors, especially control for Multi-Mass System With Variable Mechanical Parameters, where control systems, the nonlinear, adaptive, and robust control algorithms, as well as computational intelligence methods are applied.	

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