

CALL FOR PAPERS: “SPECIAL SESSION ON SYMBIOTIC MECHATRONICS”

Abstract

Digitalization changes the world calling also for major adjustments of industrial branches. Networking is an essential feature of this change. Prominent initiatives such as the “Internet of Things” or “Factories of the Future” are evident results thereof and stimulate innovations and product improvement.

Most of these concepts include mechatronic systems as indispensable parts. They request strong mutual interaction between these systems and with adjacent (digital, human, etc.) environments. Following nature’s example, we propose to bring mechatronic systems into mutual, beneficial interrelations with their interacting partners, which can be such diverse things as a press brake, a digital twin or a human user. This partnership resembles an “organism” for which *symbiosis* may serve as a principle that will open new potential benefits for complex technical systems.

In line with the overall theme of the MECHATRONICS 2018 conference “Reinventing Mechatronics” (<http://mechatronicsforum.co.uk/>), the aim of this Special Session is to introduce the new paradigm of “*Symbiotic Mechatronics*”. Contributions will illustrate the multi-faceted, multi-layered interactions between state-of-the-art mechatronics and core mechatronic systems and their symbiotic partners.

Topics

We encourage the submission of contributions with particular emphasis on, but not limited to, the following topics:

- + Fundamentals; differences and benefits towards “classic” mechatronic systems
- + Applications that exhibit a symbiotic structure
- + Transdisciplinary applications
- + Simulation of symbiotic mechatronic systems
- + Formalisms to incorporate symbionts into mechatronic frameworks
- + Future developments and visions

Deadlines

Extended abstract deadline (2 pages in conference template): ~~15 March 2018~~ **29 March 2018**

Notification of acceptance: 1 May 2018

Final paper submission deadline: 1 June 2018

Organizing Committee

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