



Special Session on
Condition Monitoring and Diagnostic in Mechatronics

Special Session Organizers:

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Technical Outline of the Session and Topics:

Since mechatronics was proposed in 1969, it has been applied in many fields such as automotive, manufacturing, industrial and mobile robotics, materials processing, consumer production, defense systems, aerospace, medical, etc. Mechatronics is defined as the combination of mechanical and electronic engineering with computational power. The design of any mechatronic system is a multidisciplinary activity and is performed to attain product-related advantages, which cannot be obtained by monodisciplinary efforts. Along with the benefits of having several engineering disciplines involved in the design activity, the task's complexity increases accordingly. The failure of any mechatronic system component (mechanical or electrical) reduces reliability and can cause a complete breakdown of the whole process. Moreover, in many failure cases, the system must be stopped to avoid damage of equipment and staff, which inevitably leads to financial losses. When condition monitoring or online diagnostic measures are taken, detecting the faults at early stages and saving the machine or system from more considerable faults in time. The scope of this Special Session includes but is not limited to the topics below:

- Condition monitoring, fault diagnosis, and prognosis of mechatronic systems
- Advanced technologies for condition monitoring of mechatronic systems
- Post-fault strategies and remedies for continuity of service and reliability in mechatronic systems
- Stability and acceptable performance evaluation of the mechatronic system
- Degradation and aging of mechatronic systems components
- Artificial Intelligent in condition monitoring of mechatronic systems.

Submission of papers: deadline follows the deadline for the regular papers. All the instructions for paper submission are included in the conference website: <https://www.ieee-sdemped.org/>