



# MECHATRONICS

## Call for Papers

### Focused Section on

## AI-based Monitoring in Smart Manufacturing (AISM)

Smart manufacturing, which takes advantages of advanced information technologies and rapidly developing artificial intelligence (AI) into entire production processes, offers improved production quality and cost reduction through effective monitoring and managing the manufacturing systems holistically in real time. Sensory data (including vibration, pressure, temperature and energy) that support AI algorithms and intelligent mechatronics, play an important role in prognoses before faults occur, help to prevent production halt, and save valuable resources while guaranteeing optimal manufacturing performance. Successful implementation of AI-based mechatronics allows regular maintenance to be replaced by condition-based or predictive maintenance. In an effort to disseminate current AI advances for intelligent manufacturing, a focused session in this area will be published in IEEE/ASME Transactions on Mechatronics (TMECH), which will provide a platform for scientists, engineers and industrial practitioners to present their latest theoretical and technological advancements in the design of advanced and/or emerging health monitoring and management, fault diagnosis and prognosis, practical implementation, and various case studies of the AI-based manufacturing applications of these techniques. The topics of interest within the scope of this Focused Section include but not limited to:

- Modeling of complex mechanical systems especially with component fault/failure
- Data-science including data mining and data analytics
- Advanced signal processing and machine perception of mechanical systems
- Machine learning techniques for smart manufacturing
- Theoretical development in fault detection, isolation, and identification
- Advanced approaches for health monitoring and management
- Smart sensors, online monitoring and diagnosis in practical applications
- Machinery prognostic health management (PHM) including abnormal detection, health stage division, and remaining life prediction
- Transferable approaches for generalization on insufficient data
- Implementation practices of AI-monitoring for real world manufacturing processes for successful case study in detail

### Manuscript preparation

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

### Manuscript submission

Manuscripts should be submitted online at: <https://mc.manuscriptcentral.com/tmech-ieee> as a Focused Section Paper or a Focused Section Short Paper. The cover letter should include the following statement: *"This paper is submitted for possible publication in the Focused Section on AI-based Monitoring in Smart Manufacturing (AISM)"*. All manuscripts will be subjected to the regular TMECH peer review process. Any questions relating to this focused section can be sent to one of the Guest Editors below via emails.

### Important dates:

Paper Submission	December 1, 2019
Completion of First Review	March 1, 2020
Submission of Revised Papers	April 15, 2020
Completion of Final Review	June 1, 2020
Submission of Final Manuscripts and Copyright Forms	July 1, 2020
Publication	October, 2020

### Guest editors:

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