

— Call for Papers —

A Symposium on

Prognostics and Health Management (PHM) using IIoT, Data Analytics and Artificial Intelligence

Sponsored by the ASME Manufacturing Engineering Division's
Manufacturing Systems Technical Committee

2020 ASME International Manufacturing Science and Engineering Conference (MSEC)*

June 22 – 26, 2020

Cincinnati, Ohio

Hosted by the University of Cincinnati, College of Engineering and Applied Science

Technical Focus

Engineering modeling and analytics deal with quantitative modeling and analytical characterization of engineering systems using physical or mathematical representation of a phenomenon or process of a manufacturing system. For smart and advanced manufacturing, the emerging sensing, communication, and computation technologies have resulted in a data-rich environment and provided opportunities of augmenting manufacturing intelligence through cross-cutting science and technologies such as engineering, computer science and mathematics. By integrating big data analytics that use data from sensors, controllers, metrology systems, and factory databases with engineering models, we are able to make effective use of data for online/offline diagnostic and prognostic modeling, to device AI-enabled process control and quality control, thereby enhancing system self-awareness, productivity, quality, resilience, and the overall manufacturing performance. This symposium focuses on quantitative approaches for manufacturing systems' performance improvement through data analytics and AI based methods for diagnostics and prognostics. The topics of interest include but are not limited to:

- Analysis/modeling of manufacturing data to facilitate Internet of Things
- Big data analytics for predictive decision-making in manufacturing systems
- Methodology for equipment/process monitoring, diagnostics, and prognostics
- Data mining and machine learning for smart manufacturing
- Sensing, measurement, and visualization of manufacturing data
- Machine vision and signal/image processing
- Sensor-based monitoring, control, and optimization for complex manufacturing systems
- Multi-sensor, multimodal data fusion for manufacturing applications
- Machine learning (deep learning) methods for manufacturing system analytics
- Artificial Intelligence (AI) for advanced manufacturing equipment, processes and systems

Paper Submission

Authors are encouraged to submit an abstract and full manuscript for review by **November 15, 2019** via the conference website. Final revised manuscripts must be submitted by **March 26, 2020**. The [copyright transfer form](#) must be filled out by March 19, 2020 and the presenting author must [pre-register](#) by **April 15, 2020** or the paper will be withdrawn from the conference. **No papers are to be submitted to the organizers; submissions will only be accepted via the conference website at <https://event.asme.org/MSEC/>.**

All papers accepted by MSEC2020 can be further submitted to any ASME journals, such as the highly prestigious Journal of Manufacturing Science and Engineering, for consideration of archival publication. In addition, high quality MSEC2020 papers will be automatically channeled to relevant ASME journals for fast-tracked publications.

Additional Symposium Activities

To highlight advancements in this technical area, symposium organizers will:

- organize a Symposium Best Student Paper Competition including full paper submission, review, and oral presentation
- work to organize a Special Panel on "Emerging Topics in Data Analytics for Manufacturing"
- organize a state-of-the-art paper that will be the lead article in the special issue in ASME Transactions
- work to attract a high profile international keynote speaker including honorarium

Organizers:

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* The conference is collocated with NAMRI/SME's 48th North American Manufacturing Research Conference (NAMRC48) and LEM&P (Leading Edge Manufacturing / Materials and Processing) by The Japan Society of Mechanical Engineers (JSME), which will have a separate call-for-papers. Please note that submissions of the same paper to more than one conferences are not permitted.