

— **Call for Papers** —
A Symposium on
**Advances in Data Analytics and Engineering Modeling for Intelligent
Manufacturing Systems**

Sponsored by the ASME Manufacturing Engineering Division's
Manufacturing Systems Technical Committee
2017 ASME International Manufacturing Science and Engineering Conference (MSEC)*
June 4-8, 2017
University of Southern California

Technical Focus

Engineering Modeling and analytics deals with quantitative modeling and analytical characterization of engineering systems using physical or mathematical representation of a system, phenomenon, or process. Modern manufacturing systems increasingly use more automation, and robotics with the advent of sensors and information technologies, resulting in a data-rich environment and providing big data that reflect multi-disciplinary aspects of advanced manufacturing systems. By integrating big data analytics that use large amount of data from sensors, controllers and metrology systems with engineering models, we are able to make effective use of data in online/offline diagnostic/prognostic modeling, process optimization, performance improvement, and quality control and design, thereby enabling the system self-awareness, productivity, quality, resilience and overall manufacturing performance. This symposium focuses on the quantitative approaches for manufacturing system improvement based on process analyses, numerical modeling/simulation, empirical modeling, and/or signal/image processing. The topics of interest include but are not limited to:

- Analysis/modeling of manufacturing data to facilitate Internet of Things
- Big data analytics in manufacturing systems
- Co-design and development of product, system, and /or supply chains for product variety
- Data fusion and information integration for the monitoring, diagnostics, and prognostics of manufacturing systems
- Integration of data analytics with physics-based modeling
- Sensing, measurement, and visualization of engineering data
- Degradation analysis and remaining useful life estimation
- Signal/image processing for inline/offline data
- Resilient manufacturing system design and control
- Sensor-based monitoring, control, and optimization in complex manufacturing systems
- Fault-tolerant control systems in manufacturing
- Re-manufacturing, recycle and system life cycle analysis
- Energy management strategies for manufacturing systems

Paper Submission

Authors are encouraged to submit an abstract and full manuscript for review by **November 03, 2016** via the conference website. Final revised manuscripts must be submitted by **March 08, 2017**. The [copyright transfer form](#) must be filled out and the presenting author must [pre-register](#) by April 06, 2017 or the paper will be withdrawn from the conference. Authors may also consult www.asme.org/divisions/med/call/ for updates. **No papers are to be submitted to the organizers; submissions will only be accepted via the conference website at www.asmeconferences.org/msec2017/.**

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 45th North American Manufacturing Research Conference (NAMRC45) and JSME's International Conference on Materials and Processing (ICMP 2017), both of which have a separate call-for-papers. Please note that submissions of the same paper to more than one conference are not permitted.