

— Call for Papers —  
A Symposium on  
**Quality Assurance in Additive Manufacturing Systems:  
Sensing, Analytics, and Control**

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

Quality assurance remains the key impediment for broader adoption of additive manufacturing (AM) processes. Recent roadmap reports by multiple sources, including NSF, NIST, ASME, and GAO attest the burgeoning need to address the lack of process repeatability and reliability in AM. Novel integrated sensing, analytics, physical process modeling, part measurement, and materials testing strategies are consequential milestones that must be surpassed to overcome quality related impediments in AM. We seek papers on the recent advancement in these broadly defined areas, as well as transdisciplinary collaborative initiatives. The overarching aim of this symposium is to serve as a forum for professionals from academia and industry to discuss recent advancements towards quality assurance in AM. The goal is to foster communication and build the foundation for further transdisciplinary research in the area of quality assurance in AM. Specific topics of interest for this symposium include, but are not limited to the following:

- Digital Twin in Additive Manufacturing.
- Merging data-driven and model-based prediction (Gray-box Modeling)
- In-process sensor-based quality assurance, defect identification and isolation.
- Sensor fusion and data analytics
- Feedback, closed-loop control
- Functional integrity measurement and testing
- Non-destructive testing and evaluation
- Strategies for dimensional control
- Process-machine integration modeling and variability reduction
- Cause-effect analysis and defect mitigation strategies

### 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out by March 19, 2020 and the presenting author must [pre-register](#) by **April 15, 2020** or the paper will be withdrawn from the conference.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/>.**

### Additional Symposium Activities

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

- Work to attract a high profile international keynote speaker(s) with honorarium
- Organize a special issue in ASME Journal of Manufacturing Science and Engineering.
- State-of-the-art review paper that will be the lead article in the special issue

### 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.