— Call for Papers —

A Symposium on

Advances in Metal Additive Manufacturing Processes

Sponsored by the ASME Manufacturing Engineering Division's

Manufacturing Processes Technical Committee

2019 ASME International Manufacturing Science and Engineering Conference (MSEC)*

June 10-14, 2019

Erie, Pennsylvania

Hosted by Pennsylvania State University, The Behrend College

Technical Focus

Metal Additive Manufacturing (AM), which has been gaining momentum in aerospace, defense, tooling, and medical applications, is listed as one of the top 10 Breakthrough Technologies by the 2018 MIT Technology Review. Metal AM delivers complex metal structures with excellent physical properties using a wide range of industrial materials, such as titanium, stainless steel, Inconel, and other metal superalloys. However, the lack of fundamental understanding of the metal AM processes has made it challenging to control the quality of the product and thus thwarted the progress in the adoption of metal AM. This symposium will report the latest progress in all aspects of metal AM, such as process control and development, in-situ process monitoring, process optimization, , characterization and qualification of AM products, process-structure-property relationships, and related simulation and modeling. Authors are encouraged to submit drafts related to metal AM that may contribute to improving the product quality and reducing the cost and risk of adopting metal AM. People from government, academia and industries are all encouraged to participate. A panel discussion may be organized. Specific topics of interest include, but are not limited to:

- AM precursor material characterization: size/morphological, size distribution, and thermal properties of the precursor materials.
- AM process: scan path planning, speed/power synchronization, feedforward/ feedback strategies, etc., and their effects on part quality/performance.
- Real-time monitoring techniques: such as high speed camera observation, in-situ x-ray detection, and so on for fundamental AM process understanding and part defects predication (qualify as build).
- Simulation and modeling on metal AM process and process-structure-property relationships, and related experimental prediction and validation.
- Post-process characterization and qualification of metal AM: such as microstructure, mechanical properties, fatigue, etc., and non-destructive testing.

Paper Submission

Authors are encouraged to submit an abstract and full manuscript for review by **November 02, 2018** via the conference website. Final revised manuscripts must be submitted by **March 15, 2019**. The copyright transfer form must be filled out by March 8, 2019, and the presenting author must pre-register by **April 05, 2019;** 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/msec2019/.

Additional Symposium Activities

To highlight advancements in this technical area, symposium organizers will:
- work to attract a high profile international keynote speakers for a workshop
- organize a special issue in the ASME Journal of Manufacturing Science and Engineering or ASME Journal of Micro and Nano-Manufacturing
- organize a state-of-the-art paper that will be the lead article in the special issue

Organizers:

Dr. Dong Lin, Kansas State University, Manhattan, KS, USA. 785-532-3728; dongl@ksu.edu

Dr. Ho Yeung, NIST, Washington DC, USA, (301) 975-2786; ho.yeung@nist.gov

Dr. Yalin Dong, the University of Akron, Akron, OH, USA. 330-972-6737; ydong@uakron.edu

Dr. Wenchao Zou, University of Arkansas, Fayetteville, AR, USA. 479-575-7250; zhouw@uark.edu

---

* The conference is collocated with NAMRI/SME's 47th North American Manufacturing Research Conference (NAMRC47), which will have a separate call-for-papers. Please note that submissions of the same paper to more than one conference are not permitted.