

— Call for Papers —
A Symposium on
Advances in Micro and Nano Manufacturing

Sponsored by the ASME Manufacturing Engineering Division's
Nano/Micro/Meso Manufacturing 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

Micro- and nano-scale manufacturing is gaining more attention due to production miniaturization and customization. High precision and product quality is difficult to achieve at this length scale; thus, deeper understanding of the processes, development of characterization methods, modeling and simulations, and monitoring are required for improvement of product quality. Also process and system technologies need to be advanced for scalable manufacturing. In addition, due to the size effects and difficulties in monitoring and control, simulation and prediction are particularly important at the small scale. Thus, digital or virtual manufacturing technology is becoming essential. Further, to respond to these challenges, many micro- and nano- Additive Manufacturing technologies have been developed. Compared to traditional micro/nano-fabrication methods, Additive Manufacturing (AM) has the merits of simpler processing, shorter fabrication time, lower cost, and capability of fabricating high aspect ratio structures and almost any complicated freeform structures. This symposium will focus on advances in micro- and nano-scale manufacturing technologies, including additive and top-down approaches. Both theoretical and experimental contributions are welcome. Application oriented novel manufacturing processes and systems are also of interest. Papers from the industrial sector are also strongly encouraged.

Specific topics of interest at the micro- and nano-scale include, but are not limited to:

- Mechanical, nontraditional, additive, and hybrid manufacturing processes and systems
- Process and system characterization, modeling, and simulation
- Micro and nano scale digital or virtual manufacturing
- Relationship between feedstock materials, designs, processes, part micro/nano-scale structures, and properties
- Process monitoring and control
- Measurement and metrology
- Equipment for micro- and nano-scale manufacturing
- Manufacturing related to micro- and nano-composites
- Novel AM or hybrid processes that fabricate products with the feature size in micro/nano- range (upto 1mm)
- Novel AM or hybrid processes that involve the use of micro/nano-scale materials
- Micro/nano-AM enabled applications including biomedical, mechanical, sensing & actuating applications, MEMS/NEMS, etc

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, 2018, 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 speaker
- organize a special issue in the 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:

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* 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 conferences are not permitted.