

— Call for Papers —

A Symposium on

Advances in Finishing Processes: Hard Machining, Grinding, and Abrasive Finishing

Sponsored by the ASME Manufacturing Engineering Division's

Manufacturing Processes 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

Hard machining, grinding and abrasive finishing processes are commonly used manufacturing processes to meet the product performance requirements in a variety of applications ranging from aerospace to the health-care industry. The cost associated with these material removal processes continues to be a significant part of the overall manufacturing cost of the components, and there are needs to continue development of these processes. In addition, applications of these processes to new high-strength, lightweight materials, ceramics and composites require fundamental understanding of metal removal mechanisms, tool wear, and resultant surface properties. This symposium will promote research activities, industrial case studies and novel application approaches in hard machining, grinding and abrasive finishing processes. Specific topics of interest include, but are not limited to the following:

- Advances in hard machining, grinding and abrasive finishing (e.g., metal removal rate, surface integrity, geometrical accuracy, abrasives, etc.)
- Industrial applications and case studies (e.g. Process improvements, Hybrid processes)
- Advances in cutting tool and abrasive materials
- Application of Artificial Intelligence for process control and optimization
- Modeling and Simulation of processes
- High-speed grinding, gear finishing and profile grinding
- Hard machining, grinding and abrasive finishing of novel materials and additively manufactured components
- Modeling and simulation of hard machining, grinding and abrasive finishing processes
- Hybrid processes combining hard machining, grinding and abrasive finishing with non-conventional metal-removal processes
- Economics of hard machining, grinding and abrasive finishing processes

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
- 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:

Mr. Rahul Chaudhari, The Timken Company, Canton, OH, USA. Ph: (234) 262-2352; rahul.chaudhari@timken.com

Dr. Changsheng Guo, United Technologies, Hartford, CT, USA. Ph: (860) 308-5543; Changsheng.guo@utc.com

Prof. Hitomi Yamaguchi, University of Florida, Gainesville, FL, USA. Ph: (352) 392-0812; hitomiy@ufl.edu

* 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.