

— Call for Papers —
A Symposium on
Advanced Multi-axis and Multi-tasking Machining Technologies

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

Many mechanical parts with complicated shapes or freeform surfaces have been manufactured in aerospace, automobile, energy and medical industries. In addition, the materials of those parts such as Titanium alloys, Inconel and Cobalt Chromium Molybdenum alloys have high mechanical strength, high heat resistance and/or high wear resistance. Currently, multi-axis and multi-tasking machine tools have been developed to manufacture those parts having a high additional value. The machining operations require high-end CAM systems, machining simulations and appropriate cutting tools for using the machine tools effectively. Other machining processes such as grinding, laser processing and gear skiving, which are performed on the multi-tasking machine tools, should also be studied in terms of accuracy and surface finish. This symposium focuses on the research advances in the areas of the machining technologies on the multi-axis and multi-tasking machine tools. In order to achieve high cutting performance on the multi-axis and multi-tasking machine tools, the topics of the symposium include machine tool kinematics and control, machining process modeling with respect to multi-axis machining, advanced cutting tools, and the metrology for the machined part. Specific topics of interest include, but are not limited to:

- Advanced control and metrology for multi-axis/multi-tasking machine tools
- Modelings and simulations in machining processes
- Advanced cutting tool design and coating technologies
- Machining technologies for hard metals
- Advanced CAM systems for the multi-axis and the multi-tasking machining operations
- Monitoring technologies for high reliable machinings
- Process planning of the multi-axis and the multi-tasking machining operations
- Evaluation of machining performance in the multi-axis and the multi-tasking machining operations

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 organize a special issue in the ASME Journal of Manufacturing Science and Engineering or ASME Journal of Micro and Nano-Manufacturing.

Organizers:

Dr. Takashi Matsumura, Tokyo Denki University, JAPAN. Ph: +81-3-5284-5474; tmatsumu@cck.dendai.ac.jp
Dr. Keiichi SHIRASE, Kobe University, JAPAN. Ph: +81-78-803-6139; shirase@mech.kobe-u.ac.jp
Dr. Toshiyuki Muraki, Yamazaki Mazak Corporation, JAPAN ; Toshiyuki_Muraki@mazak.co.jp

* 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.