

— Call for Papers —

A Symposium on

Advances in Analysis, Design, and Manufacturing of Biomedical Devices and Products

Sponsored by the ASME Manufacturing Engineering Division's
Biomanufacturing 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

The characteristics, use and performance of materials, structures and products for biomedical applications entail unique requirements for the processes used to produce them. The better understanding of biomedical manufacturing processes can lead to a safer & more effective device, and thus reducing the healthcare costs and complications. In addition to the continual improvement of generic devices, there are also emerging areas, such as 3D printing and sensing, that have created new tools and novel ideas for research and development in biomedical devices and applications. These applications include manufacturing of soft materials, patient specific medical or assistive devices, novel surgical tools, intraoperative monitoring and feedback, and so on. This symposium is aimed at identifying the constraints imposed on manufacturing processes by the requirements of biomedical materials and products, presenting forefront research results, highlighting needs and solutions for the complex problems that arise in biomedical product production and pointing to new paths for conceiving, designing and operating biomedical manufacturing processes. Original contributions are invited in, but not limited to the following areas:

- Analysis of tissue cutting, removal, ablation or joining processes
- Energy-based machining equipment/processes, such as electrical, ultrasonic, or laser, for biomedical applications
- Advanced manufacturing processes for engineered tissue scaffolds and constructs
- Additive and other new processes for biomedical manufacturing
- Surgical haptics rendering and sensing
- Design and manufacturing of advanced medical devices and tools for surgical procedures
- Manufacturing process of new or composite materials for biomedical applications, such as soft matters
- Advances in process validation and verification in biomedical manufacturing
- Modeling and experimentation of surgical operations
- Reviews of the current states of knowledge and technology and of research needs in biomedical manufacturing

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
- 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.