

— **Call for Papers** —  
A Symposium on  
**High Performance Renewable Materials  
and Sustainable Manufacturing**

Sponsored by the ASME Manufacturing Engineering Division's  
*Advanced Materials Manufacturing 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

Lightweight and high strength composite materials have been identified as a key technology in U.S. clean energy manufacturing with the potential to change many sectors. Nowadays, raw materials for composites are typically derived from energy intensive petroleum processing, such as polymers for matrix and carbon or glass fibers for reinforcements. In the production phase of these composite components, high temperatures are required in the manufacture of both carbon and glass fibers. One study estimates that carbon fiber composites are 3-5 times more energy intensive than conventional steel on a weight basis. To reduce the energy intensity of composites, high-quality lower energy raw materials and lower energy production technologies are needed. Natural fibers as reinforcement of polymer composites is gaining increasing attention due to their remarkable mechanical properties, low cost, carbon-neutral nature and recyclability.

This symposium will provide a platform for interdisciplinary discussion on recent development in plant-based materials and their sustainable manufacturing. Specific topics include, but are not limited to:

- Plant-based materials and their performance
- CO<sub>2</sub> based materials and their performance
- High-strength lignin-based carbon fibers *via* a low-energy methods
- Hybrid composites including natural fibers
- Characterization of the plant-based materials
- Application of plant-based materials in manufacturing non-structural and structural parts
- Application of natural fibers in construction and art

### 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be filled out by March 19, 2020 and the presenting author must pre-register by **April 15, 2020** or the paper will be withdrawn from the conference.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/>.**

All papers accepted by MSEC2020 can be further submitted to any ASME journals, such as the highly prestigious Journal of Manufacturing Science and Engineering, for consideration of archival publication. In addition, high quality MSEC2020 papers will be automatically channeled to relevant ASME journals for fast-tracked publications.

### Additional Symposium Activities

To highlight advancements in this technical area, symposium organizers will:

- Work to attract a high profile international keynote speaker in the area of renewable and sustainable manufacturing;
- Organize a state-of-the-art paper that will be the lead article in the special issue.

### Organizers

Dr. Mihaela Banu, University of Michigan, Ann Arbor, MI, USA, Ph: +1 734 936-0378, mbanu@umich.edu

Dr. Srikanth Pilla, Clemson University, Greenville, SC, USA., spilla@clemson.edu

Dr. Elias Shakour, BASF Corporation, Wyandotte, MI, USA, Ph +1 734 324-5279, elias.shakour@basf.com

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\* 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.