



**Journal of
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Guest Editorial

Special Issue: Physics-Informed Machine Learning for Advanced Manufacturing



Yuebin Guo

This Special Issue serves as a bridge between the ASME *Journal of Manufacturing Science and Engineering* (JMSE) and the global community of artificial intelligence manufacturing researchers. The primary objective of the Special Issue is to collect high-level scientific articles in the emerging area of physics-informed machine learning (PIML) for advanced manufacturing and push the boundaries of knowledge. Contributions are sought in recent advances, challenges, and future directions of PIML model development at the levels of processes, machines, and systems.

A team of Guest Editors has been setup to collect as diverse selection articles as possible. The team is led by Professor Yuebin Guo (Rutgers University-New Brunswick, Piscataway, NJ) and consists of Professor Yusuf Altintas (The University of British Columbia, Vancouver, BC, Canada), Professor Qing Chang (University of Virginia, Charlottesville, VA), Professor Robert Gao (Case Western Reserve University, Cleveland, OH), Professor Weihong Grace Guo (Rutgers University-New Brunswick, Piscataway, NJ), Dr. Andy Henderson (Hendtech LLC, Greenville, SC), Dr. Jaydeep

Karandikar (Oak Ridge National Laboratory, Oak Ridge, TN), and Professor Tony Schmitz (University of Tennessee, Knoxville, TN).

While this collection of articles represents only an initiative to define and shape the nascent area of PIML for advanced manufacturing, it demonstrates a snapshot of the current landscape of the vibrant area. These articles cover a wide array of PIML topics, including forward and inverse predictions, uncertainty quantification and Bayesian optimization, data assimilation, process optimization, machine dynamics, quality control, and reduced-order models. The collection of articles is from Oct. 2023 to Jan. 2024. Each article underwent a rigorous peer review process, which is a hallmark of JMSE.

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