

# VIBRATION MONITORING AND CONTROL FOR PRECISION MANUFACTURING AND MACHINERY

Deadline for Submissions: **31 October 2023**



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## **SPECIAL ISSUE INFORMATION**

Dear Colleagues,

Vibration is a common issue in modern manufacturing and machinery because of its detrimental effects on the accuracy, precision, and quality of the final products, which can result in decreased efficiency and productivity of the manufacturing and machining systems, and reduced service life of machinery. Efficient and effective vibration monitoring and control techniques are essential to ensure the smooth operation of precision machines, minimize downtime, and reduce maintenance costs. The current development in machinery vibration control involves the integration of advanced sensors, data analytics, and control systems to detect, monitor, and mitigate vibrations. This includes the application of machine learning and artificial intelligence for signal processing and feature classification, new materials and structures, and hybrid approaches for vibration mitigation and chatter suppression. Vibration monitoring and control also play an important role in achieving the goals of Industry 4.0, which is the current trend of automation and data exchange in manufacturing technologies.

# Special Issue

This special issue aims to provide a platform for researchers and industry practitioners to share their latest findings and advancements in the field of vibration monitoring and control for precision manufacturing and machinery.

It will cover a wide range of topics related to vibration monitoring and control, including but not limited to:

- Vibration measurement and analysis techniques for precision machines
- Advanced sensors and signal processing techniques for vibration monitoring
- Chatter detection and suppression in precision machining
- Vibration control algorithms and strategies for precision machinery
- Intelligent control and optimization methods for vibration control
- Active and passive vibration control techniques for precision manufacturing and machinery
- Real-time monitoring and control of vibration in precision machinery
- Artificial intelligence and machine learning techniques for vibration monitoring and control
- Case studies and applications of vibration monitoring and control in precision manufacturing and machinery
- Fault diagnosis of machinery

We invite researchers and industry practitioners to submit their original research papers, review articles, and case studies related to the above topics. All submissions will undergo a rigorous peer-review process to ensure the quality and relevance of the published papers. We believe that this special issue will provide valuable insights into the latest developments and applications of vibration monitoring and control for precision manufacturing and machinery.

## KEYWORDS:

- Machine tool vibration
- Chatter detection and suppression
- Vibration sensing, data acquisition and processing
- Vibration control
- Vibration damping
- Vibration monitoring
- Fault diagnosis

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This special issue is now open for submission.