



Dynamics and Machining Stability for Flexible Systems

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Message from the Guest Editors

Multi-axis milling, turning, and grinding of thin-walled structures using flexible machining systems have many inherent challenges due to vibrations and chatter as well as dimensional errors. Recent innovations in tooling, AI-assisted approaches, and process modelling promise near optimal cutting performance by minimizing vibrations and compensating for errors.

In this Special Issue, we invite submissions related but not limited to the following topics:

- Modelling, simulation, or digital twinning solutions of machine tool vibrations and chatter stability with flexible machining systems
- System identification, modal analysis, or process monitoring of flexible systems
- Chatter avoidance in flexible machining systems through active and passive damping solutions, tool geometry design, or path planning strategies
- Active control in compliant grinding such as robotic polishing
- Artificial Intelligence and Machine Learning in vibration prediction and control
- Nonlinearities in flexible machining systems
- Special challenging processes such as turn-milling, vibration-assisted machining, or micro-machining
- Challenges associated with machining of additively manufactured components





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Message from the Editor-in-Chief

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