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Special Issue Reprint

Machine Tools, Advanced Manufacturing and Precision Manufacturing

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Machine tools and precision manufacturing remain central to industrial competitiveness as manufacturers face tighter tolerances, miniaturization, new and difficult-to-machine materials, sustainability targets, mass customization, and increasing automation. This Reprint compiles thirteen articles that address these challenges through advances in machining science, toolpath planning, machine-tool calibration and accuracy improvement, tool performance and wear prediction, additive manufacturing and post-processing, and data-enabled production logistics. This Reprint highlights how improved modelling, sensing, metrology, and decision support can enhance surface integrity and dimensional accuracy while increasing productivity and process robustness. Together, the papers provide a timely landscape of current research directions and practical approaches supporting next-generation advanced and precision manufacturing.

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