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Laser-MicroEDM Based Hybrid Micromachining: Microdrilling and Micromilliling
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Abstract
This book covers the various aspects of laser micromachining (LBMM) and micro electro-discharge machining (uEDM) sequential hybrid process. LBMM-mEDM-based hybrid micromachining is a growing interest among researchers because of its unique features to harness the advantages of the two primary methods. This book guides the readers to implement this LBMM-mEDM-based hybrid process for the micromachining process efficiently to achieve a higher production rate with improved machining quality. It will provide the basic understanding about the LBMM-mEDM process, how the primary process's parameters affect the overall performance of the hybrid machining's outcome, how the hybrid process can be mathematically modelled to describe various observed phenomena of the said micromachining method. This book caters to researchers and industrial practitioners who are interested in precision and high throughput machining. © The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd. 2025.

Author Keywords
Heat Treatment Machining; Hybrid Micromachining; Laser Beam Micromachining (LBMM); Laser Drilling; Laser Micro EDM; Laser Micro-Milling; Micro Electro-Discharge Machining (EDM); Optical Measurement Machine (OMM); Precision Machining; Ultrashort-Pulse Laser Micromachining

Index Keywords
Electric discharge machining, Laser beam cutting, Laser beam machining, Laser heating, Micromachining, Milling (machining), Milling machines, Optical variables measurement, Oxygen cutting, Precision engineering, Strain measurement; Heat treatment machining, Hybrid micromachining, Laser beam micromachining, Laser drilling, Laser micro electro-discharge machining, Laser micro-machining, Laser micro-milling, Laser-micromachining, Measurement machines, Micro electro-discharge machining, Micro milling, Optical measurement, Optical measurement machine, Precision machining, Pulse laser, Ultrashort-pulse, Ultrashort-pulse laser micromachining; Ultrashort pulses

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