

Down milling trimming process optimization for carbon fiber-reinforced plastic

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Abstrak

This book offers recommendations on the milling processes for the carbon fiber reinforced plastic CFRP/Al2024. Due to the anisotropic and non-homogeneous structure of CFRP and the ductile nature of aluminum, the machining of this material is very challenging and causes various types of damage, such as matrix cracking and thermal alterations, fiber pullout and fuzzing during drilling and trimming, which affect the quality of machined surface.

The book studies and models the machined surface quality of CFRP/Al2024 using a two-level full factorial design experiment. It describes the processes of trimming using down milling, and statistically and graphically analyzes the influence and interaction of cutting parameters. Lastly, the book presents the optimization of the cutting parameters in order to create a surface texture quality of CFRP/Al2024 to less than 1 μm .