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(57) Abstract :
The usage of polymer composite materials in engineering applications is rapidly expanding because they have numerous features that are superior to those of conventional metallic materials. As they tried to substitute conventional materials for better performance in application-specific conditions, product development engineers started to lay a greater emphasis on the adaptability of composite material manufacturing procedures. However there are a lot of restrictions on production techniques, especially when it comes to the issue of machining. It might be challenging for designers to select the best machining processes for polymer composites due to their anisotropic nature. In the current work, the analysis of drilling operations on composites was taken into consideration. When compared to composite materials, milling is a tried-and-true machining technique for traditional materials. The examination of milling operations on composites was considered in the current work. When compared to composite materials, milling of traditional materials is a well-established machining procedure. The available literature offers plenty of room for additional research to build a solid understanding of the milling process and produce better-milled surfaces. Understanding the impact of cutting process parameters on the quality of the machined surface is the goal of this project. The proposed model was shown to be more accurate when compared to older models. The present work is also looked into how planning feed rates and drill bit design might reduce delamination. And found that by adjusting the chisel edge ratio according to the geometry of the drill bit, it is possible to predict a thrust force that is more accurately adequate to reduce delamination.

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