A study on machinability of hard materials using laser textured ceramic cutting tools

Abstract

The aim of this study is to investigate the machinability of hard materials under the influence of continuous and discrete laser textured ceramic cutting tools. The two main machinability indicators used in this study namely as wear and life. The three types of micro-texture patterns i.e., dimples, continuous, and discrete laser textured pattern are engraved on the flank face of the cutting tool. The experiment is going to conduct with different cutting velocities, feed rate and depth of cut considering the texture pattern one among the input parameters, While machining hard material with continuous and discrete textured pattern ceramic cutting tool. The cutting nose damage due to abrasion and friction between the tool-chip interface, will improve and also identify by this method. The cutting tool wear resistance will observe by this method. The tool wear will measure and also identifies the cutting velocity and cutting speed. Tool life for dimple, continuous and discrete laser textured will find by this study.