

## **Study of Machinability for Titanium Alloy Ti-6Al-4V through Chip Formation in Milling Process**

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**Abstract :** Most of the materials used in the industry of aero-engine components generally consist of titanium alloys. Advanced materials, because of their excellent combination of high specific strength, lightweight, and general corrosion resistance. In fact, chemical wear resistance of aero-engine alloy provide a serious challenge for cutting tool material during the machining process. The reduction in cutting temperature distributions leads to an increase in tool life and a decrease in wear rate. Hence, the chip morphology and segmentation play a predominant role in determining machinability and tool wear during the machining process. The result of low thermal conductivity and diffusivity of this alloy in the concentration of high temperatures at the tool-work-piece and tool-chip interface. Consequently, the chip morphology is very important in the study of machinability of metals as well as the study of cutting tool wear. Otherwise, the result will be accelerating tool wear, increasing manufacturing cost and time consuming.

**Keywords :** machinability, titanium alloy (ti-6al-4v), chip formation, milling process

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