

## Parametric Study and Modelling of Orthogonal Cutting Process for AISI 4340 and Ti-6Al-4V Alloy

**Authors :** Purnank Bhatt, Mit Shah, Pawan Nagda, Vimal Jasoliya

**Abstract :** The influence of parameters like velocity and depth of cut on cutting forces is investigated for the empirical relation of the coefficient of friction derived for CRS 1018 for different materials like AISI 4340 and Ti6Al4V. For this purpose, turning tests were carried out on the above materials using coated cemented carbide tool inserts for steel grade and uncoated cemented carbide cutting tool inserts for Titanium with different chip breaker geometries. The cutting forces were measured using a Kistler dynamometer where the multiplication factor taken is 200. The effect of cutting force variation was analyzed experimentally and are compared with the analytical results.

**Keywords :** cutting forces, coefficient of friction, carbide tool inserts, titanium

**Conference Title :** ICSRD 2020 : International Conference on Scientific Research and Development

**Conference Location :** Chicago, United States

**Conference Dates :** December 12-13, 2020