

IMPERCEPTIBLE EFFECT OF TEMPERATURE ON MACHINING PROCESS WITH THE APPLICATION OF CUTTING FLUIDS

Sahebagouda Sanganagoudar¹, Vishaldatta V Kohir²

¹ Assistant Professor Mechanical Engineering Department Fabtech Technical Campus,
College of Engineering Research Sangola, India.

² Professor Mechanical Engineering Department Khaja Banda Nawaz College of Engineering, Kalaburgi, India.

ABSTRACT

Machining is the process of removal of material from a workpiece. Heat generation plays a predominant role during the machining process. The study of Heat has become distinguished in metal cutting because it has essential influence on machining processes. One can notice the maximum temperature zone between the chip and the tool interface. Though the Cutting tool is harder than the work piece but eventually it is not the only cause for entire machining process, part of the material removed out, melts due to generated heat between tool and work interface. The objective of this study is to express the effect of temperature on machining process occurs imperceptibly with or without using of cutting fluids and to expose its significance to achieve better machining. In this paper we discuss various kinds of heat generation points between tool work piece interfaces and suggest preheating tool to have easy and better machining process. This review enforces to have a further study about the temperature which helps imperceptible machining if we adapt Intelligent Cooling Systems (ICS). Various cutting fluids like synthetic water soluble, water soluble oil based coolant, cutting oil, Cutting tool geometries and FEA models are studied.

Keywords: Cutting Fluids, Preheating, Intelligent Cooling Systems, Finite Element Analysis, Imperceptible.

