Tool steel has been widely used, especially to manufacture forming dies and molds by machining processes.
Generally, cubic boron nitride (CBN) and ceramic tools are recommended for finish machining a specific
steel. This study contributes to filling the research gap for the selection of low- content CBN tools or mixed
ceramic tools for turning of hard tool steel. The turning tests were conducted to determine the performance
of CBN and the mixed ceramic tools in turning soft (HRC22) and hard (HRC52) H13 tool steel with different
cutting speeds, feed rates and depths of cut. ANOVA was used to determine the interaction of the cutting
parameters on the surface roughness and cutting forces obtained from turning tests.
The results indicate that the surface roughness in hard turning was lower with the CBN tool than with the ceramic tool. On the other hand, the cutting forces in turning with the ceramic tool were lower. Acceptable regular chip formation
increases with the cutting speed for each tool.