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The Effect of Cutting Fluid on Surface Roughness of AISI 4340 Steel during Turning Operation

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Abstract:The machining parameters of any machining operation highly affect the surface quality of a component. The objective of this paper is to study the effect of cutting fluid (SERVOCUT 'S' Grade oil emulsified with water) on the surface quality of AISI4340 steel components. The turning operation was carried out with TiN coated carbide insert on the AISI 4340 steel under traditionally flooded condition. The turning parameters, namely cutting velocity, feed rate and depth of cut were chosen for the conduct of experiments. The surface roughness of the turned specimens was measured with a surface roughness tester.

Keywords: AISI 4340, TiN coated carbide insert, turning operation, flooded condition.

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