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Investigation of cutting and frictional force components in dry, wet and cryogenic machining of EN24 STEEL

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This paper presents an experimental study of the effect of different cooling methods on cutting and frictional forces while machining alloy steel EN24. Experiments were carried out in dry, wet and cryogenic conditions using uncoated tungsten carbide tool as per design of experiments to understand the relative advantage offered by cryogenic cooling over other cooling methods. It was found from the experimental results that cryogenic cooling was effective in bringing down the cutting temperatures that attributed for the substantial reduction of the cutting and frictional forces. Such input parameters as speed, feed and constant depth of cut were correlated with output parameters, namely cutting force and friction force through a Taguchi parametric approach.

Biography

Munish K Gupta has completed his Masters at the age of 24 years from G.N.D.E.C. Ludhiana and Pursuing PhD from NIT, Hamirpur, Himachal Pradesh.

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