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Applied Mechanics and Materials

Volume 446-447, 2014, Pages 275-278

2013 2nd International Conference on Mechanics and Control Engineering, ICMCE 2013; Beijing; China; 1 September 2013 through 2 September 2013; Code 101725

Surface quality of high speed milling of silicon carbide by using diamond coated tool (Conference Paper)

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Abstract

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The high speed milling of silicon carbide was discussed by using flat end-mill 2 mm in diameter diamond coated tool. Ultra-precision high speed spindle attachment was used to achieve cutting tool rotation speed as high as 50,000 rpm. Special fixture was designed to minimize the chatter on work-piece surface during the machining process. Three cutting parameters were selected as independent variables of the experiments. They were spindle speed, depth of cut and feed rate. The arithmetic mean value of roughness (Ra) was measured on the work-piece surface as the response of the experiment. Result of the experiment shows that the value of surface roughness can be achieved as low as 0.150 μm . Statistical analysis was provided to study the significant of the model, interaction among the cutting parameters and their effects to the surface roughness value. © (2014) Trans Tech Publications, Switzerland.

Author keywords

[Diamond coated tool](#) [High speed milling](#) [Silicon carbide](#) [Surface quality](#)

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