

## **Statistical evaluation of the influence of plasma polishing parameters on the material removal rate and the cutting edge radius sizes**

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The paper introduces an innovative method for preparing the edges of cemented carbide cutting tools using plasma discharges in an electrolyte. This environmentally friendly technique rounded the cutting edges by immersing the cutting inserts into the electrolyte. The aim of the article is to statistically evaluate the influence of the process parameters on the material removal rate and the cutting edge radius sizes. The measured data were analysed in the software Minitab. Measured responses were normally distributed, thus the assumption for performing ANOVA (Analysis of Variance) analysis was fulfilled. The associated p-value of less than 0.05 for the model (95% confidence level) indicates that the input process parameters in model are statistically significant. From the results of the ANOVA analysis for material removal rate and cutting edge radius sizes, it is obvious, that all observed input process parameters had a significant influence on measured responses. Moreover, the influence of values of individual process parameters (electrolyte concentration, voltage, electrolyte temperature and polishing time) on the cutting edge radius sizes and material removal rate was evaluated.

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