

## **ANALYSIS OF ABRASIVE JET MACHINING USING TAGUCHI TECHNIQUES**

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### **ABSTRACT**

Abrasive jet machining (AJM) is an advanced technique in the field of micro machining. This operation is widely utilized as a part of the industry for cutting intricate shape on hard and brittle materials that usually difficult to perform. In present experimental study, the effect of process variables on the material removal rate (MRR) was demonstrated by Taguchi and ANOVA Method using Minitab15 which provides an acceptable simulated result. Drilling operation of glass is done at varied jet pressure, standoff distance (SOD), nozzle inclination (NI) and nozzle tip diameter (ND) as the process variable. Material removal rate of drilled hole is considered as the output of whole machining process. To exhibit the solution and to validate single analysis a statistical tool, DOE has been followed under which Taguchi orthogonal array (OA) is utilized for experimental design and optimum outcome accomplished through Analysis of variance (ANOVA). It was discovered from the parametric analysis that all the process variables are impressive to evaluate the criteria of MRR whereas both jet pressure and nozzle inclination are most influencing factors.

**KEYWORDS:** AJM, Glass, Minitab15, Taguchi OA, ANOVA