

Analysis of Parametric Optimization in Wire Edm

Khempal¹ and Dr. Bhiksha Gugulothu²

Research Scholar, Department of Mechanical Engineering¹

Professor, Department of Mechanical Engineering²

OPJS University, Churu, Rajasthan, India

Abstract: *Wire cut electrical discharge machining (WEDM) is a new non-conventional manufacturing technology used to cut complicated shapes and materials. The cable broke. EDM is called wire cutting or wire electrical discharge machining. Deionized water, a dielectric fluid, is used to enter a tiny brass single-stranded wire into the workpiece. Machine settings must be carefully considered for WEDM process optimization. WEDM is complex and influenced by several factors. WEDM is complex and influenced by several factors. Process parameters including voltage, current, and pulse-related parameters (e.g., pulse on and pulse off time) are critical in EDM/WEDM. Along with interaction time (pulse width x frequency), these are the most important output characteristics, including MRR and surface roughness. Pulse energy affects surface development, crater depth, and temperature. These factors have been studied extensively to optimize energy delivery and avoid post-process issues. This paper examines how WEDM process parameters like wire speed, wire tension, pulse on time, pulse off time, servo voltage, peak current, and dielectric flow rate affect process response parameters like MRR, WWR, Ra, and Kerf. After refining research methods, this study offers WEDM research proposals and future advances.*

Keywords: Parametric Optimization, Wire EDM, Process Parameters, Surface Roughness, Material Removal Rate (MRR).