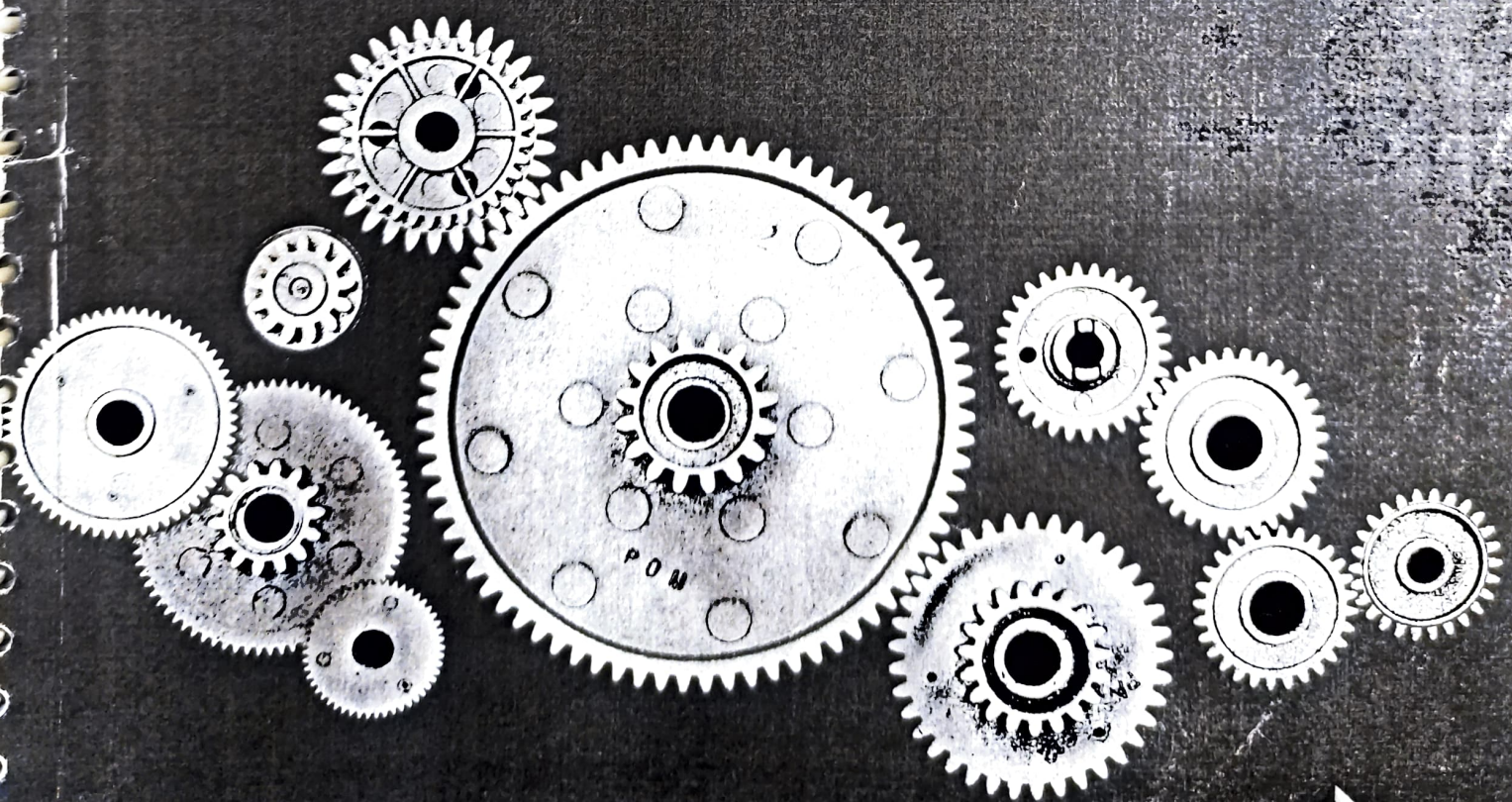
Futuristic Trends in

Mechanical Engineering

Volume 2, Book 1, 2022, IIP Proceedings



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Volume 2, Book 1, 2022, IIP Proceedings

ISBN : 978-93-95632-74-4

THE CORRELATIONS BETWEEN RATE OF TOOL EROSION AND BLACK LAYER FORMATION DURING ELECTRO-DISCHARGE MACHINING

Abstract:

The present assessment is performed in order to develop correlation between the rate of tool eroded and the black film formed while machining on electro discharge machine. The study was performed to detect the major constituents of the black layer and its influence on tool erosion. The major constituents detected were carbon, silicon, iron and oxygen as identified by EDX analysis. It was found that the elevated duty factor results in the higher occurrence of the black layer. The duty factor was the most dominating parameter for the development of the black layer. It depicts that the higher value of τ will lead to more resistance to the positive ions impinging the tool surface, thus contributing minimum TWR.

Keywords: Black Layer, EDM, SEM, EDX

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