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STUDY OF CHIP MORPHOLOGY WHEN MACHINING INCONEL 718 UNDER HIGH PRESSURE JET MACHINING ENVIRONMENT

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ABSTRACT

In this paper the formation chip geometry during machining of Inconel 718 with a high pressure jet assistant have been experimental studied. Five different pressure (20-100bar) in an interval 20 bar have been used for conducting the experiments. The aim of this experiments to understand the chip formation mechanism in high pressure jet machining by analyzing various parameters such as chip segmentation ratio, chip segmentation frequency, chip curling frequency, chip reduction co-efficient and chip-tool contact length. Additionally, flank wear and nose wear have been evaluated. The result shows that lower value of chip reduction co-efficient, chip segmentation frequency and chip-tool contact length has been observed at 100 bar pressure. The dominant mechanism of chip formation in high pressure jet environment is due tofracture.

Keywords: High Pressure Jet Machining, Chip morphology, Segmentation ratio, Segmentation frequency, Chip spiraling frequency, Inconel 718