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An Investigation of Machinability of Inconel 718 in EDM Using Different Cryogenic Treated Tools

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Abstract : Inconel 718 is a family if Nickel-Chromium based Superalloy; it has very high oxidation and corrosion resistance. Inconel 718 is widely being used in aerospace, engine, turbine etc. due to its high mechanical strength and creep resistance. Being widely used, its machining should be easy but in real its machining is very difficult, especially by using traditional machining methods. It becomes easy to machine only by using non Traditional machining such as EDM. During EDM machining there is wear of both tool and workpiece, the tool wear is undesired because it changes tool shape, geometry. To reduce the tool wear rate (TWR) cryogenic treatment is performed on tool before the machining operation. The machining performances of the process are to be evaluated in terms of MRR, TWR which are functions of Discharge current, Pulse on-time, Pulse Off-time.

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