

Micro-ultrasonic Machining of Various Brittle Materials

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Abstract

Ultrasonic machining (UM) is considered to be a very effective and relatively accurate way to engrave fine patterns and drill holes on brittle materials. This study aimed to investigate the feasibility of utilizing UM technique to fabricate parts of brittle materials in micrometers scale. Micro-components of various brittle materials such as glasses, Zerodure, fused quartz and silicon with dimension smaller than 100 μm and surface roughness better than 0.15 μm were successfully produced in this study

Keyword : Ultrasonic machining , brittle material,