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# FABRICATION OF ULTRASONICALLY ASSISTED TURNING ON A CONVENTIONAL LATHE

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**ABSTRACT:**
ULTRASONICALLY ASSISTED TURNING IS A SUSTAINABLE MACHINING PROCESS USED FOR MACHINING OF ADVANCED MATERIAL LIKE TITANIUM, SUPER ALLOYS, COMPOSITES ETC. IN INDUSTRIAL PRACTICES IT IS ESSENTIAL TO REDUCE THE TOOL WEAR WHILE INCREASING PRODUCTION RATE. BECAUSE OF THE INTERMITTENT CUTTING ACTION, IT IS POSSIBLE TO REDUCE TOOL WEAR AND IMPROVE SURFACE FINISH. THE AIM IS TO CARRY OUT MACHINING OF ADVANCED MATERIAL USING THIS ADVANCED MACHINING SETUP.

## INTRODUCTION AND BACKGROUND

Ultrasonically assisted turning is a non-conventional machining process in which high-frequency vibration is imparted to a conventional cutting tool with the aid of a ultrasonic transducer.

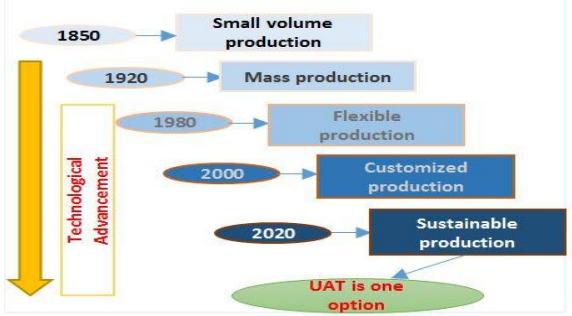


Figure 1 : Background of Ultrasonically Assisted Turning

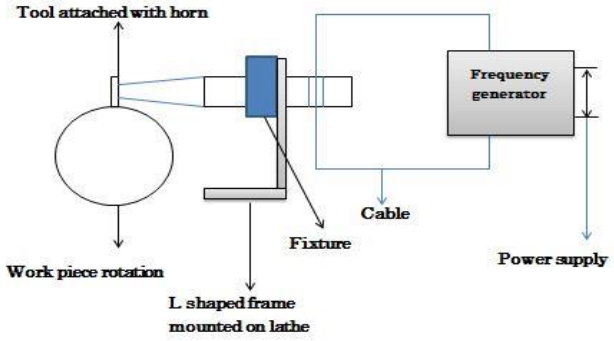


Figure 2: Schematic of Ultrasonically Assisted Turning

## MAIN TOOL AND HORN ATTACHMENT

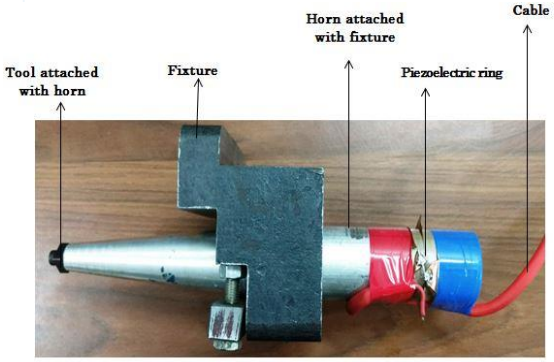


Figure 3: Tool and Horn Attachment

## SET UP OF ULTRASONICALLY ASSISTED TURNING AT IITRAM WORK SHOP

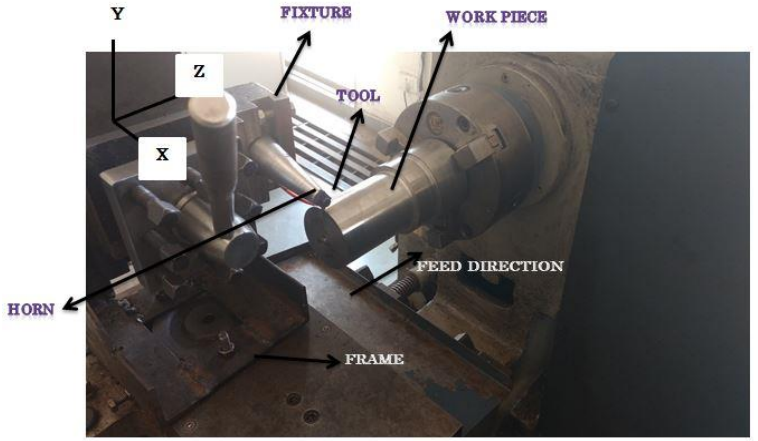


Figure 4: Set Up of Ultrasonically Assisted Turning

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