

# Least Well-Known Non-Conventional Machining Process



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The modern highly cutthroat industrial environment demands machining and production processes resulting in exceptional quality and precision. Nonconventional machining processes differ from conventional ones, as they make use of alternative types of energy, such as thermal, electrical, and chemical, to form or to remove material. Commonly, the energy source has high power density, while the process features phenomenal accuracy, and the capability to produce and handle demanding shapes and geometries. Examples of non-conventional machining processes are electrical discharge machining (EDM), electrochemical machining (ECM), laser processing, and laser-assisted machining. Abrasive processes like grinding, lapping, polishing, and super finishing are constantly developing and allow for obtaining a

fine surface finish along with high efficiency.

Photochemical machining is one the suitable process for fabrication of micro channels using different materials. However very limited works have been reported on photochemical machining of materials as well as on the fabrication of micro channels using photochemical machining. Therefore, there is a definite scope for work in this area in order to establish this technique for manufacturing of micro channels.

The PCM industry presently plays a vital role in the production of a variety of precision parts viz. micro fluidic channels, silicon integrated circuits, copper printed circuit boards and ornamental items. It is mainly used for manufacturing of micro-components in various fields such as electronics, aerospace and medical.

There is an increased scientific and commercial interest in in-depth understanding, and further development of the aforementioned photochemical precision machining processes. Research is moving forward through experimental studies, as well in the field of modeling and simulation, exploiting the increased available computational power. As their wider use by the industry swiftly grows, research has to be focused on them, not only due to the academic and scientific interest, but also for the possible financial gain.

