



Need & Overview of Electrochemical Micro Machining

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Abstract: Material removal techniques have a pivotal role to play in component fabrication. In recent years many high strength alloys are extremely difficult to machine using the traditional processes. The major difference between conventional and non-conventional machining processes is that conventional processes use a sharp tool for material removal by physical means where as the non-conventional techniques remove material by utilizing chemical, thermal, or electrical energy or a combination of these energies. These alloys were developed for a variety of industries ranging from aerospace to medical engineering. Machining these alloys with conventional tools results in subsurface damage of the workpiece and in tool damage. The tool size and geometry limit the final component shape that can be machined. Another problem with these tools is that they tend to leave burrs on the machined surface. These burrs are undesirable in many applications. For example, in the medical industry the presence of even very small burrs will damage living tissues where these machined parts are used as implants. In electronic devices where a number of components are in close contact, the burrs may lead to short circuits. In mechanical components burrs may result in a misfit. Hence in this paper discussed in brief about the need and overview of EMM.

Keywords: Electrochemical Micro Machining (EMM), Electro chemical Machining (ECM), Inter electrode Gap, Electrolyte, Micro Tool.

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