

## عنوان مقاله:

Contoured Hole in G.E Frame-9 Gas Turbine Blades

## محل انتشار:

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## خلاصه مقاله:

Recent developments in air engines call for more efficient means of turbine blade cooling to have higher power generation for the same unit size with increased inlet air temperature. To allow the turbine to operate at higher temperature, thousands of cooling holes are drilled in turbine blades. In order to increase heat transfer in cooling holes, the present design demands the wall of the cooling passage should be provided with contoured ribs. These irregularities help in inducing turbulence in the flow of cooling air, thereby increasing the rate of heat transfer. For drilling these kinds of contoured deep holes in a turbine blade made of material such as GTD-111, the conventional drilling techniques are not suitable. The shaped tube electrolytic machining (STEM) is used to perform the task of drilling contoured holes in difficult-to-machine materials. In the present case, contoured holes are drilled in GE Frame-9 and type of its material is GTD-111. Experimentally obtained profiles are compared with the profiles derived theoretically from the basic electrochemical machining equations

## کلمات کلیدی:

G.E Frame9, STEM, Drilling, Gas Turbine Blade

## لینک ثابت مقاله در پایگاه سیویلیکا:

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