عنوان مقاله:

Studying the Behavior of a Variable Pitch Hydro Screw Micro Hydro Turbine, Numerical Analysis and Experimental Investigation

محل انتشار:

مجله بین المللی طراحی پیشرفته و تکنولوژی ساخت, دوره 12, شماره 4 (سال: 1398)

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خلاصه مقاله:

Hydro screw is an axial micro hydro turbine of Archimedean origin. Due to ever-increasing need for clean fuel based and environmentally clean electric power, a research project was undertaken at IROST. In this study, the effect of spiral variable pitch on hydro screw turbine has been studied numerically. Based on the results, it was found that the turbine had the best efficiency with a spiral pitch of 1.5. Accordingly, the small model of this turbine was made and tested in the laboratory. The results indicate that the numerical results of the calculations are in good agreement with experimental result, and therefore they can be used safely in the course of subsequent turbine studies. In summary, the results indicate that the maximum turbine output is between 62% and 68% which is about 30% higher than the constant pitch blade turbine.

کلمات کلیدی:

Variable Pitch, Flow, Screw, Hydro Power