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## PENGARUH SUDUT KEMIRINGAN TERHADAP PUTARAN DAN DAYA HIDROLISIS PADA TURBIN ARCHIMEDES SCREW PORTABLE

*Picohydro Power Plant is one of the renewable energy sources which utilizes water or irrigation channels with a small head and flow rate. Many factors can affect the hydrolysis power and also the power on the rotation of the screw turbine, one of which is the turbine design. The existing turbine design needs to be evaluated by several factors such as inner and outer screw diameters, slope, screw pitch, number of blades and condition of inlet and outlet as well as head and water flow. Moreover, if the turbine is designed for a portable one with a length of approximately only 1 meter. These factors indicate that the design of each screw turbine design needs to be optimized through data analysis to find the optimal hydraulic power and turbine rotation. This study aims to determine the effect of the tilt angle of the Archimedes screw turbine on the turbine rotation and also the hydraulic power of the picohydro power plant with variations of the turbine tilt angle ( $K$ )  $20^\circ$ ,  $30^\circ$  and  $40^\circ$ . The method used in this research is to use a Performance Experiment Study by making an Archimedes screw turbine as a picohydro power plant. From the test results using a discharge of 2 ltr/sec, the largest turbine rotation is 144.3 at a  $30^\circ$  turbine tilt angle with 10.77 Watt of produced hydraulic power ( $P$ ).*

**Keywords :** Archimedes Screw, Picohydro, Hydrolysis Power.

