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# Prospect for pico-hydropower generation from 3D printed Polyethylene Terephthalate Glycol (PETG) Polymer: A Case Study in Pusu River, Malaysia

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Abstract
Author keywords
Sustainable Development Goals
SciVal Topics
Metrics

## Abstract

In Malaysia, rural communities rely on fossil fuel-powered generators for electrification. A small-scale Archimedean Screw Turbine (AST) can be utilized to generate pico-hydropower for potential clean energy generation. However, no study focuses on investigating the strength and torque of 3D printed AST with Polyethylene Terephthalate Glycol (PETG) polymer. Hence, the aim of this work is to investigate the mechanical strength and torque generation of 3D printed PETG AST through Ultimate Tensile Strength (UTS) test and experimental test. UTS test results show that 37.10MPa is the highest tensile strength obtained while 0.0195Nm is the optimum torque generated through AST experimental test. © 2024

Author keywords

3D printing; Archimedean screw turbine (AST); Polyethylene Terephthalate Glycol (PETG); Tensile strength; Torque generation

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