

B.Tech Project Report
on
Development of Pico-Hydel Power Technology using Pump as Turbine

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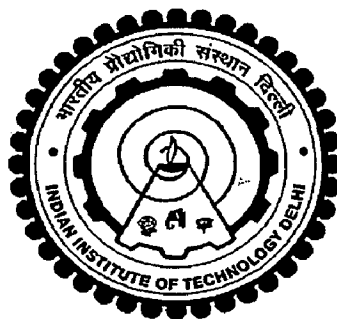
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CERTIFICATE

The work presented in this report has been carried out by us for the course Major Project Part 1 & Part 2. The report accurately reflects the work done by us. All the material taken from other sources has been fully acknowledged.

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Saurabh Suman and Vikas Kumar have worked under my supervision. I have read this report. It accurately reflects the work done by the students.

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ABSTRACT

There are vast Nano and Pico scale hydro resources available in India and worldwide. These resources go unharnessed because of complexities involved in setting up of a normal turbine driven hydro power plant. In these situations pump as turbine (PAT) can be a suitable alternative because of simple technology, less complexity and availability. The technology involves a centrifugal volute pump with its impeller blades running in reverse direction which works similar to that of a Francis turbine. This technology can be of great use to the society but because of lack of adequate research in this field, this alternative still remains unexplored. The purpose of this project is to find characteristic curves for a given PAT, analyze the experimental results, design guide vanes to increase its efficiency and look for other options of improvement in efficiency.

Keywords: PAT (Pump as Turbine), Centrifugal Pump, Impellers, Dynamometer, RPM, Head, efficiency, Flow rate

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