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DEPARTMENT OF MECHANICAL ENGINEERING
A Project Report on
**“Fabrication of Water Flow Visualization Apparatus &
Flow Visualization using Hydrogen Bubble Technique”**

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ABSTRACT

Flow visualization is the study of methods to display dynamic behaviour in liquids and gases. The areas in which fluid flow plays a role are numerous. Gaseous flows are studied for development of cars, aircrafts, and spacecrafts and also for design of machines such as turbines and combustion engines. Liquid flow research is necessary for naval applications such as ship design and is widely used in civil engineering projects such as harbour design and coastal protection. In chemistry, knowledge of fluid flow in reactor tanks is important. In medicine, flow in blood vessels is studied. Flow plays a major role in cooling of electronic circuits and understanding its complexities help in thermal management of the ICs. Numerous other examples could be mentioned. In all kinds of fluid flow research, visualization is a key issue. Obtaining good flow visualization results is, in many ways, more an art than a science, and experience plays a deciding role. The development of modern techniques for digital image processing of photographic records and use of computers for data analysis has made quantitative measurement by using flow visualization more feasible.

The project deals with fabrication of a water flow channel in which flow can be visualized using hydrogen bubbles generated by electrolysis of water. A test channel is fabricated in which hydrogen bubbles are generated by electrolysis of water which flow with water showing flow pattern around test object.