

VISVESVARAYA TECHNOLOGICAL UNIVERSITY
JNANA SANGAMA, BELGAUM – 590018
KARNATAKA



PROJECT REPORT
ON
**“DEVELOPMENT OF PROTOTYPE, MICROSYRINGE
INFUSION PUMP”**

Sponsored by Karnataka State Council for Science and Technology (KSCST),
Indian Institute of Science (IISc), Bangalore

SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE AWARD OF THE DEGREE.
BACHELOR OF ENGINEERING IN
ELECTRONICS & COMMUNICATION ENGINEERING

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SYNOPSIS:

Infusion Pumps are an effective pathway for delivering fluid, blood, and medicants to a patient's vital organs. It is an implanted fluid propulsion system with self-contained power source for providing long-term controlled-rate delivery of drugs such as chemotherapeutic agents or analgesics. Delivery rate may be externally controlled or osmotically or peristaltically controlled with the aid of Transcutaneous monitoring.

Since the entire blood supply in a human body completely circulates within 60 seconds, substances introduced into the circulatory system are distributed rapidly. An infusion device typically consists of three major components: the fluid reservoir, a catheter system for transferring the fluids into the body, and most importantly, a device that combines electronics with a mechanism to generate and regulate flow.

A pump with a stepper or servo-controlled dc motor can be used to provide the driving force for the fluid by mechanized displacement of the contents in the fluid reservoir. The infusion of drugs requires high flow rate accuracy and flow uniformity. Sensors are used to count the number of drops passing through the drip chamber to provide flow feedback for automatic rate adjustment. This project helps us to regulate the flow of fluid into the human body.

In our project, the handheld is designed using 8052 microcontroller, 16*2 LCD to display the information's, six keys to perform the specified operations and stepper motor and gears to push the fluid from the syringe to the human body.