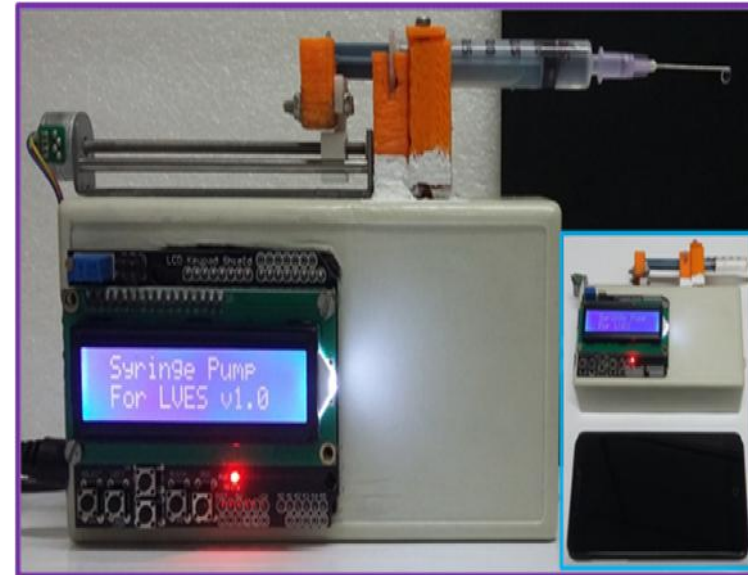




## Name of the Technology: High Resolution Syringe Pump

**Summary:** There are several types of infusion devices commonly in use, employing a variety of mechanisms to control the flow and volume being infused for a range of purposes and environments. The most common is syringe pump which works by pushing a plunger to drive a syringe at a predetermined rate. An automated syringe pump containing a small infusion pump and simple source of linear motion that precisely controls the speed at which the piston is driven has been indigenously developed in the laboratory at CSIR- National Physical Laboratory. The instrument can precisely pump liquid with lower limit of volume ranging in few micro-litres. The technology is now ready for commercialization with the help of interested industry. Following are the list of parameters of the developed system.



### Specifications

- Dimension: 6 inch
- Step angle: 18°
- No. of steps of motor: 20
- No. of threads on screw: 180
- Length of screw: 90 mm
- Diameter of screw: 3 mm
- Pitch: 0.5 mm/rev
- Resolution: 25µm/step
- Size of stepper motor: 15 mm
- Effective stroke length: 80 mm

### Advantages:

- Easily adaptable working ranges by change of the diameter of the syringe.
- Minimal injected volume is proportional to the syringe diameter.
- Offer advantage of being able to string together a sequence of steps



### Applications:

- Microdialysis
- Organ/tissue perfusion and fluid circulation
- Palliative care, to continuously administer analgesics (painkillers), antiemetic and other drugs
- Syringe pumps are also useful in microfluidic applications such as microreactor design and testing
- Electrospinning and electrospaying

### Choose the Readiness level of the Technology:

Idea	Concept Definition	Proof of Concept	Prototype	Lab Validation	Technology Development	Technology Demonstration	Technology Integrated	Market Launch

### Related Patents:

Patent No: **Know-how**,

Country: **Not applicable**,

Publication Date: **Not applicable**;

Grant Date: **Nil**;

Year of Introduction: **Not applicable**

**Broad Area/Category:** Biomedical and Microfluidics

### User Industries:

- All Biomedical and microfluidic industries
- Inspection service providers working for Govt. or Private
- Universities and research laboratories

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