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 electrospraying

Choose the Readiness level of the Technology:

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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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