

# Bi-Directional Micro Ball Valves Using Polymeric Tubing

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## Technology description

### Summary

The field of microelectromechanical structures (MEMS) involves the development of miniaturization technology to control processes at orders of magnitude smaller than what is currently available. An integral component of MEMS is microfluidics: technologies that control the flow of fluids (liquids and gases) on a microscale. With precise fluid flow regulation, processes such as drug delivery and implantable medical devices can execute functions on a platform the size of a semiconductor chip. A new bi-directional, normally closed micro ball valve has been developed which permits the control of flow of fluids on a micro scale. This invention features innovative design features which represent improvements over conventional designs.

### Advantages

The invention utilizes a unique valve design, which permits insertion of the device into microfluidics tubing as an in-line valve; the devices can be easily connected with two fluidic ports of typical fluidic systems.

The invention utilizes novel design and control features, which should reduce leakage relative to current designs.

The devices are easy to fabricate.

### Institution

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