Abstract

Fluidic inverters, or venturi effect vacuum pumps, are commonly used in industrial components that provide a point of use vacuum from an existing compressed air infrastructure. Typical applications include grippers for handling thin sheet, fragile, or polished surface materials. Compressed air usage, representing energy consumption, is significant for these devices. Consequently, a potential customer base has been identified with a need for enhanced energy efficiency. Microfluidic devices represent an approach to address this need. This paper describes the design, fabrication and test process used develop a more energy efficient pressure inverter at the microfluidic scale.