

# ABSTRACT

Micro-pumps are becoming an essential part of bio-medical and electronics. Its applications in drug delivery and insulin delivery is becoming an important research area. With two types including mechanical and non-mechanical micro-pump, this technology is rapidly growing. Among various different types of micro-pump, electro-static micro-pump is considered efficient and easy to use and design. In this work the process parameters of the electro-static micro-pump are analyzed using the MATLAB fuzzy rule based system. The voltage applied and frequency is taken as input and its effect on flow rate and back pressure as output is analyzed. The results show that the voltage and well as frequency increase the flow rate resulting in the decrease in back pressure. The error between the simulation and calculated values are less than 0.5% which shows the accuracy of the calculations.