Abstract Submitted
for the DFD19 Meeting of
The American Physical Society

A simple and effect method for generating sub-kilohertz oscillatory flows in microchannels GABRIEL JUAREZ, GIRIDAR VISHWANATHAN, University of Illinois — Oscillatory flows present a wide range of exciting possibilities in microfluidics ranging from propulsion to trapping to mixing. Explorations involving oscillatory flows in microfluidics are often made challenging by the need for fabrication of complex microfluidic devices or miniaturized actuators. We report the construction and evaluation of a detachable speaker-based apparatus capable of producing highly sinusoidal oscillatory flows in micro-channels with frequencies ranging from 20-1000 Hz and maximum amplitudes at least as large as 100 microns. Useful applications using very simple microchannel geometries are demonstrated.

Gabriel Juarez
University of Illinois

Date submitted: 01 Aug 2019 Electronic form version 1.4