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High Frequency Inertial Particle Focusing GIRIDAR VISHWANATHAN, DIANZHUO WANG, GABRIEL JUAREZ, University of Illinois Urbana-Champaign — Inertial Focusing in micro-channels is a simple and reliable means of sorting, separating and controlling particle position, usually accomplished by producing steady flow in a long micro-channel. Recently, oscillatory flows have been shown to enable focusing of sub-micron particles, in much shorter channel lengths and at decreased pressure gradients even for frequencies < 20 Hz. Considering the substantial improvement of focusing efficiency even at relatively low oscillation frequencies, we present our experimental observations on the focusing of particles in the high frequency $(20 - 1000$ Hz) range. The role of the channel Womersley number on the focusing performance is critically examined.

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