

Abstract Submitted  
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**Fluid rheological effects on particle migration in rectangular microchannels.**<sup>1</sup> DI LI, XIANGCHUN XUAN, Clemson University — There has been an increasing interest in the use of viscoelastic solutions for particle focusing and separation in microfluidic devices. These passive manipulations arise from the flow induced elastic lift force that interacts with the inertial lift force for an enhanced control of particle motions. The rheological properties of the suspending fluid are supposed to have a significant impact on particle migration in microchannels. We present in this work an experimental investigation of the elastic and/or inertial focusing of polystyrene particles suspended in the flow of four types of fluids with varying rheological properties through a straight rectangular microchannel. Such a fundamental study is expected to provide useful data for fluid rheological effects on particle migration, which may be used to validate theoretical models.

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