

Effect of Liquid Viscosity on Particle Equilibrium Position in straight microfluidic channel

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The fluid mechanics of single-phase flow with relatively viscosity in straight microfluidic channel was investigated experimentally. The adopted technique is based on particle migration phenomenon occurring when fluid with 10 micron diameter particles flow in straight 200 micron width 100 micron height microfluidic channel. The method is applied to find equilibrium position of the particles in propylene glycol solution at various ranges of viscosity. The objective is to find relationship of particle equilibrium position with viscosity. The result is compared with computational simulation for particle equilibrium position. The particles in viscosity fluid flow are affected by initial force and velocity gradient. The particles equilibrium position locate where those force balance.

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