

Abstract Submitted  
for the DFD14 Meeting of  
The American Physical Society

**Wall-Induced Non-inertial Lift in Electrophoresis for Continuous Particle Separation** XIANGCHUN XUAN, XINYU LU, Clemson University — We present in this talk a novel continuous-flow electrokinetic method for particle separation based on intrinsic properties which may include size, surface charge, shape and potentially deformability. This method utilizes the wall-induced non-inertial lift force to deflect a sheath flow-focused particle mixture to property-dependent positions in a laminar flow through a straight microchannel. It is demonstrated through both a binary and a ternary separation of polymer particles by size. A numerical model is also developed to understand this separation and to study the parametric effects on it. The numerical predictions are found to agree reasonably with the experimental observations.

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Date submitted: 31 Jul 2014

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