

Abstract Submitted
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Particle electrokinetic focusing in curved microchannels¹ JUNJIE ZHU, XIANGCHUN (SCHWANN) XUAN, Department of Mechanical Engineering, Clemson University — Particle focusing is usually a necessary step in continuous flow particle separation. It may be achieved using sheath flows to pinch the particle stream or external forces to manipulate particles directly. We present in this talk a novel electrokinetic technique for particle focusing in curved microchannels. Such focusing is attributed to the dielectrophoretic forces induced around the turns when a DC electric field is applied to drive the particle stream through a curved microchannel by electrokinetic flow. Particle focusing is demonstrated using 5 μm and 10 μm polystyrene beads in a 50 μm wide channel at low electric fields. A numerical model is also developed to simulate the particle focusing process.

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Xiangchun (Schwann) Xuan
Department of Mechanical Engineering, Clemson University

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