Electronic Supplementary Material (ESI) for Lab on a Chip.

Computational Inertial Microfluidics: A Review

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Table S1. Inertial Microfluidic Foundations

Computational Inertial Microfluidics Foundations	Analytically Confirmed	N.S Based Confirmed	LBM Confirmed
Inertial lift scales with $\rho U^2a^4/H^2$ for $a/H \ll 1$	O	FSPP	-------
Inertial lift scales with $\rho U^2a^3/H$ near the channel center for finite-size particle	--------	FSPP	-------
Inertial lift scales with $\rho U^2a^6/H^4$ near the channel wall for finite-size particle	--------	FSPP	-------
Different particle focusing patterns in rectangular channels	O	FSPP, DLM	O
Rigid elliptical particle motion in rectangular channels		IBM	O
Slight shift of focusing position toward the walls by increasing in Re	O	FSPP, DLM	O
Reverse streamlines created near a particle in confined flow	O	FSPP, IBM, DLM	O
Reverse streamlines create repulsive particle-particle interaction	O	--------	O
Trains of self-assemble particles due to particle interaction with both the walls and other particles	--------	--------	O
Inertial particle focusing in grooved channels	--------	--------	O
Inertial particle motion in channels with pillars	--------	--------	--------
Rigid spherical particle focusing in spiral channels with rectangular cross section	--------	FSPP	--------
Particle motion in spiral channels with trapezoidal cross section	--------	--------	-------
Motion of rigid spherical particle in serpentine channel	--------	FSPP	O
Motion of rigid spherical particle in cavity and contraction-expansion arrays microchannels	--------	-------	O
Motion of deformable or non-spherical particles in non-straight channels such as serpentine, spiral, expansion contraction, cavity	--------	-------	-------
Inertial motion of deformable particles in a channel with junction	--------	ALE, DLM	O
Focusing positions of particles in non-rectangular straight channels	--------	FSPP	-------
Rigid particle motion in Giesekus and Oldroyd-B fluids as a subset of viscoelastic fluids in rectangular channels	--------	DLM, IBM, FSPP	-------
Migration of deformable particles in Giesekus and Oldroyd-B fluids in a duct	--------	ALE, DLM	-------
Migration of non-spherical particle in viscoelastic fluids in confined shear flow	--------	-------	-------
Particles motion in non-Newtonian fluids in non-straight channel such as spiral, serpentine etc.	--------	-------	-------