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Brownian Diffusion of Nanoparticles in Confined Geometries[1]
SHAHRAM POUYA, MANOOCHEHR KOOCHESFAHANI, Michigan Sate University — The transport and motion of nanoparticles is an important aspect of designing micro and nano fluidic devices for biological and chemical analysis. We present preliminary measurements of hydrodynamics of nanoparticles in micro- and nano-confined geometries. Brownian fluctuation of nanoparticles is investigated by imaging the motion of single nanoparticles inside nano/micro gaps at different confinement ratios. The results are presented for the case of zero shear rate, where only pure diffusive motion of nanoparticles within the gap is considered. Results are compared with previous measurements using a different approach and models of this process.

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