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Enhanced particle transport in an oscillating sinusoidal optical potential. WEIQIANG MU, Northwestern Univeristy, LAN LUAN, Northwestern University, GANG WANG, Indiana University, Purdue University, Fort Wayne, GABRIEL SPALDING, Illinois Wesleyan University, JOHN KETTERSON, Northwestern University, NORTHWESTERN UNIVERSITY COLLABORATION, INDIANA UNIVERSITY, PURDUE UNIVERSITY, FORT WAYNE COLLABORATION, ILLINOIS WESLEYAN UNIVERSITY COLLABORATION — We have studied the delivery of a colloidal particle in the presence of an oscillating, spatially periodic, optical potential. The average particle velocity relative to the fluid velocity in this potential depends greatly on the oscillation amplitude and frequency. The results of both our simulations and experiments show that for some combinations of these parameters, the average particle velocity can be enhanced due to the synchronization of the particle movement with the oscillating potential.

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