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Capillary deposition of advected floating particles EMILIE DRESSAIRE, New York University, AYMERIC DEBAISIEUX, ENSTA, FEDERICO GREGORI, New York University — The deposition and aggregation of particles flowing through a confined environment can dramatically hinder the transport of suspensions. Yet, the mechanisms responsible for the deposition of particles in shear flow are not fully understood. Here, we use an experimental model system in which floating particles are advected on the surface of a water channel and deposited on fixed obstacles through attractive capillary effects. By varying the flow rate of the liquid, the wetting properties and size of the particles and obstacles, we can tune the magnitude of the capillary and hydrodynamic forces that determine the probability of deposition and the equilibrium position on the substrate. We show that arrays of obstacles can be designed to efficiently capture the floating particles advected by the flow.

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