

Abstract Submitted  
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**Separation and filtration systems with an array of anchored liquid-bridges as stationary phase** SIQI DU, GERMAN DRAZER, Rutgers, The State University of New Jersey — We first present a novel deterministic lateral displacement (DLD) system in which the standard array of cylindrical posts is replaced by an equivalent array of anchored liquid-bridges. The water bridges are created between two parallel plates and anchored to the bottom one by means of a square array of cylindrical wells. We present results demonstrating that, similar to traditional DLD systems, anchored-liquid DLD arrays lead to size-based separation of suspended particles. We will also discuss cases in which liquid-bridge deformation leads to separation by density. Finally, we discuss the possible use of such arrays to filtrate particulate matter in air.

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