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Dielectrophoresis Force of PMMA Colloidal Clusters HYUNJOO PARK, New York University, MING-TZO WEI, H. DANIEL OU-YANG, Lehigh University, DAVID PINE, New York University — DEP has long been applied to be a means for manipulating and separation of colloidal subjects. Here, we report quantitative analysis of DEP force under controlled parameters has been missing due to the difficulty in the direct measurements of the forces. Using IR laser to trap an individual colloidal cluster in a DEP field and to function as a pico-Newton force sensor, we were able to measure the frequency dependent DEP force for PMMA colloidal clusters with different aggregation number (n). We found that the crossover frequencies decrease with increasing size and follow a power-law dependence R^{-2} where R is the effective radius of the clusters.

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