

Supporting Information for:

Charging of Multiple Interacting Particles by Contact Electrification

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1. Comparing Steady-state Charge of Dyed and Undyed Nylon Beads

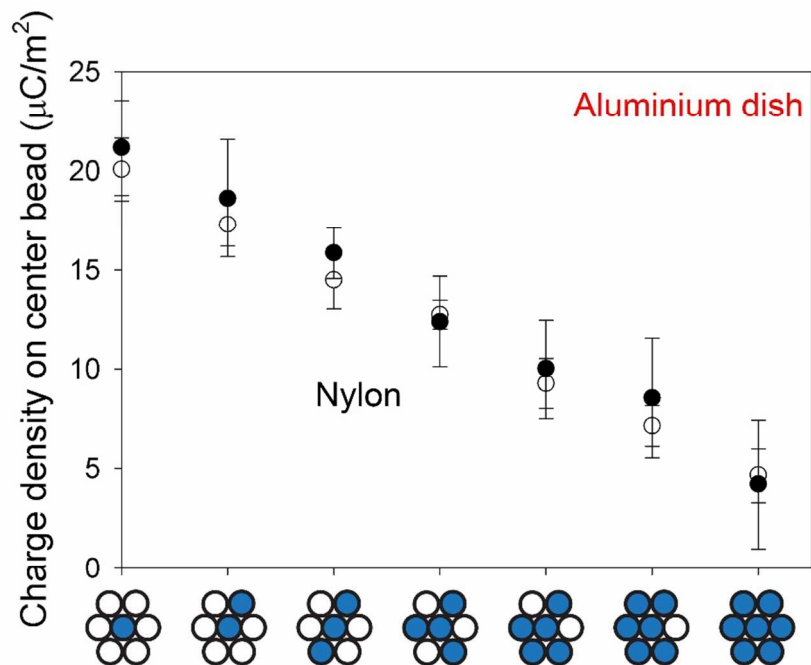


Figure. S1 Comparison of dyed Nylon beads (solid black circles) and undyed Nylon beads (open circles). In order to show that the blue dye in the Nylon beads does not make a difference in our experiments, we repeated the experiment shown in Figure 3a in the main text with undyed Nylon beads. The charge of the center bead is similar for both dyed and undyed Nylon beads.

2. Steady-state Charge is Reached After 3 mins of Agitation

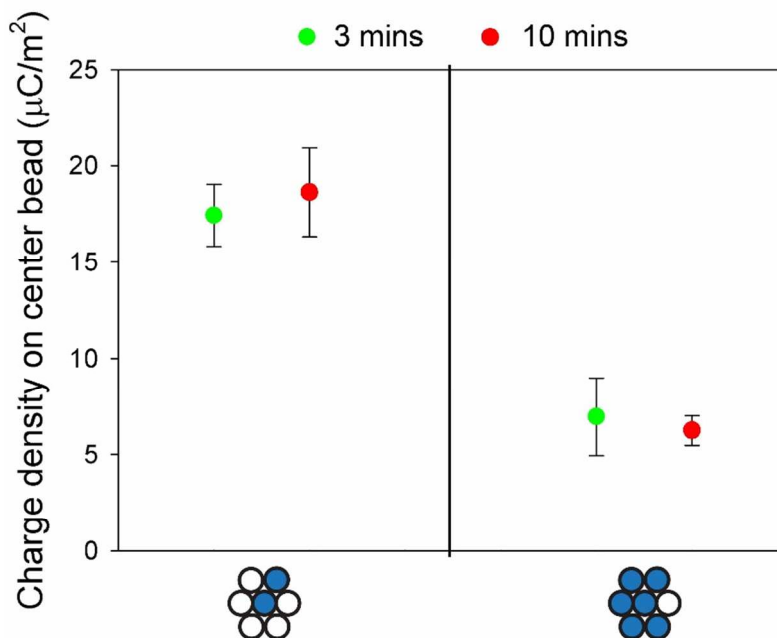


Figure. S2 Charge of the center bead was indistinguishable when the system was agitated for either 3 mins or 10 mins. The plots show two cases in which a center Nylon bead is surrounded either by one Nylon or five Nylon beads. The rest of the beads on the dish were Teflon. Since the charges are indistinguishable in both cases (for either 3 mins or 10 mins of agitation), we conclude that a steady-state charge is attained after agitating the dish for 3 mins. The dish used was aluminum. ($n = 7 - 12$)

3. Diffusion of Charge for a Dish with a Column of Nylon Beads

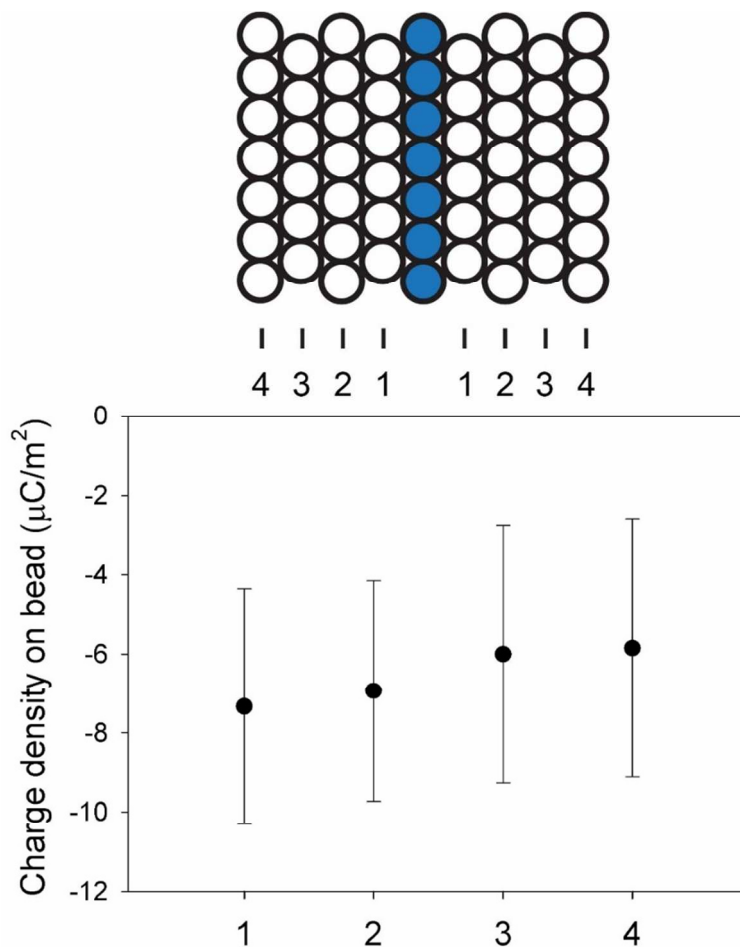


Figure. S3 Transfer of charge for the case when there is only a line of Nylon beads in the middle of the dish, and the rest of the beads are Teflon (scheme on top). The graph shows the charges of the Teflon beads immediately next to the line of Nylon beads (layer “1”), and subsequent layers away from the Nylon beads (layers “2”, “3”, and “4”). The charges are statistically indistinguishable when beads are arranged in this configuration. The dish used was aluminum. ($n = 12 - 14$)