Supporting Information

Resistive Pulse Analysis Microgel Deformation During Nanopore Translocation

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Capture and Release of 570-nm Microgel Particles at GNMs of radii < 375-nm

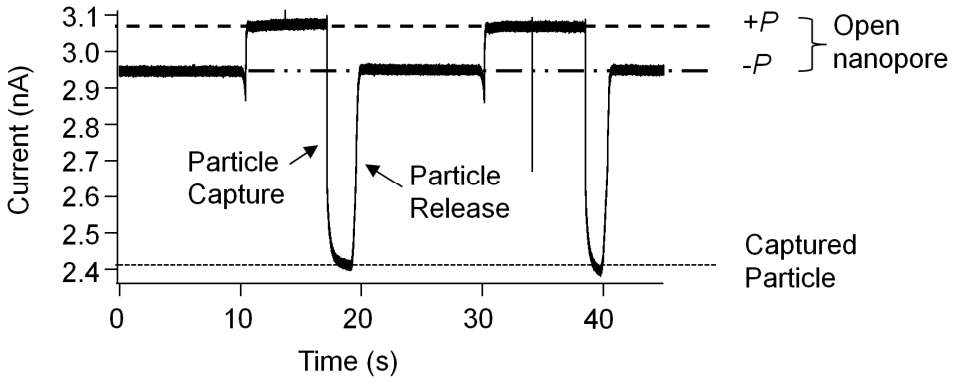

Figure S1. An *i-t* trace showing the capture and release of a microgel particle. The experiment was performed using a 358-nm GNM, in a 10 mM KCl, 1 mM PBS (pH 7) solution, with an applied voltage and pressure of +0.1 V and -50 mmHg, respectively (internal vs. external). Particles captured at *–P* are held at the GNM orifice until the pressure is reversed to *+P*. The difference in the currents of the open nanopore at *+P* and *–P* is due to the pressure-dependent ion distribution inside the nanopore.

Analysis of the Probability of Overlapping Translocation Events

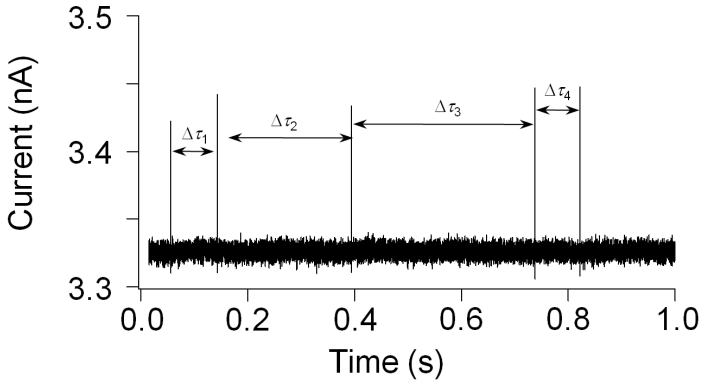

Figure S2. A portion of a 60.85 sec *i-t* trace recording 570-nm-radius microgel particle translocation events through a 433-nm-radius GNM. The experiment was performed in a 10 mM KCl, 1 mM PBS (pH 7) solution with an applied voltage and pressure of +0.1 V and -50 mmHg, respectively (internal vs. external).