Supplementary Materials: Characterization of Responsive Hydrogel Nanoparticles upon Polyelectrolyte Complexation

Su-Kyoung Lee, Gyuri Hwang, Jihyun Woo, Joseph Park and Jongseong Kim

Figure S1. Histograms for the 0.5 and 5.0 L PAH aliquot addition cases for 2% BIS cross-linked microgels. As shown in panels (a,b,c,d), for the 0.5 L PAH aliquot addition as PAH is titrated into the system in small aliquots, the system goes from a point of high monodispersity before PAH addition (a) to a point of minimum radius (b); then, as more PAH is added to the system, the radius distribution significantly increases with a shift to extremely high radii indicative of aggregation (c,d). As shown in panels (e,g,h), for the 5.0 L PAH aliquot addition as PAH is titrated into the system in large aliquots, the system goes from a point of high monodispersity before PAH addition (e) to a point of minimum radius upon the first addition of PAH (f) and to a point of high radius and high monodispersity (g,h), indicative of osmotic/Coulombic swelling. [AAc]/[NH2] for (b) is 0.67, (c) is 0.19, (d) is 0.13, (f) is 0.27, (g) is 0.067, (h) is 0.033.

Figure S2. Time-dependent nanogel titration plot for the 2% BIS and 10% AAc nanogels upon the addition of 0.5 μL PAH aliquots at 0 (○), 210 (□), 420 (△), and 630 (▽) s. Note that red-dashed box shows time-dependent kinetics.
**Figure S3.** Time-dependent nanogel titration plot for the 2% BIS and 10% AAc nanogels upon the addition of 5.0 L PAH aliquots at 0 (○), 210 (□), and 420 (△) s.

**Figure S4.** Electrophoretic mobility values as a function of PAH addition for 2% BIS and 98% NIPAm microgels.