Supporting Information:
Nonelectrostatic Adsorption of Polyelectrolytes
and Mediated Interactions between Solid Surfaces

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Figure S1: Adsorbed amount as a function of the depth of the nonelectrostatic potential for varying salt concentrations with no electrostatic correlation. (a) Adsorption on like-charge surface with $Q = -0.1 \, \text{e/\text{nm}^2}$. (b) Adsorption on neutral surface. The curves for $\rho_{\text{salt},b}\sigma^3 = 0.0$ and $\rho_{\text{salt},b}\sigma^3 = 1 \times 10^{-4}$ are indistinguishable in both panels. The inset in (b) shows the transition region for the salt effects. The bulk polyelectrolyte monomer density is $\rho_{p,b}\sigma^3 = 0.01$; and the polymer chain length is $N = 50$ and the valency of the polyelectrolyte is $Z_p = -0.5$. 
Varying Monomer Bulk Concentration - Adsorption

Figure S2: Adsorbed amount as a function of the depth of the nonelectrostatic potential for varying salt concentrations for a negatively charged surface ($Q = -0.1\, \text{e/nm}^2$). Each panel is for a different bulk concentration. The curves for $\rho_{\text{salt},b}\sigma^3 = 0.0$ and $\rho_{\text{salt},b}\sigma^3 = 1 \times 10^{-4}$ are indistinguishable in most panels. The polymer chain length is $N = 50$ and the valency of the polyelectrolyte is $Z_p = -0.5$. 

\[ \times 10^{-6}\, p_{p,b}\sigma^3 = 0.01 \]

\[ \times 10^{-6}\, p_{p,b}\sigma^3 = 0.05 \]

\[ Q = -0.1\, \text{e/nm}^2 \]

\[ \times 10^{-6}\, p_{p,b}\sigma^3 = 0.1 \]

\[ Q = -0.1\, \text{e/nm}^2 \]

\[ \times 10^{-6}\, p_{p,b}\sigma^3 = 0.15 \]

\[ Q = -0.1\, \text{e/nm}^2 \]
Figure S3: Adsorbed amount as a function of the depth of the nonelectrostatic potential for varying salt concentrations for a neutral surface. Each panel is for a different bulk concentration. The curves for $\rho_{\text{salt},b}\sigma^3 = 0.0$ and $\rho_{\text{salt},b}\sigma^3 = 1 \times 10^{-4}$ are indistinguishable in most panels. The polymer chain length is $N = 50$ and the valency of the polyelectrolyte is $Z_p = -0.5$. 
Varying Monomer Bulk Concentration - Interaction

Figure S4: Polyelectrolyte-mediated force between surfaces as a function of surface separation for varying strengths of nonelectrostatic attraction to the surface without the Hamaker attractive potential. The bulk salt concentration is $\rho_{\text{salt}, b} \sigma^3 = 0.0$; the polymer chain length is $N = 50$; the valency of the polyelectrolyte is $Z_p = -0.5$; and the surface carries a negative charge of $Q = -0.1 \text{ e/nm}^2$. 

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Figure S5: Polyelectrolyte-mediated force between surfaces as a function of surface separation for varying strengths of nonelectrostatic attraction to the surface with the Hamaker attractive potential. The Hamaker constant is $5 \times 10^{-20}$ J. The bulk salt concentration is $\rho_{\text{salt},b} \sigma^3 = 0.0$; the polymer chain length is $N = 50$; the valency of the polyelectrolyte is $Z_p = -0.5$; and the surface carries a negative charge of $Q = -0.1 \text{ e/nm}^2$. 

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\rho_{p,b} \sigma^3 = 0.01
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\rho_{p,b} \sigma^3 = 0.05
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\rho_{p,b} \sigma^3 = 0.1
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\rho_{p,b} \sigma^3 = 0.15
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Figure S6: Polyelectrolyte-mediated force between surfaces for varying bulk concentrations of added salt. The polymer chain length is \( N = 50 \); the valency of the polyelectrolyte is \( Z_p = -0.5 \); and the surface carries a negative charge of \( Q = -0.1e/\text{nm}^2 \).