Supplementary information

SI 1 Functional group density profile

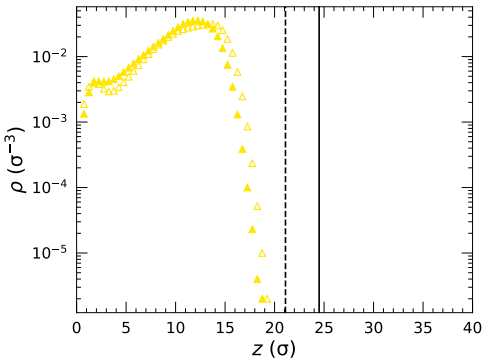

Figure SI 1.1: Semilogarithmic plot of the density profile of the functional groups of a brush with $N_r = 50$, $N_n = 50$, r:n=50:50 and $\sigma_g = 0.16$ with the responsive polymer in poor solvent conditions ($\varepsilon_{rr} = 1.0$). The vertical lines indicate h_{brush} determined from the insertion energy profiles. The nonresponsive polymers have purely repulsive interaction (filled triangles, solid vertical line) or have a weak attraction with $\varepsilon_{nn} = 0.16$ (open triangles, dashed vertical line). In both cases, the probability that the functional group was at $z > h_{brush}$ was lower than what could be measured in a simulation with a periodic box of 24×24 polymers and a simulation time of 25000τ.

SI 2 Local energy profiles

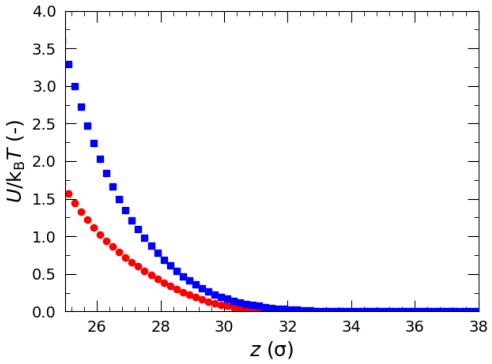

Figure SI 2.1: Lateral inhomogeneities turn the energy insertion profile in a function of brush position, as illustrated here for a binary brush with with $N_r = 114$, $N_n = 50$, $\sigma_g = 0.08$ and r:n=20:80. These insertion energy profiles of the upper brush region are obtained by positioning the sphere with a radius of 5σ above a responsive polymer cluster (red circles) or above a region rich in nonresponsive polymers (blue squares).

SI 3 Cluster area for various brush compositions

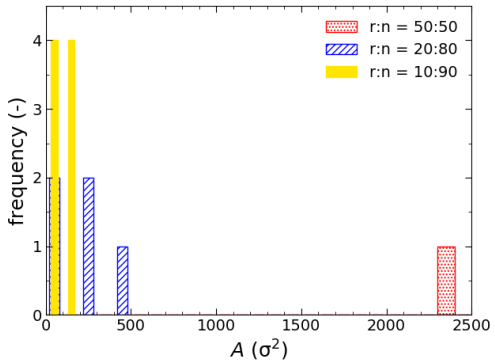

Figure SI 3.1: Histogram showing for various brush compositions the frequency at which clusters of a certain area A occur. In all cases, $N_\mathrm{r} = 114$, $N_\mathrm{n} = 50$, $\sigma_\mathrm{g} = 0.16$, $\varepsilon_\mathrm{rr} = 1.0$ and the lateral periodic box size is 60σ by 60σ.

SI 4 Relative functionality switching sensitivity for $R_\mathbf{sphere} = 3\sigma$

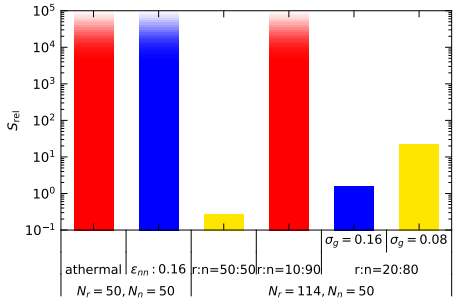

Figure SI 4.1: Relative functionality switching sensitivities determined by inserting an element with a radius of $R_\mathrm{sphere} = 3\sigma$. The values for the brushes with long nonresponsive polymers are not included, because the probability of finding a functional group at the brush surface was lower than we could measure both in good and poor solvent conditions.