

Figure S1. Schematic structure of β -cyclodextrin and adamantyl moieties.



Figure S2. Hydrodynamic diameter as a function of temperature for positively overcharged microgels. MG/pCD(1.62N+) (c(+)/c(-)=2.2) at pH7 and C(-)=0.145 mM.



Figure S3. (a) Frequency sweep data (•,o) of sample G3 were fiited with a simple Maxwell model (black line) and with a generalized Maxwell model using a distribution of 5 correlation times (blue lines). (b) parameters of the generalized Maxwell model fit (G₀, τ) expressing a relaxation time distribution. (25°C, $\gamma = 0.1\%$).



Figure S4. Oscillatory rheological measurements of hydrogels prepared using p β CD3.2N+ host and DT500Ada6 guest polymers. Storage G' and loss G'' moduli obtained from frequency sweep performed at 0.1% strain for G5. All measurements were performed at 25 °C.