

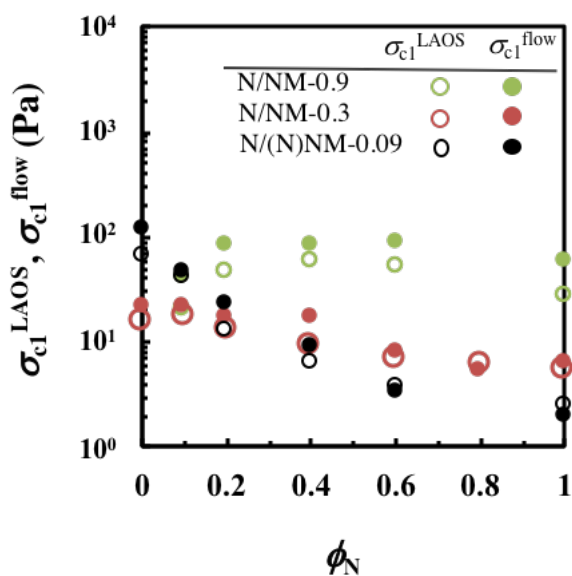
Supplementary Information

Two-Step Yielding Behavior of Densely Packed Microgel Mixtures with Chemically Dissimilar Surfaces and Largely Different Sizes

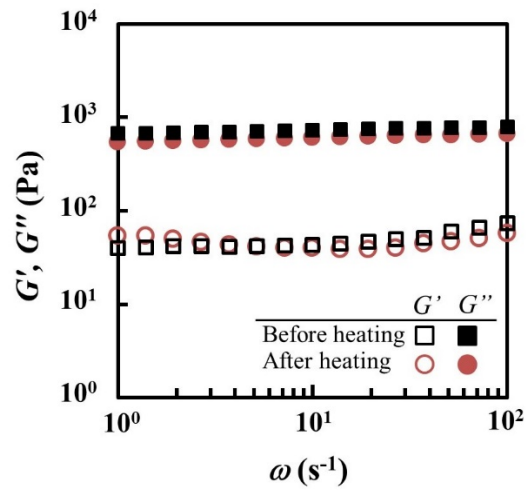
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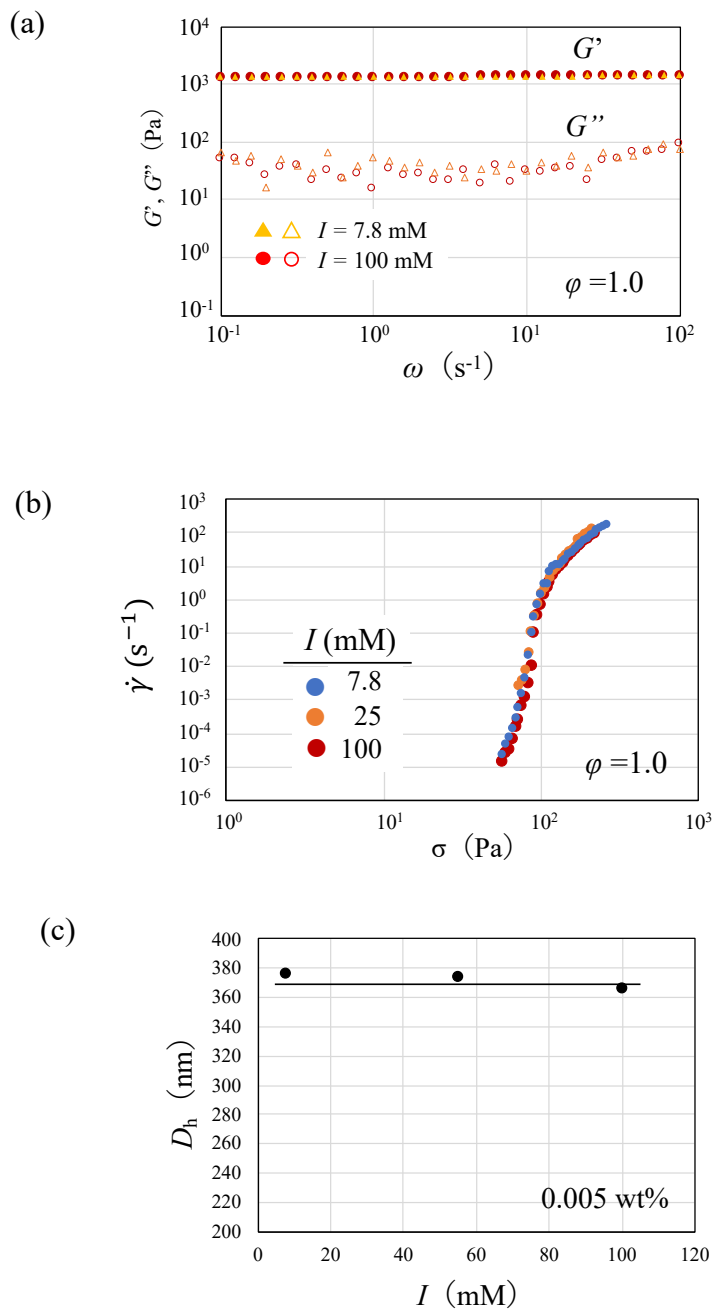
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Supporting information 1. σ_{c1}^{LAOS} and σ_{c1}^{flow} as a function of ϕ_N for N/NM-0.9, 0.3 and N/(N)NM-0.09. The values of σ_c determined from the two different methods (LAOS and steady flow measurements) agree well with each other.



Supporting Information 2. ω dependence of G' and G'' in linear response regime for N/NM-0.3 with $\phi_N = 0.4$ before and after the heating treatment. In the heating treatment, the specimen was heated to 55 °C in the shrunken state above the LCST, and then cooled to 25 °C in the swollen state. No appreciable difference in linear viscoelasticity before and after heating ensures that the packing at 25 °C corresponds to the equilibrium state.



Supporting Information 3. Effect of ionic strength (I) on (a) linear dynamic viscoelasticity, (b) steady state flow for the pastes ($\phi = 1$) and (c) particle dimension using the N-microgels in which a finite amount (0.5 mol%) of fumaric acid at $\text{pH} = 11$ ($\gg \text{pKa}$ for Fac; $\text{pKa}_1 = 3.1$ and $\text{pKa}_2 = 4.4$) at 25°C . No appreciable effect of I is observed in (a)-(c).