

## Supporting Information

### **pH- and Temperature-Responsive Supramolecular Assemblies with Highly Adjustable Viscoelasticity: A Multi-Stimuli Binary System**

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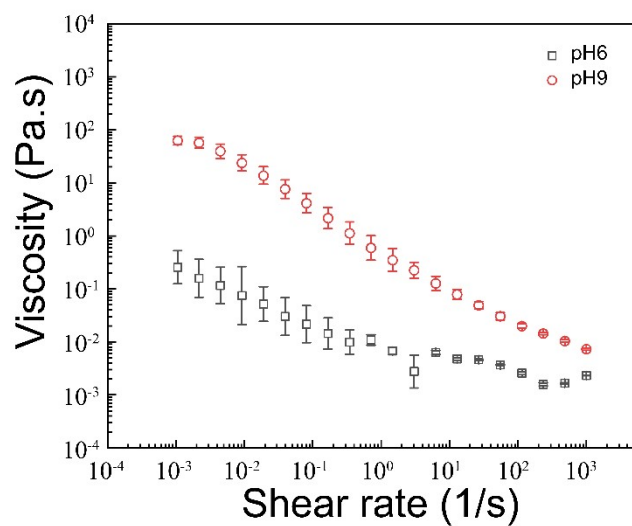
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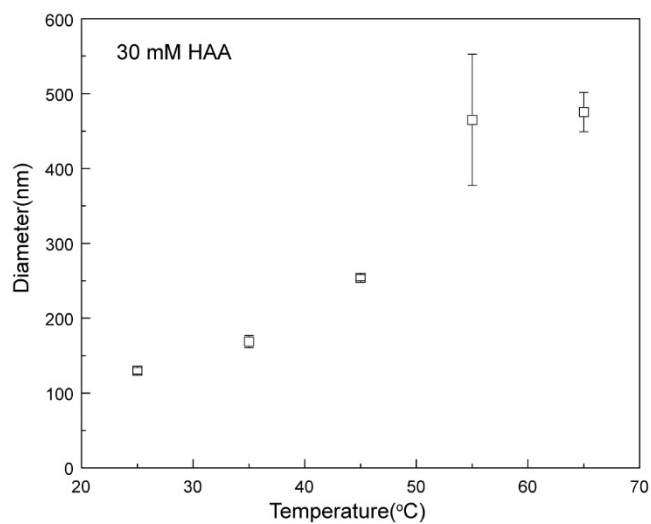
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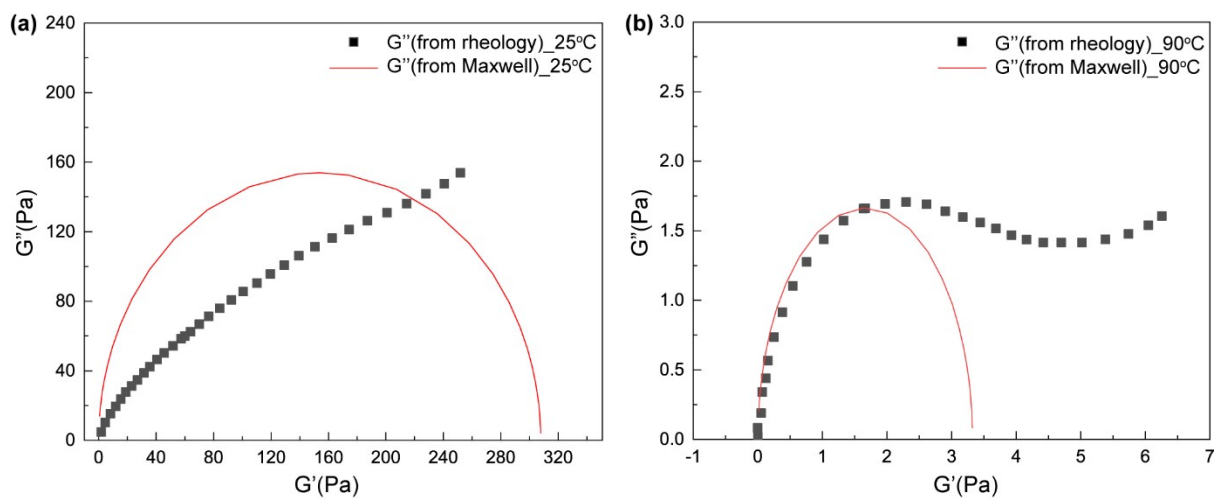
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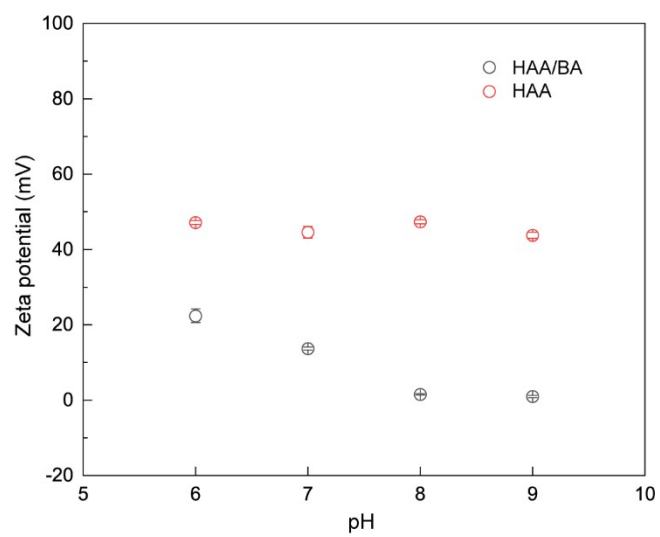
**Figure S1.** (The effect of pH on the viscosity of HAA solution at pH 6 and at pH 9. For all data, the solution involved a 30 mM HAA at room temperature.



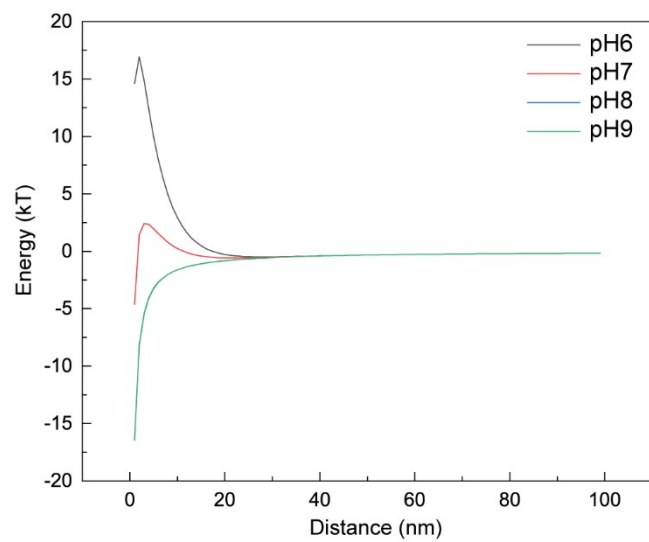
**Figure S2.** Hydrodynamic diameter of 30 mM HAA as a function of temperature measured with dynamic light scattering.



**Figure S3.** Cole-Cole plot of the binary supramolecular assembly at pH 6 and (a) 25 °C (b) 90 °C.



**Figure S4.** Zeta potential of HAA/BA and HAA with respect to pH.



**Figure S5.** Energy distance profile of HAA/BA at pH 6 to pH 9.

**Table S1.** The fit parameters for Cross model at pH 6 with respect to temperature.

<b>pH 6</b>	<b><math>\mu_0</math></b>	<b><math>\mu_\infty</math></b>	<b><math>\lambda</math></b>	<b><math>m</math></b>
<b>25 °C</b>	0.1	0.00352	101.0	0.4
<b>30 °C</b>	53.9	0.01915	43.9	0.9
<b>35 °C</b>	61.1	0.01832	40.1	0.9
<b>40 °C</b>	155.3	0.01833	73.4	0.9
<b>45 °C</b>	62.0	0.01348	38.4	0.9
<b>50 °C</b>	14.8	0.0086	69.2	0.9
<b>55 °C</b>	13.1	0.00413	119.9	0.7
<b>60 °C</b>	0.5	0.00314	6.8	0.6
<b>65 °C</b>	1.6	0.00169	12.4	0.5
<b>70 °C</b>	0.5	0.00348	18.7	0.7
<b>75 °C</b>	0.5	0.0032	4.9	0.8
<b>80 °C</b>	0.1	0.0041	0.2	1.3
<b>85 °C</b>	0.1	0.00343	0.8	0.8
<b>90 °C</b>	0.3	0.00383	4.8	0.5

**Table S2.** The fit parameters for Cross model at pH 9 with respect to temperature.

<b>pH 9</b>	<b><math>\mu_0</math></b>	<b><math>\mu^\infty</math></b>	<b><math>\lambda</math></b>	<b><b>m</b></b>
<b>25 °C</b>	1091.0	0	1603.0	1.0
<b>30 °C</b>	1525.0	0	853.0	0.9
<b>35 °C</b>	1201.0	5.13E-04	856.0	0.9
<b>40 °C</b>	–		–	–
<b>45 °C</b>	2570.1	0.0311	70.1	1.0
<b>50 °C</b>	1631.3	0.0067	96.9	1.1
<b>55 °C</b>	815.7	0.01087	31.0	1.3
<b>60 °C</b>	889.5	0.00241	46.9	1.2
<b>65 °C</b>	–		–	–
<b>70 °C</b>	–		–	–
<b>75 °C</b>	309.8	0.00908	15.7	1.3
<b>80 °C</b>	–		–	–
<b>85 °C</b>	1.0	0.00523	13.4	0.8
<b>90 °C</b>	1.4	0.00455	4.4	0.8



**Table S3.** The hydrodynamic size of HAA/BA supramolecular assemblies at varying temperatures.

<b>Temperature (°C)</b>	<b>Sample1</b>	<b>Sample2</b>	<b>Sample3</b>	<b>Average</b>
<b>25</b>	490.6	571.5	662.6	574.9
<b>40</b>	686.6	825.8	886.9	799.8
<b>55</b>	250.9	248	255.1	251.3