

Supporting Information for

Spectral insights into gelation microdynamics of *N*-octyl-D-gluconamide in water

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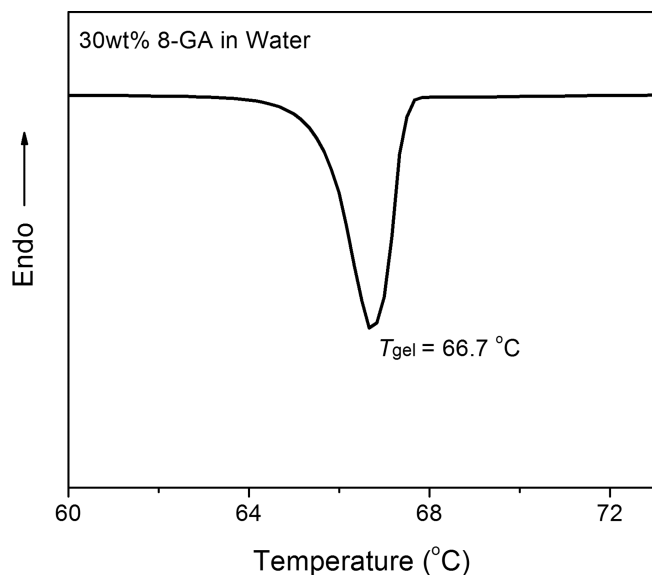


Fig. S1 DSC curve of the gel formation of 8-GA upon cooling.

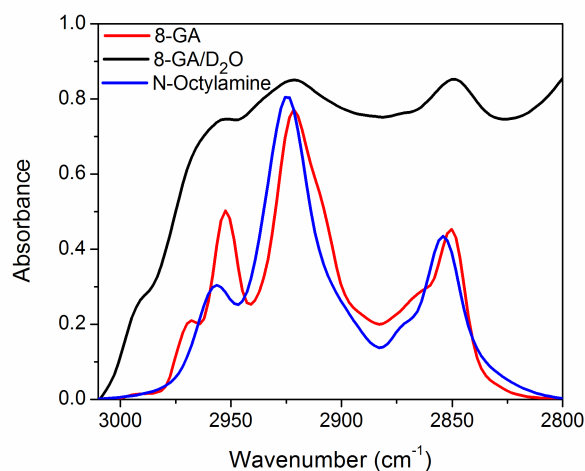
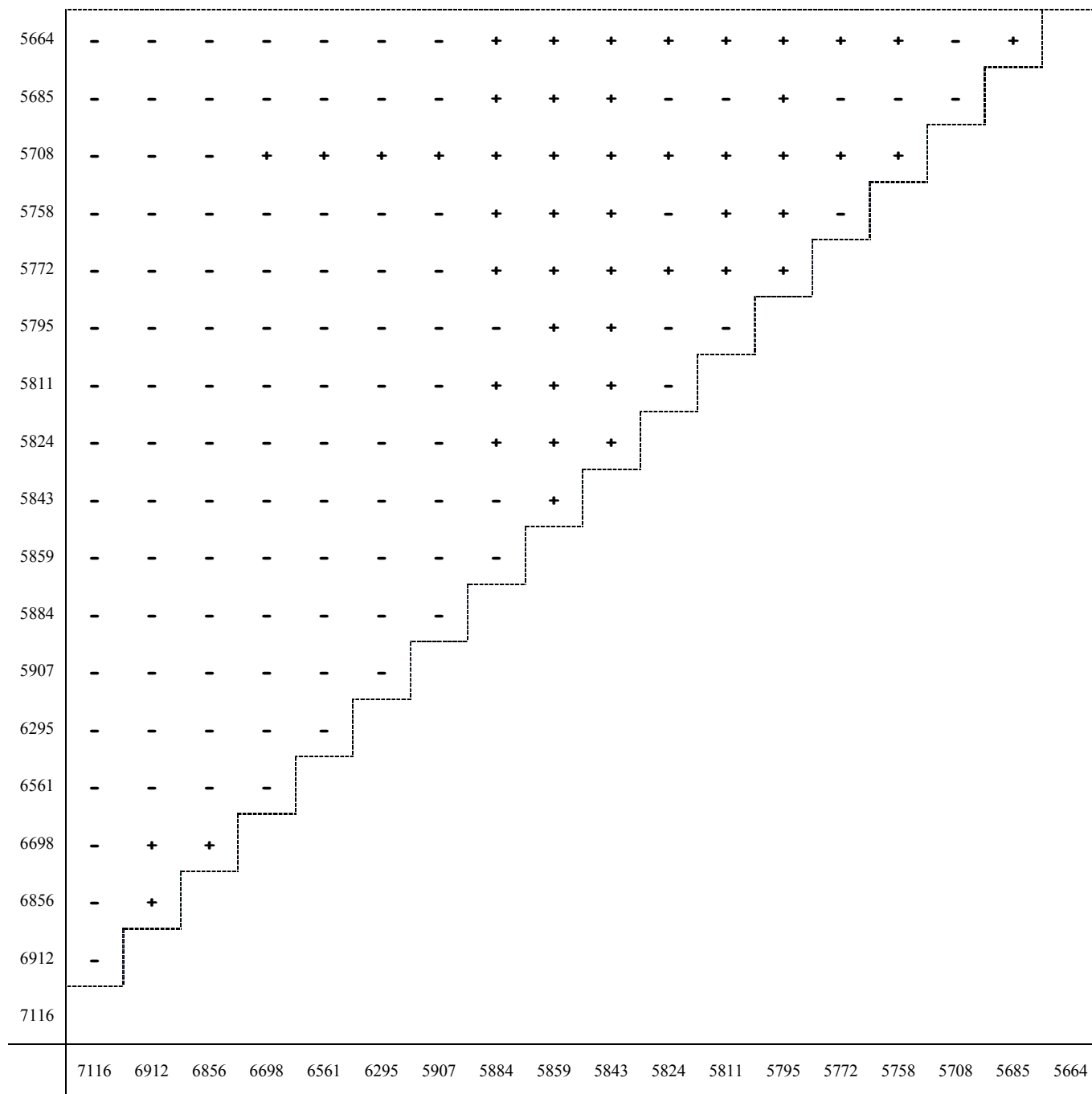


Fig. S2 Mid-IR spectra of 8-GA, 8-GA in D₂O and *N*-octylamine which can be consulted for spectra assignments of NIR spectra.

Operation Details of Sequence Order Determination from Two-Dimensional Correlation Results

Noda's rule can be summarized as follows: if the cross-peaks (ν_1 , ν_2 , and assume $\nu_1 > \nu_2$) in synchronous and asynchronous spectra have the same sign, the change at ν_1 may occur prior to that of ν_2 , and vice versa. Thus, we firstly listed all the signs of cross-peaks in asynchronous spectra, then turned back to list the corresponding signs in synchronous spectra. Multiplication was performed in succession on these two signs of each cross-peak. To each final sign of cross-peaks, two corresponding wavenumbers can be found on the left and bottom respectively. Because all the signs are above the diagonal line ($\nu_1 = \nu_2$) in accordance with our spectra-reading habits, the wavenumber on the bottom is affirmatively larger than the one on the left. Therefore, according to Noda's rule, if the sign is positive (+), the larger wavenumber or the bottom wavenumber will respond to external perturbation earlier than the smaller wavenumber or the left wavenumber. Similarly, if the sign is negative (-), the left wavenumber will respond earlier than the bottom one. If the sign is zero (or blank), we cannot make an exact judgment.

The following are final results of multiplication on the signs of each cross-peak in synchronous and asynchronous spectra.



Thus, the sequence order can be deduced as follows: $5859 \text{ cm}^{-1} \rightarrow 5843 \text{ cm}^{-1} \rightarrow 5795 \text{ cm}^{-1} \rightarrow 5884 \text{ cm}^{-1} \rightarrow 5685 \text{ cm}^{-1} \rightarrow 5811 \text{ cm}^{-1} \rightarrow 5758 \text{ cm}^{-1} \rightarrow 5824 \text{ cm}^{-1} \rightarrow 5772 \text{ cm}^{-1} \rightarrow 5664 \text{ cm}^{-1} \rightarrow 5907 \text{ cm}^{-1} \rightarrow 6295 \text{ cm}^{-1} \rightarrow 6561 \text{ cm}^{-1} \rightarrow 5708 \text{ cm}^{-1} \rightarrow 6912 \text{ cm}^{-1} \rightarrow 6856 \text{ cm}^{-1} \rightarrow 6698 \text{ cm}^{-1} \rightarrow 7116 \text{ cm}^{-1}$.