Electronic Supplementary Information (ESI) for

From globule to crystal: a spectral study of poly(2-isopropyl-2-oxazoline) crystallization in hot water

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**Fig. S1** Time-variable FTIR spectra of PIPOZ in D₂O (10 wt%) during annealing at 55 °C between 120 and 340 min. The dashed circles represent the positions of isosbestic points.
Operation Details of Sequence Order Determination from 2DCOS Results

Noda’s rule can be summarized as follows: if the cross-peaks ($v_1$, $v_2$, and assume $v_1 > v_2$) in synchronous and asynchronous spectra have the same sign, the change at $v_1$ may occur prior to that of $v_2$, 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 ($v_1 = v_2$) 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 we have the sequence order as follows:

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\begin{align*}
3010 \text{ cm}^{-1} & \rightarrow 2991 \text{ cm}^{-1} \rightarrow 2912 \text{ cm}^{-1} \rightarrow 1655 \text{ cm}^{-1} \rightarrow 2872 \text{ cm}^{-1} \rightarrow 1644 \text{ cm}^{-1} \rightarrow 1610 \text{ cm}^{-1} \\
2881 \text{ cm}^{-1} & \rightarrow 2974 \text{ cm}^{-1} \rightarrow 2937 \text{ cm}^{-1} \rightarrow 1630 \text{ cm}^{-1}
\end{align*}
\]