

*Supporting Information for*

# Understanding the Thermosensitivity of POEGA- Based Star Polymers: LCST-type Transition in Water *vs.* UCST-type Transition in Ethanol

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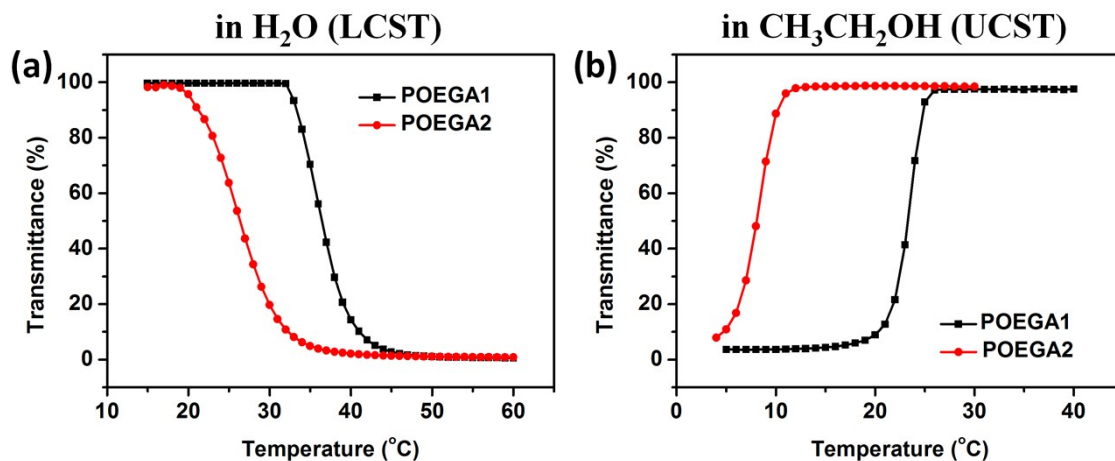


Figure S1. Turbidity curves of linear POEGA1 ( $M_n = 34$  kg/mol,  $M_w/M_n = 1.23$ , determined in DMF) and POEGA2 ( $M_n = 7.6$  kg/mol,  $M_w/M_n = 1.18$ , determined in DMF) in water during heating (a) and in ethanol during cooling (b) at the concentration of 0.1 wt %.

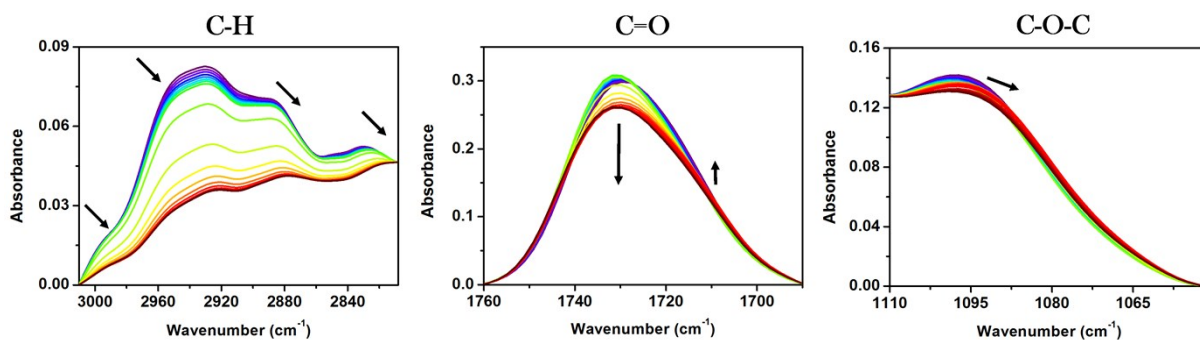


Figure S2. Temperature-dependent FTIR spectra of linear POEGA1 in  $D_2O$  (10 wt %) during heating from 25 to 46 °C with an interval of 1 °C.

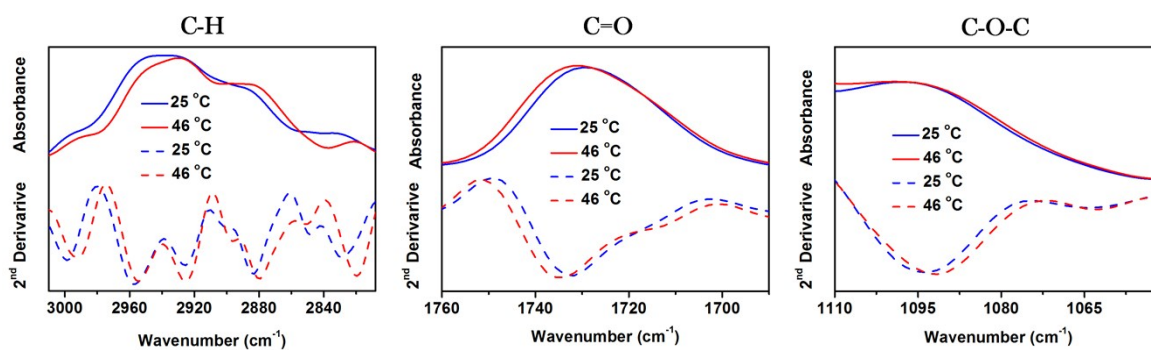


Figure S3. 1D IR (solid line) and second-derivative (dashed line) spectral comparison of linear POEGA1 in  $D_2O$  (10 wt %) at 25 (blue line) and 46 (red line) °C.