

**Supporting Information for**  
**Carbon Dioxide Affects the Phase Transition of Poly(*N*-**  
**isopropylacrylamide)**

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**Table S1** LCST ( $^{\circ}\text{C}$ ) and  $\Delta H$  (kJ/mol) of phase transition of PNIPAAm aqueous solution of various concentrations (1.5, 5, and 10 wt%) upon HP DSC first heating at a rate of  $2^{\circ}\text{C}/\text{min}$  in  $\text{CO}_2$  or  $\text{N}_2$  of various pressures.

Pressure (MPa)	LCST/ $\Delta H$			
	1.5 wt%	5 wt%	10 wt%	
$\text{CO}_2$	0	30.54/5.12	30.45/4.09	30.38/3.29
	0.69	30.02/5.50	30.20/4.27	29.60/3.79
	1.38	29.46/5.88	29.47/4.54	29.52/4.23
	2.07	28.35/6.55	28.35/4.68	28.96/4.66
	2.76	27.78/7.00	27.15/5.20	28.41/4.87
	3.45	27.07/7.16	26.53/6.40	26.89/5.21
	4.14	26.03/8.14	25.51/7.41	25.46/6.25
$\text{N}_2$	0	30.54/5.12	30.45/4.09	30.38/3.29
	1.38	30.82/5.48	30.72/4.52	30.70/3.57
	2.76	31.09/6.03	30.82/5.24	30.85/4.22

**Table S2** LCST ( $^{\circ}\text{C}$ ) and  $\Delta H$  (kJ/mol) of phase transition of PNIPAAm aqueous solution of 5 wt% containing 1 wt% of a salt (KBr, KCl, and NaCl) upon HP DSC first heating at a rate of  $2\text{ }^{\circ}\text{C}/\text{min}$  in  $\text{CO}_2$  of various pressures

CO <sub>2</sub> pressure (MPa)	LCST/ $\Delta H$			
	Control	KBr	KCl	NaCl
0	30.45/4.09	30.29/3.89	28.85/3.59	28.13/3.58
1.38	29.47/4.54	28.84/4.47	27.99/4.05	27.86/4.01
2.76	27.15/5.20	27.07/4.59	26.44/4.25	26.30/4.22
4.14	25.51/7.41	24.84/4.81	23.72/4.36	23.63/4.36

**Table S3** LCST ( $^{\circ}\text{C}$ ) and  $\Delta H$  (kJ/mol) of phase transition of PNIPAAm aqueous solution of 5 wt% upon HP DSC first heating at a rate of  $2\text{ }^{\circ}\text{C}/\text{min}$  in  $\text{CO}_2$  of various pressures. PNIPAAm had weight average molecular weights of  $0.39 \times 10^6$  g/mol (low  $M_w$ ) and  $1.13 \times 10^6$  g/mol (high  $M_w$ ).

CO <sub>2</sub> pressure (MPa)	LCST/ $\Delta H$	
	Low $M_w$	High $M_w$
0	30.45/4.09	30.08/3.44
0.69	30.36/4.16	30.04/3.62
1.38	29.47/4.54	29.15/3.91
2.07	29.42/5.09	28.26/4.90
2.76	27.15/5.20	27.10/5.11
3.45	26.94/5.65	26.36/5.45
4.14	25.51/7.41	24.95/5.88