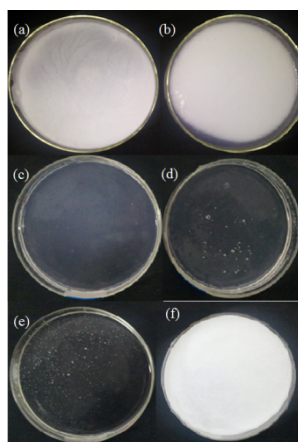


**Fig. S1** DSC curves for pure PVA powder (a) and PVA hydrogels prepared with (b) 0wt%, (c) 40wt%, (d) 68.5wt%, (e) 80wt% and (f) 100wt% DMSO aqueous solution.

**Table S1** The relative degree of crystallinity of PVA hydrogels prepared with different DMSO aqueous solutions.

DMSO content (wt%)	$\Delta H$ (J/g)	$X_c = \Delta H / \Delta H^* (\%)$
0	24.13	43.72
20	39.97	72.42
40	39.87	72.24
68.5	26.49	48.00
80	29.83	54.05
100	42.84	77.62



**Fig. S2** PVA hydrogels prepared with different concentration of DMSO aqueous solutions

after being frozen: (a) 0wt%, (b) 20wt%, (c) 40wt%, (d) 68.5wt%, (e) 80wt% and (f) 100wt%  
DMSO aqueous solution.