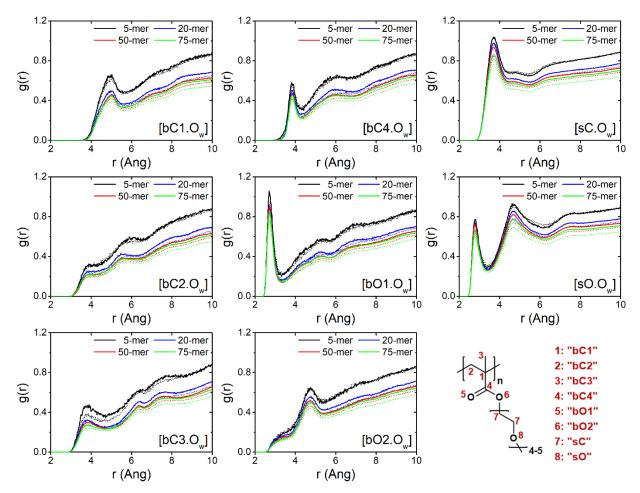
## **Supporting Information**

## The role of hydrophobic hydration on the LCST behaviour of POEGMA<sub>300</sub> by all-atom molecular dynamics simulation

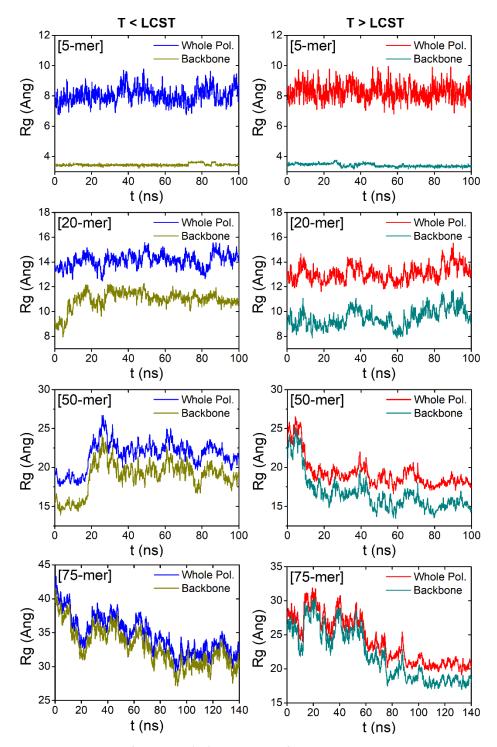
Eray Dalgakiran, Hasan Tatlipinar \*

Department of Physics, Faculty of Arts and Sciences, Yildiz Technical University, 34220, Istanbul, Turkey

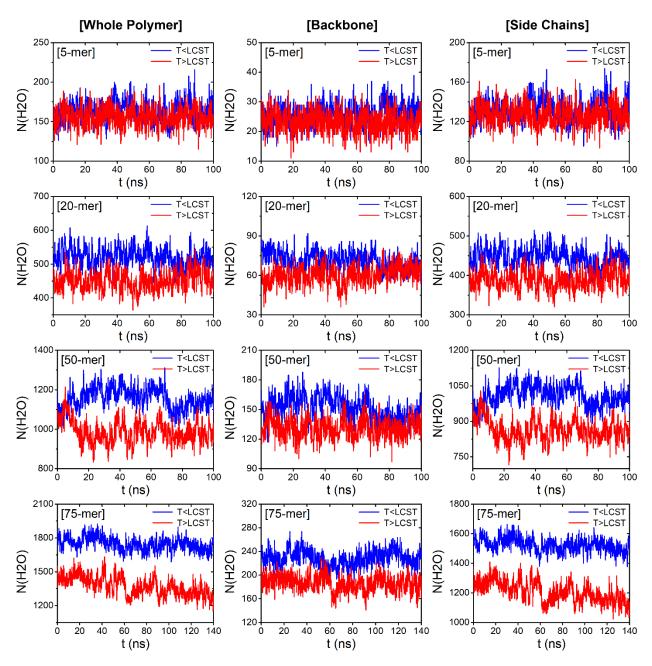
Correspondence to: H. Tatlipinar (E-mail: htatli@yildiz.edu.tr)



**Fig. S1** Radial distribution functions between selected POEGMA<sub>300</sub> atoms and water oxygen atoms (O<sub>w</sub>) at T < LCST (307 K, solid lines) and T > LCST (350 K, short dot lines).



**Fig. S2** Time-dependent radius of gyration ( $R_g$ ) variations of 5-, 20-, 50- and 75-mer POEGMA<sub>300</sub> polymers for the whole polymer and backbone at T<LCST 307 K) and T>LCST (350 K).



**Fig. S3** Time-dependent number of first shell water molecules variations of 5-, 20-, 50- and 75-mer POEGMA<sub>300</sub> polymers at T<LCST (307 K) and T>LCST (350 K) for whole polymer, backbone and oligo(ethylene glycol) side chains.