

Supporting information for:

**Molecular dynamics insight into viscosity reduction of hydrolysed  
polyacrylamide by using carbon quantum dots**

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Table S1 force field parameters for the HPAM and the CQD

<b>group/atom</b>	<b>atom type</b>	<b>atom charge</b>
edge C	Cheng and Steele	-0.21
edge H	OPLS 146	0.179
pure CD	Cheng and Steele	-0.18
hydroxyl-O	OPLS 167	-0.605
hydroxyl-H	OPLS 168	0.4
C(COO <sup>-</sup> )	OPLS 271	0.7
O(COO <sup>-</sup> )	OPLS 272	-0.8
Na <sup>+</sup>	OPLS_407	1
Cl <sup>-</sup>	OPLS_401	-1
C(CONH <sub>2</sub> )	OPLS 235	0.5
O(CONH <sub>2</sub> )	OPLS 236	-0.5
N(CONH <sub>2</sub> )	OPLS 237	-0.76
H(CONH <sub>2</sub> )	OPLS 240	0.38
alkane C	OPLS 135/OPLS 136/ OPLS 137	-0.12
alkane H	OPLS 140	0.06

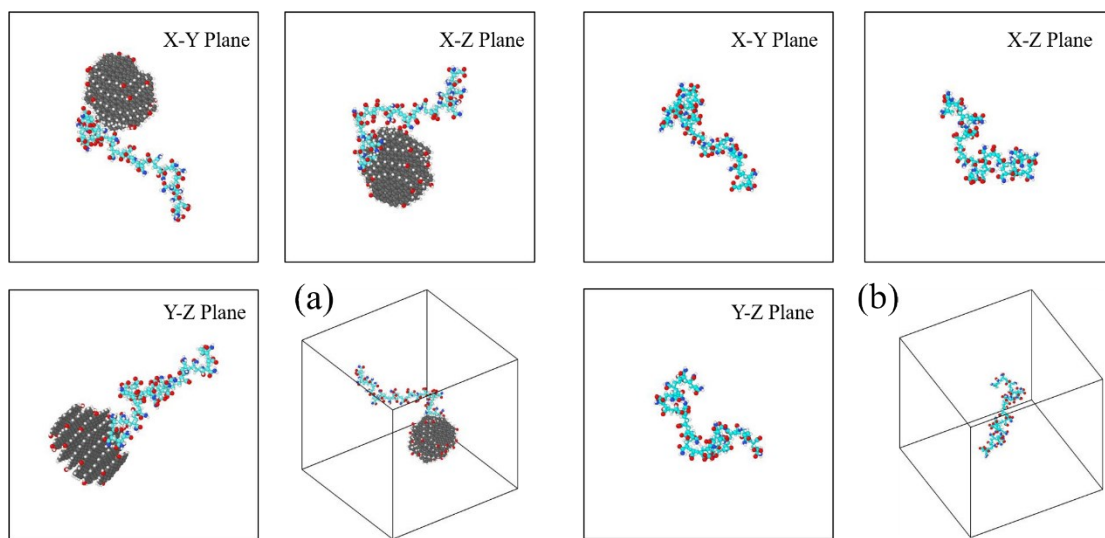


Figure S1 the three-views snapshots of HPAM40\_dot and HPAM40\_solo around  $t = 40$  ns

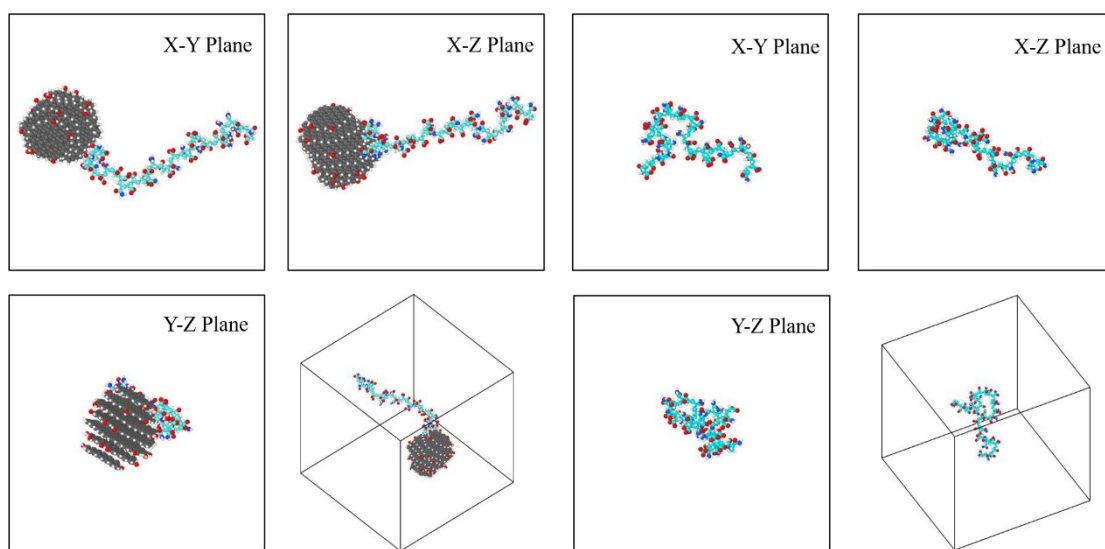


Figure S2 the three-views snapshots of HPAM40\_dot and HPAM40\_solo around  $t = 80$  ns

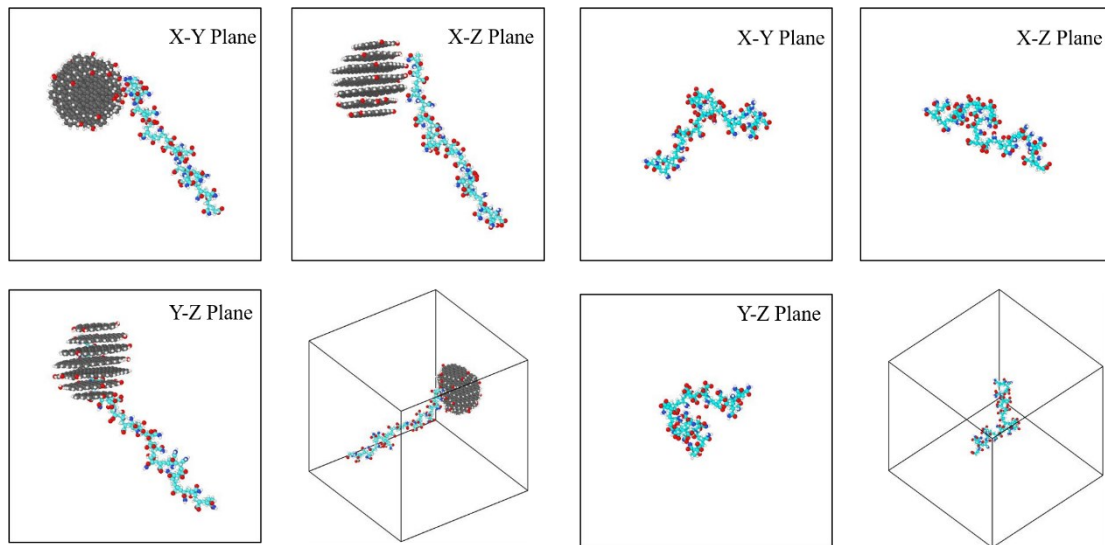


Figure S3 the three-views snapshots of HPAM40\_dot and HPAM40\_solo around  $t = 120$  ns

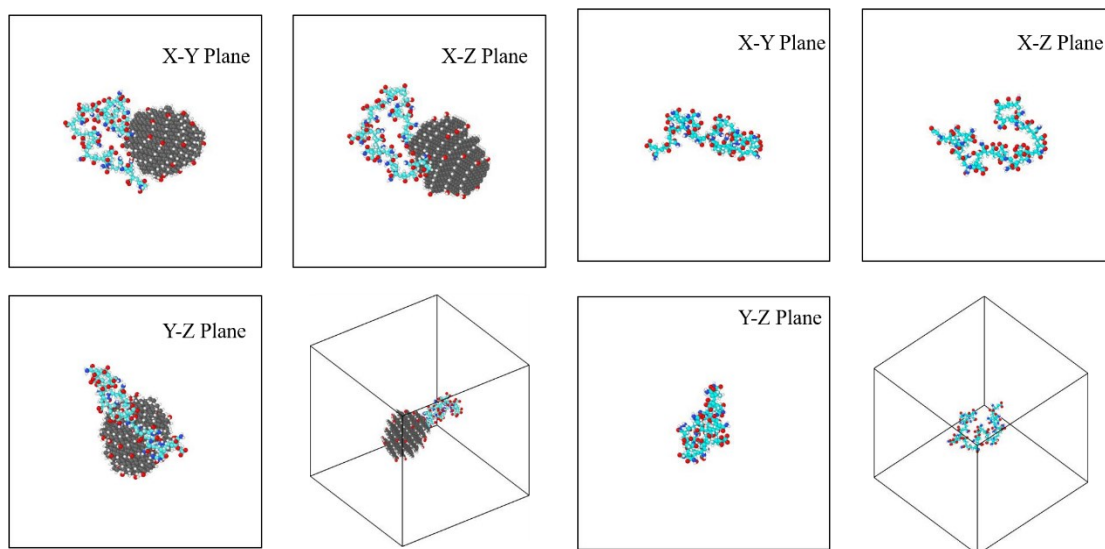


Figure S4 the three-views snapshots of HPAM40\_dot and HPAM40\_solo around  $t = 160$  ns

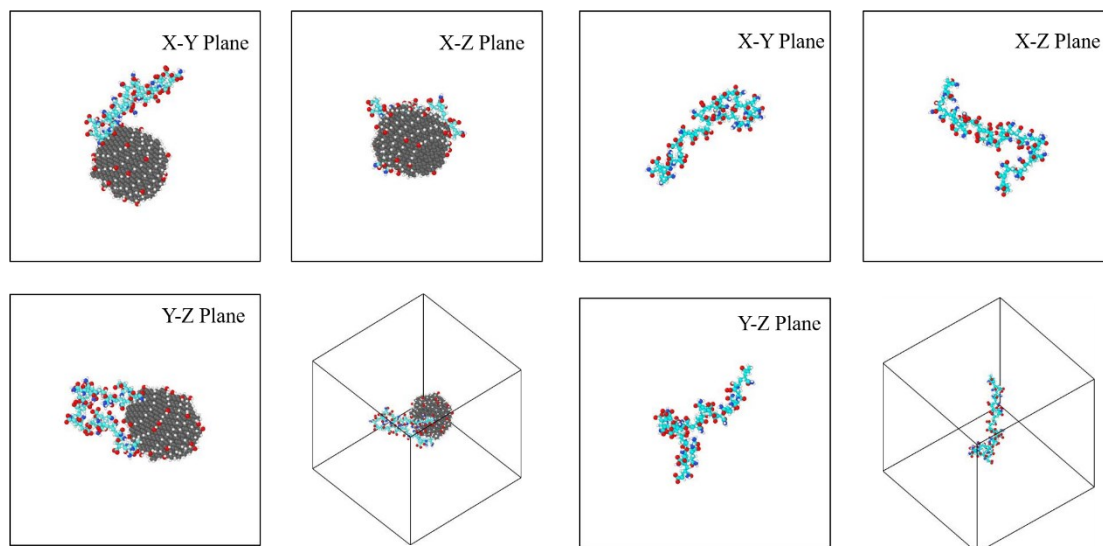


Figure S5 the three-views snapshots of HPAM40\_dot and HPAM40\_solo around  $t = 200$  ns