

Supplementary Information

Unidirectional Transport of Water Nanodroplet Entrapped inside Nonparallel Smooth Surface: A Molecular Dynamics Simulation Study

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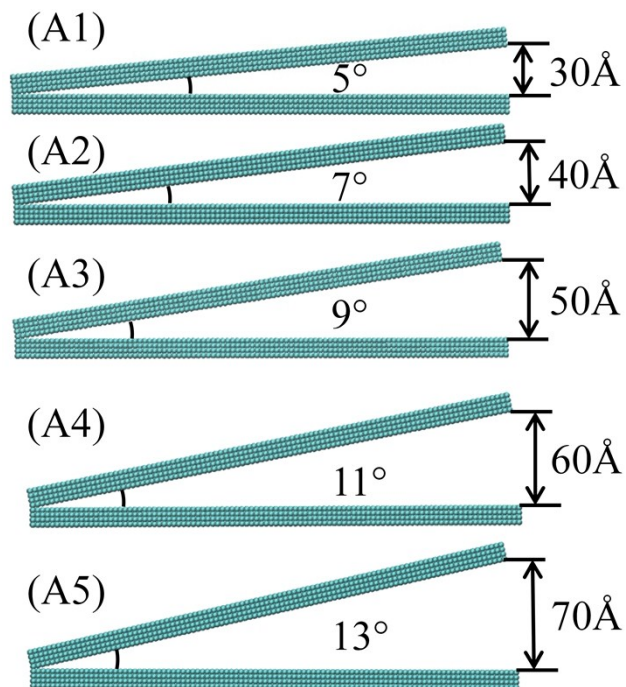


Figure S1: Different types of NPS with different surface angle (θ) and separation distance (S).

Table S1: Table containing information about the surface angle (θ) and separation distance (S) of different types of NPS.

Type of NPS	Surface Angle " θ " ($^{\circ}$)	Separation Distance " S " (\AA)
A1	5	30
A2	7	40
A3	9	50
A4	11	60
A5	13	70

Table S2: Table containing information about the effect of surface energy on water bridge formation between two NPSs containing 3000, 4000, 5000 and 6000 molecules.

Surface Energy (meV)	Type of NPS				
	Bridge Formation (for 3000 water molecule droplet)				
	A1	A2	A3	A4	A5
7.5	Yes	Yes	Yes	Yes	No
17.5	Yes	Yes	Yes	No	No
27.5	Yes	Yes	No	No	No
37.5	Yes	Yes	No	No	No
Surface Energy (meV)	Type of NPS				
	Bridge Formation (for 4000 water molecule droplet)				
	A1	A2	A3	A4	A5
7.5	Yes	Yes	Yes	Yes	Yes
17.5	Yes	Yes	Yes	Yes	No
27.5	Yes	Yes	No	No	No
37.5	Yes	Yes	No	No	No
Surface Energy (meV)	Type of NPS				
	Bridge Formation (for 5000 water molecule droplet)				
	A1	A2	A3	A4	A5
7.5	Yes	Yes	Yes	Yes	Yes
17.5	Yes	Yes	Yes	Yes	No
27.5	Yes	Yes	Yes	No	No
37.5	Yes	Yes	No	No	No
Surface Energy (meV)	Type of NPS				
	Bridge Formation (for 6000 water molecule droplet)				
	A1	A2	A3	A4	A5
7.5	Yes	Yes	Yes	Yes	Yes
17.5	Yes	Yes	Yes	Yes	No
27.5	Yes	Yes	Yes	No	No
37.5	Yes	Yes	No	No	No

Table S3: Table containing information about the effect of surface energy on water contact angle on flat surface and its respective interaction with the solid surface.

Surface Energy (meV)	Water Contact Angle (°)	Interaction Energy (meV/molecule)
7.5	110.4	-3.132
17.5	83.5	-8.704
27.5	64.3	-15.477
37.5	40.2	-25.708