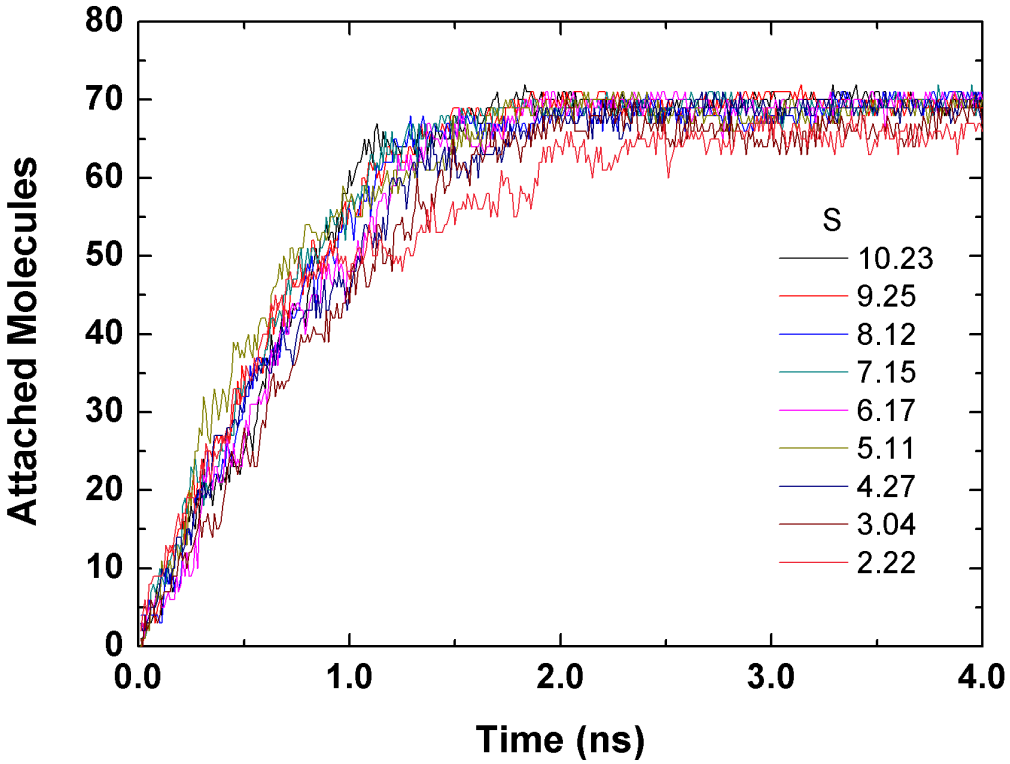
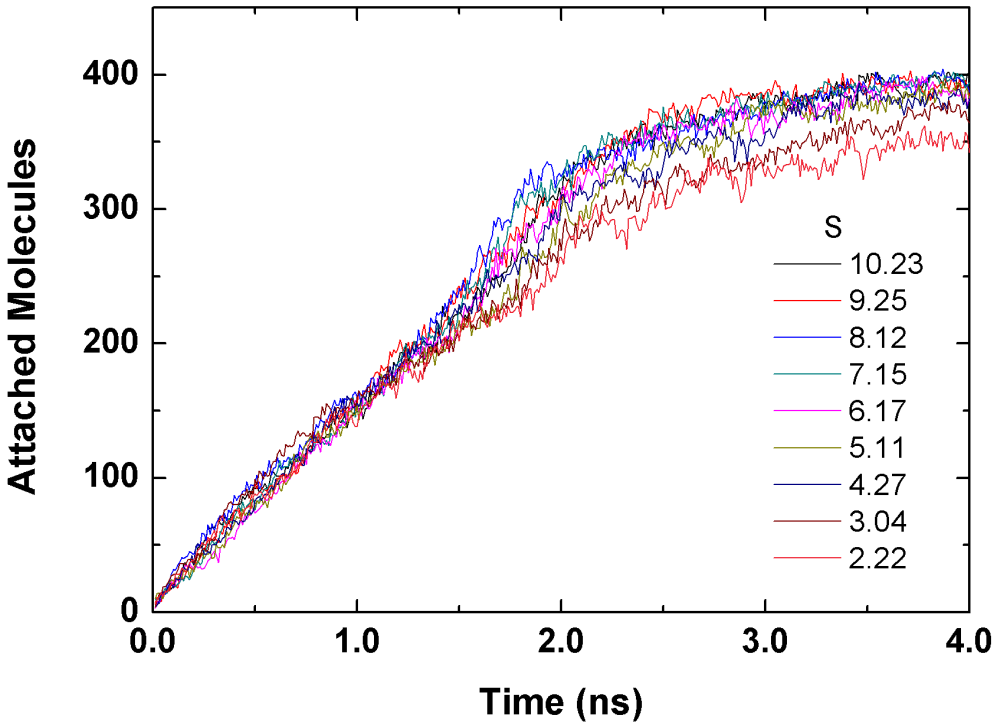
Electronic Supplementary Material (ESI) for RSC Advances.

ASSOCIATED CONTENT Supporting Information for: Molecular Dynamics Simulation of Heterogeneous Nucleation on Nanotubes

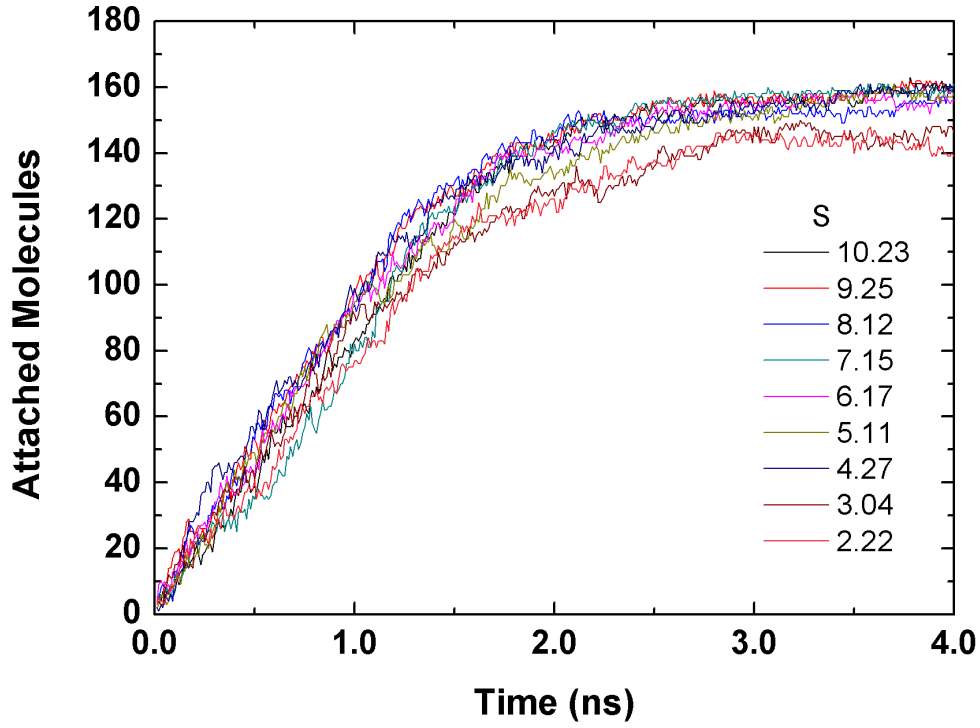
Donguk Suh[1]*, Kenji Yasuoka[1], and Xiao Cheng Zeng[2]



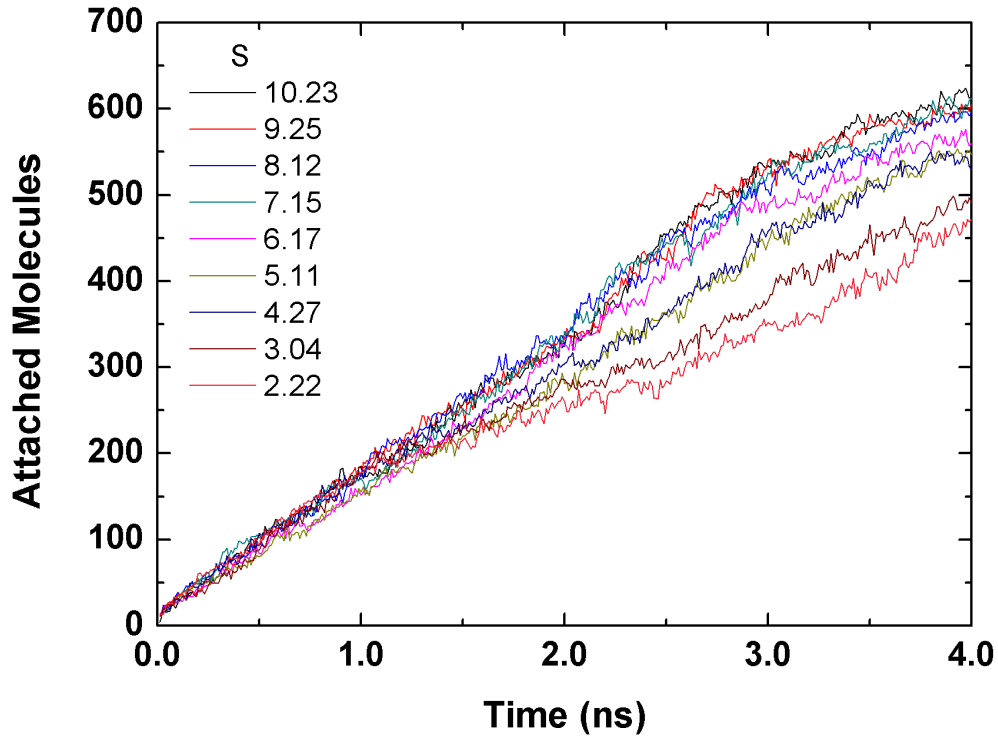
(a) In **L1D1**



(b) In **L1D2**

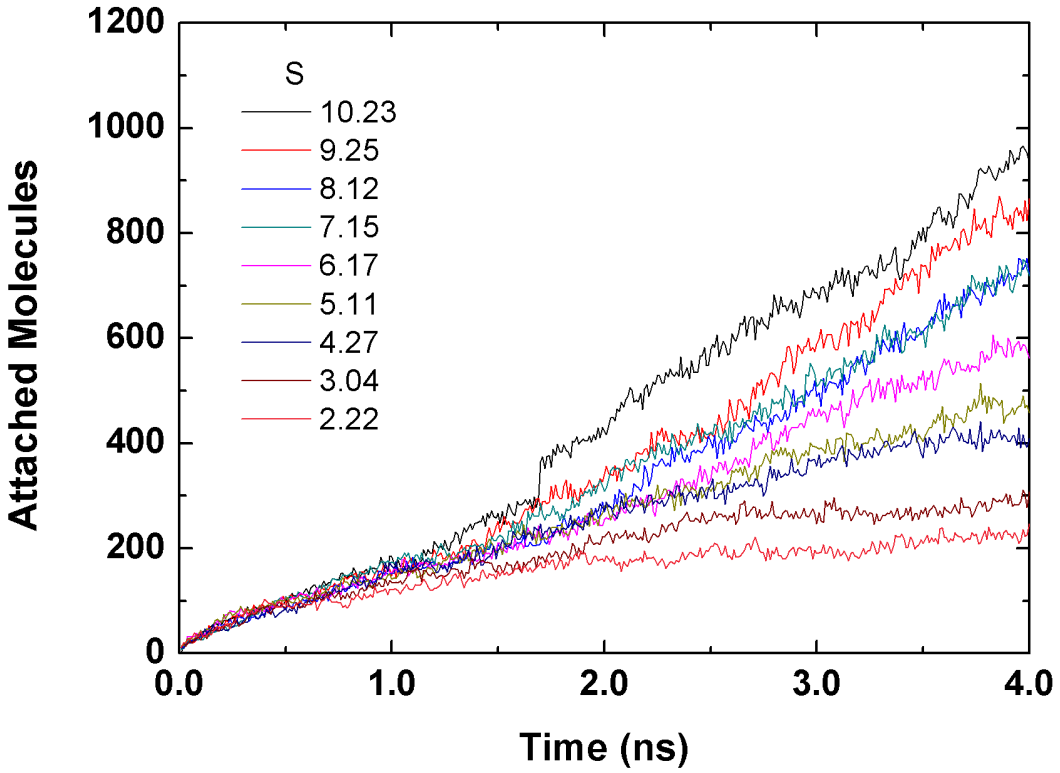


(c) In **L2D1**

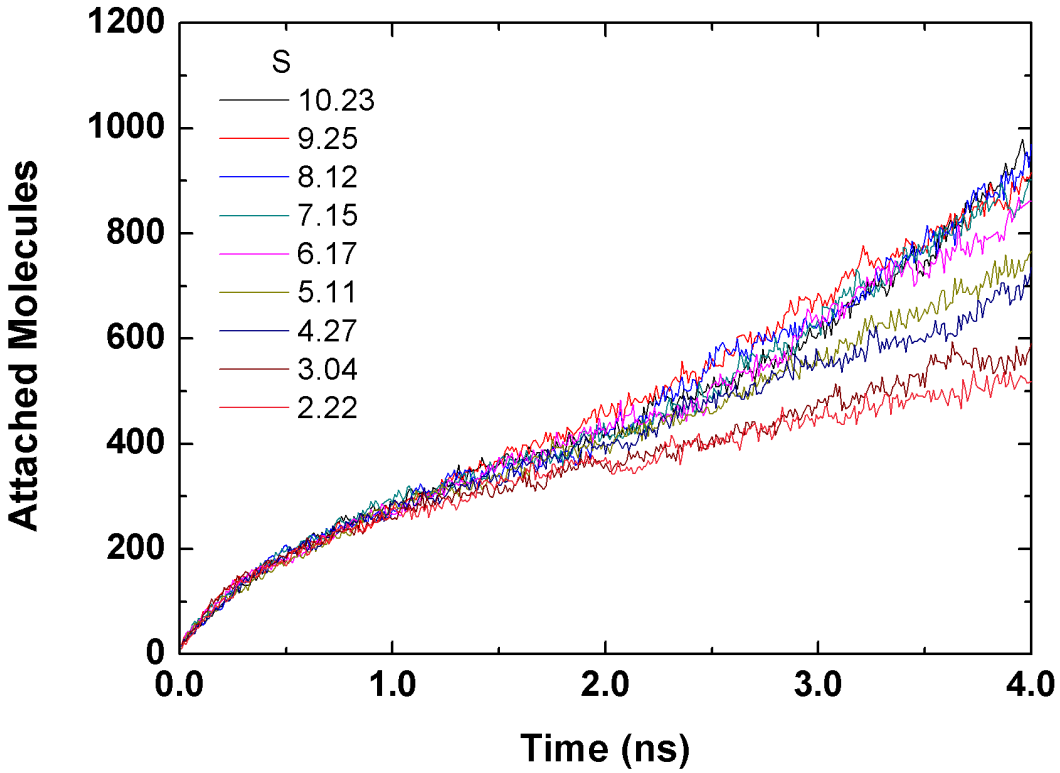


(d) In L2D2

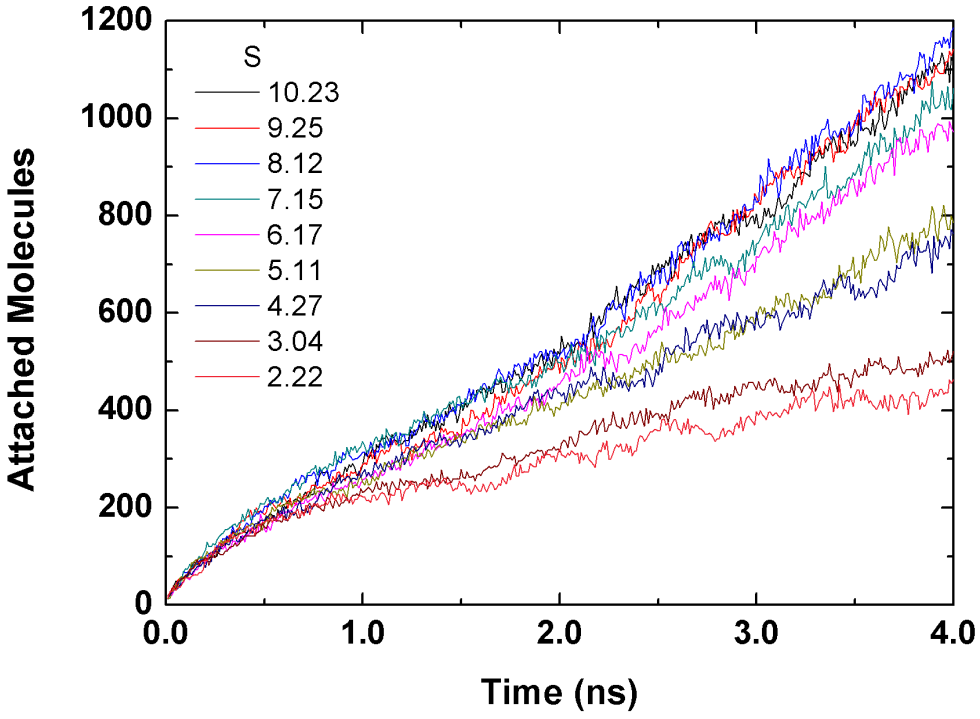
Fig. S1 Time evolution of inside growth (a) L1D1 (b) L1D2 (c) L2D1 and (d) L2D2.



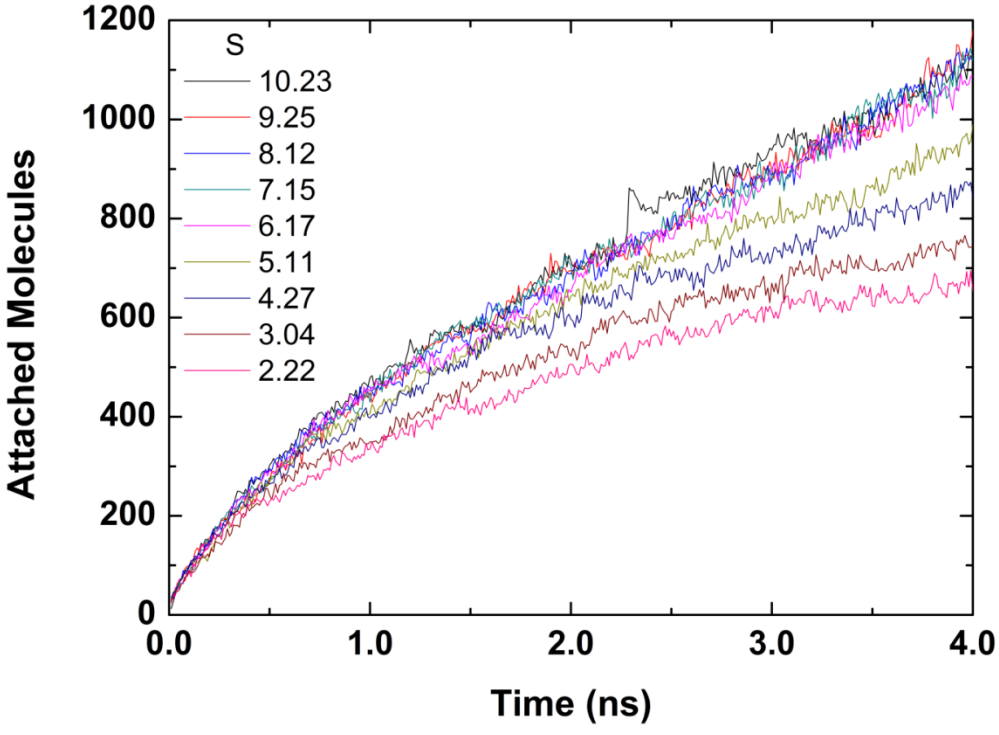
(a) Out **L1D1**



(b) Out **L1D2**

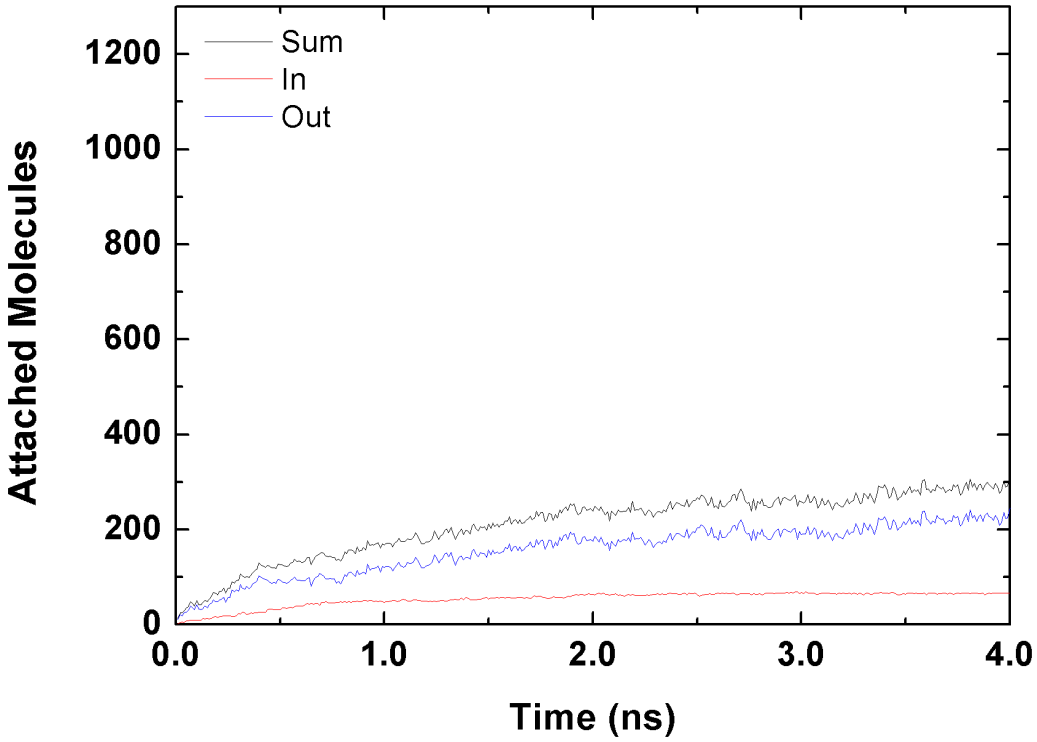


(c) Out **L2D1**

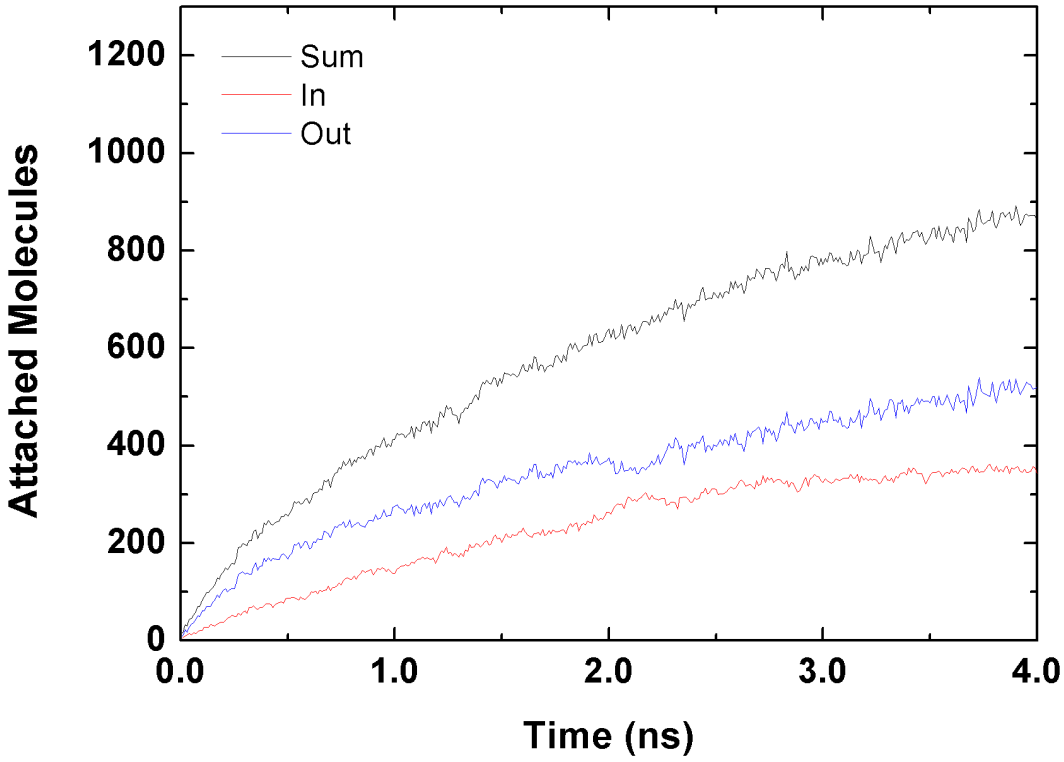


(d) Out L2D2

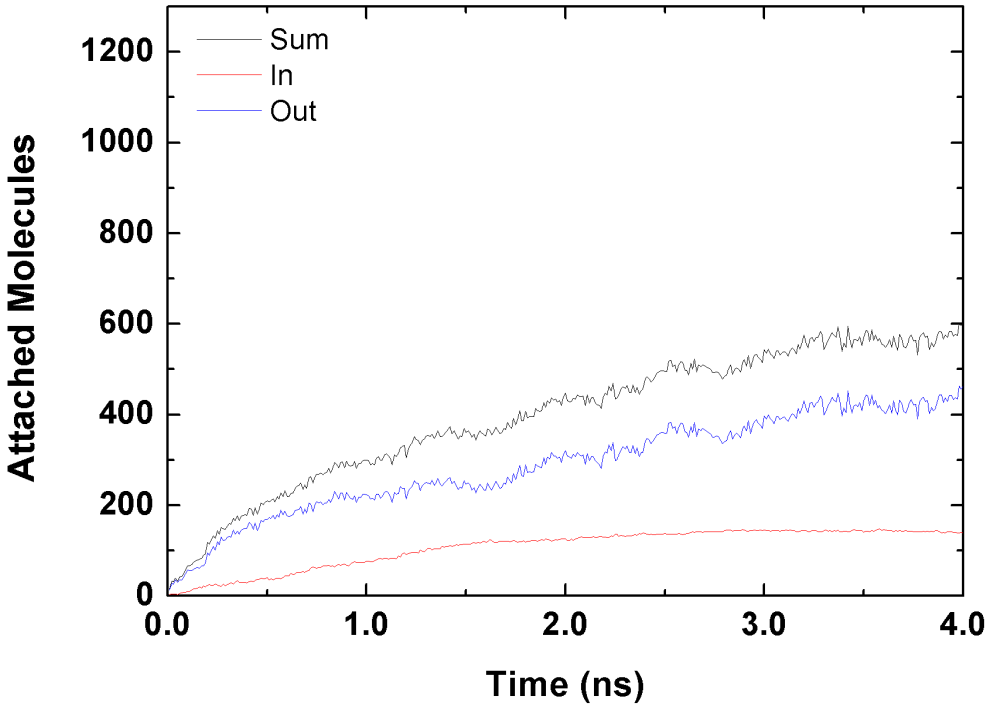
Fig. S2 Time evolution of outside growth (a) L1D1 (b) L1D2 (c) L2D1 and (d) L2D2.



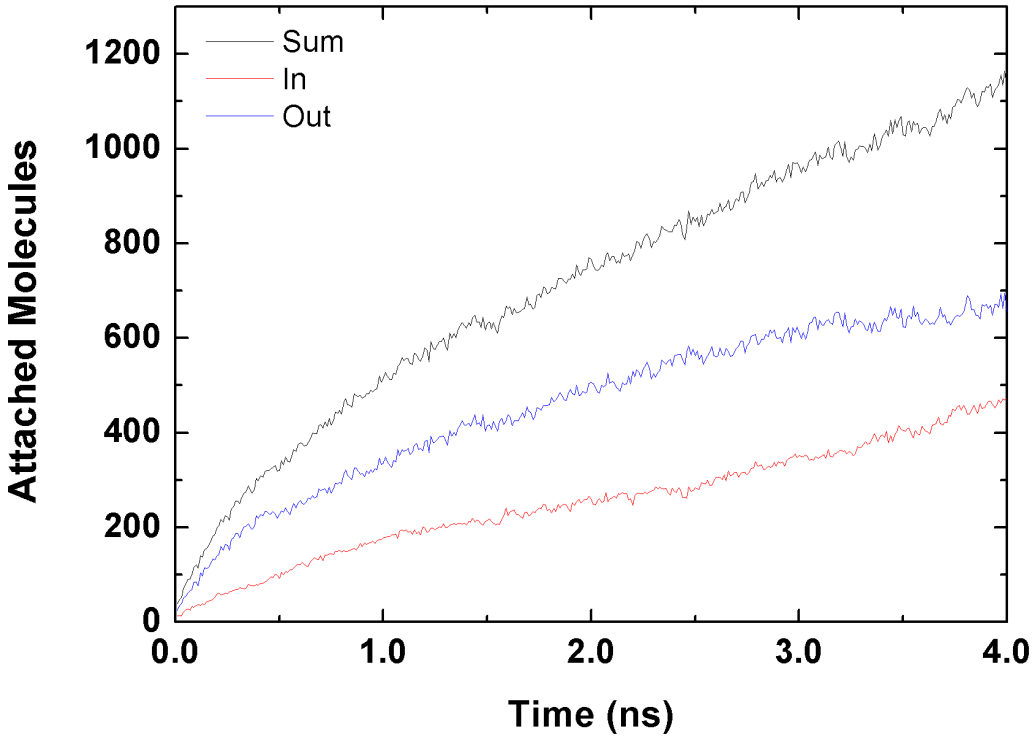
(a) S=2 **L1D1**



(b) S=2 **L1D2**

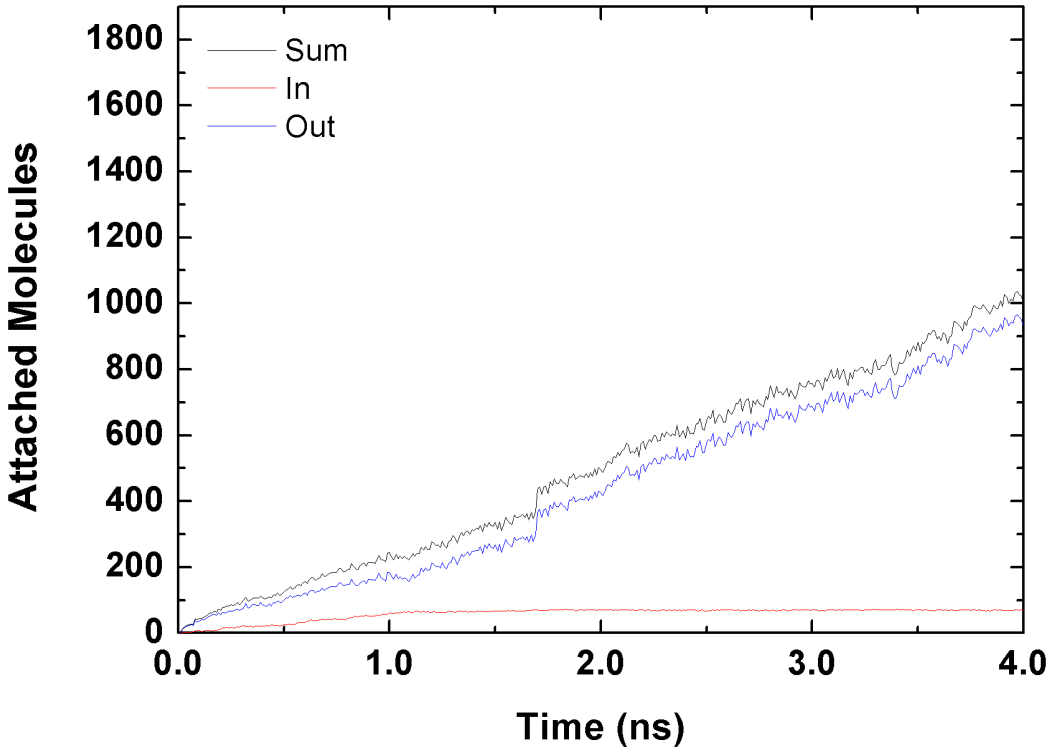


(c) S=2 **L2D1**

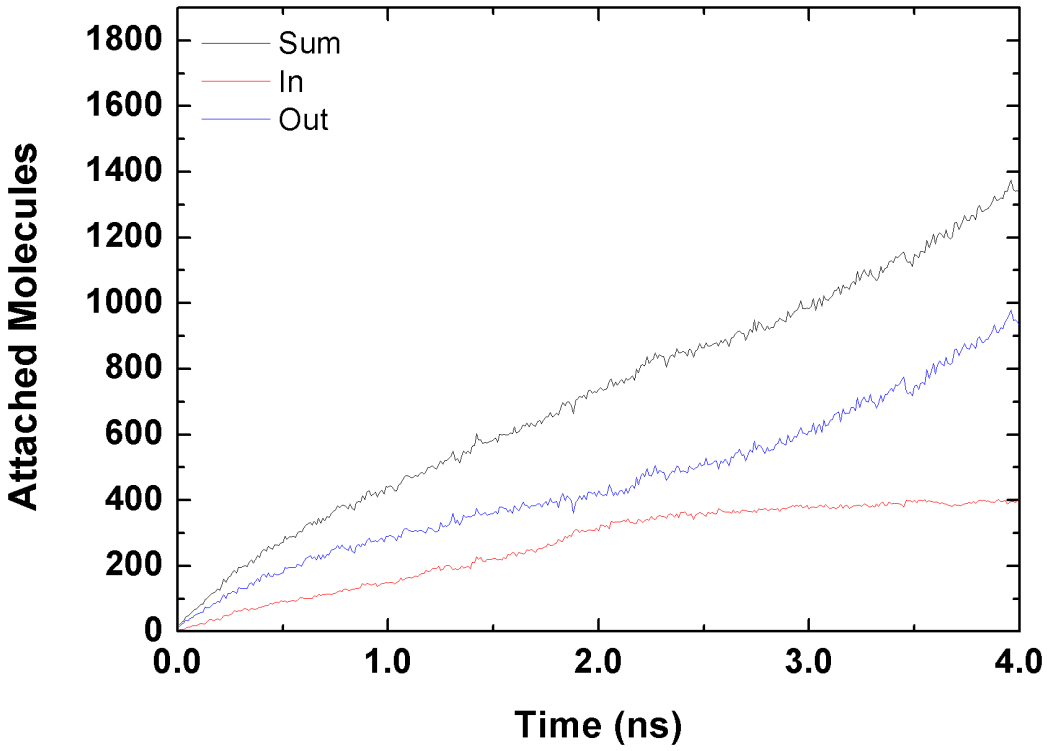


(d) S=2 L2D2

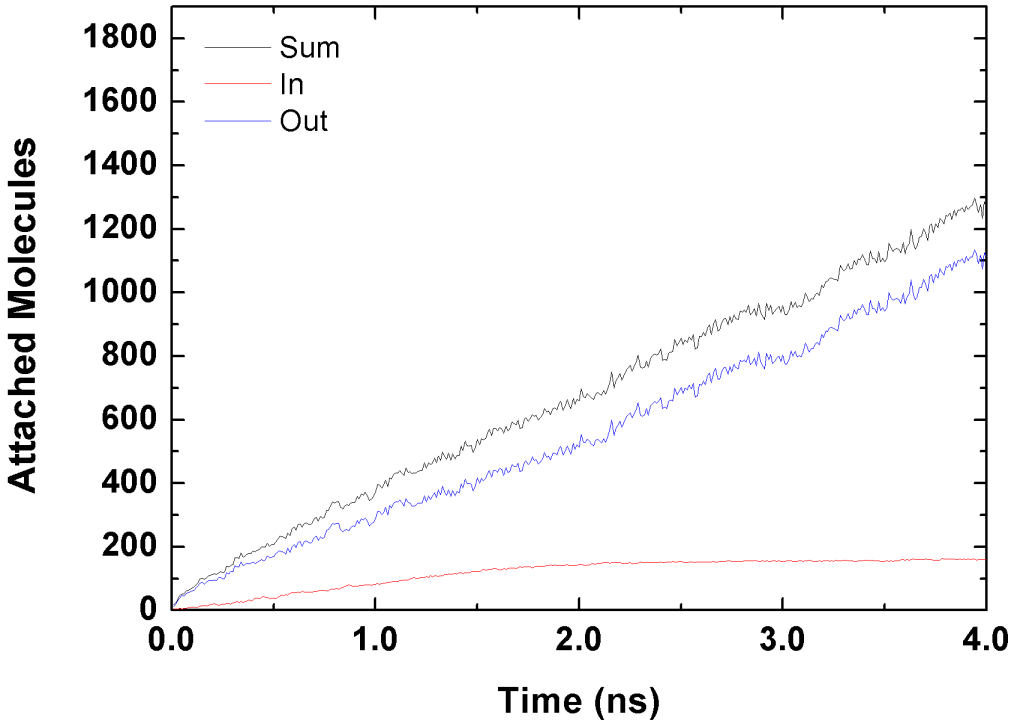
Fig. S3 Time evolution of inside and outside growth for S=2 (a) L1D1 (b) L1D2 (c) L2D1 and (d) L2D2.



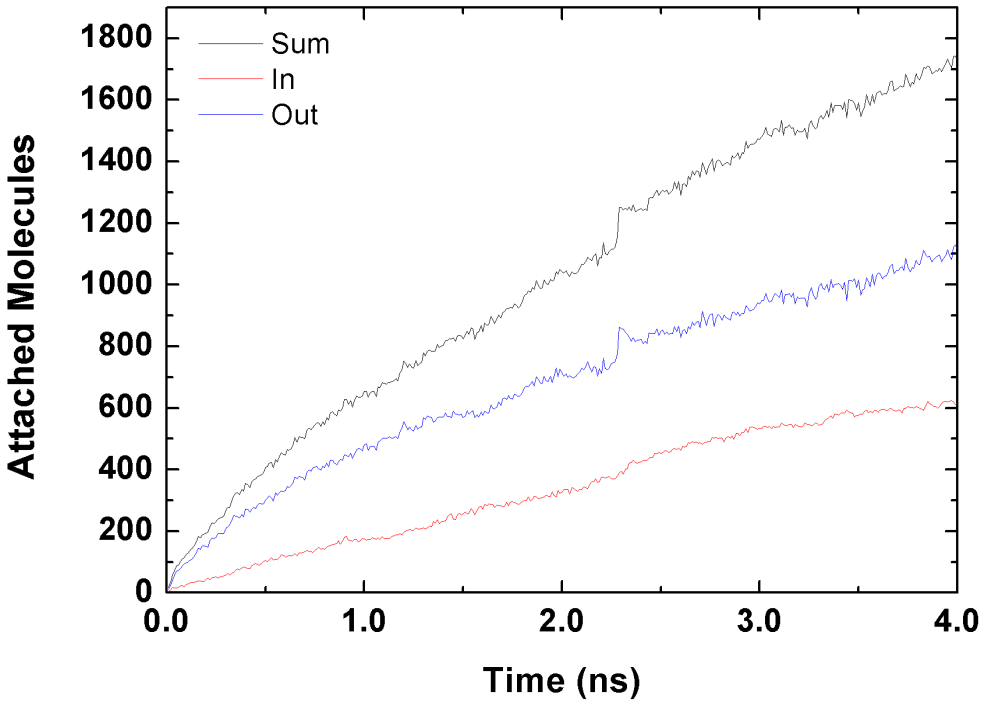
(a) S=10 **L1D1**



(b) S=10 **L1D2**

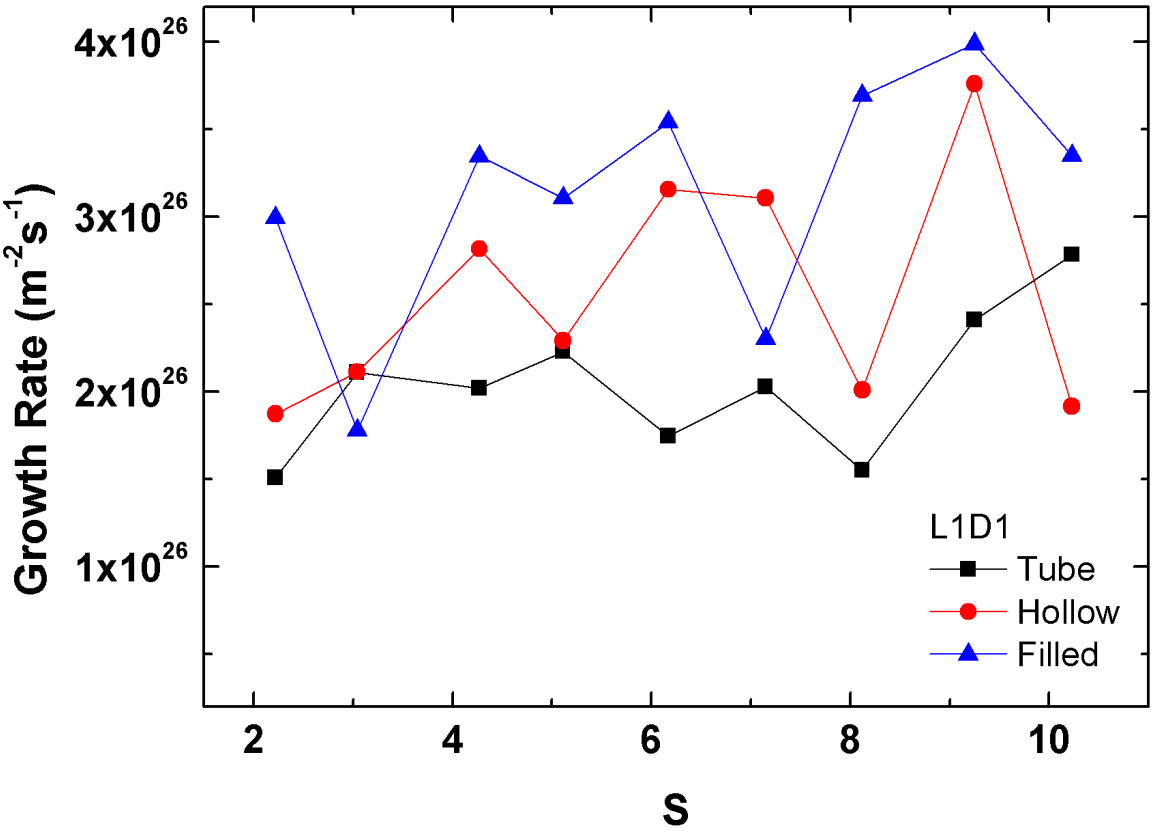


(c) S=10 **L2D1**

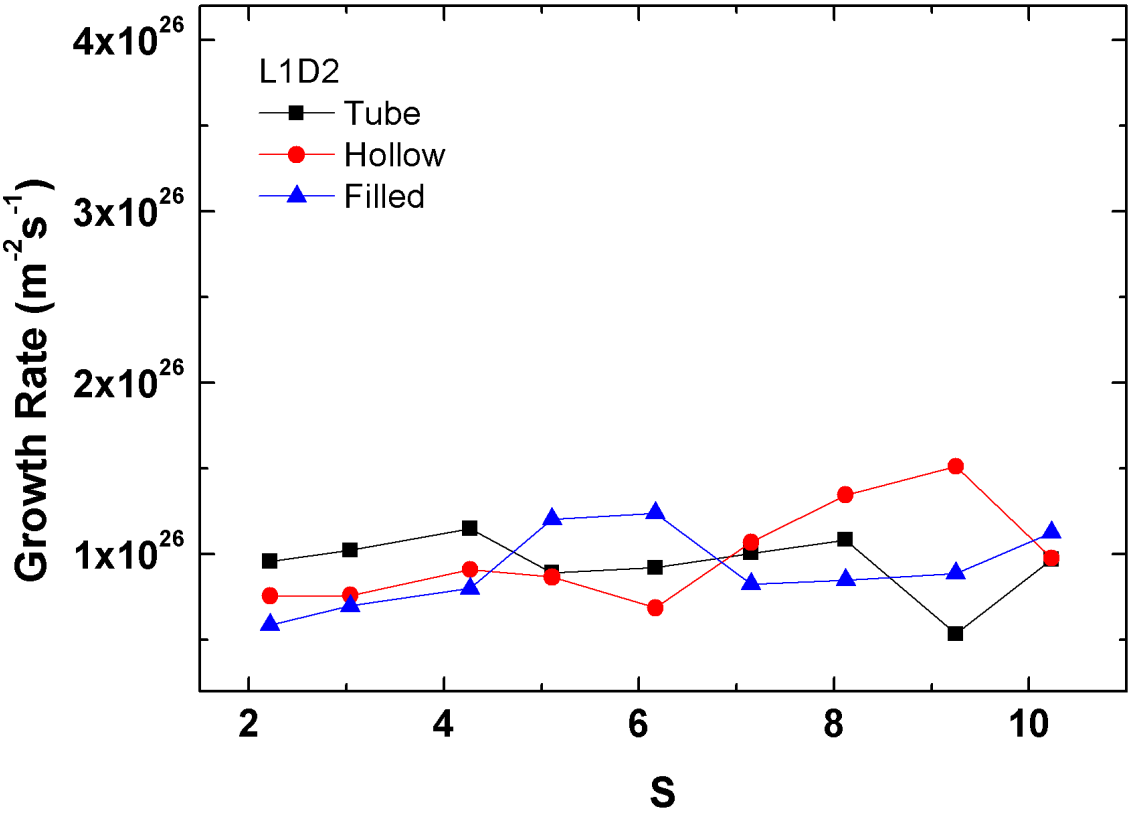


(d) S=10 L2D2

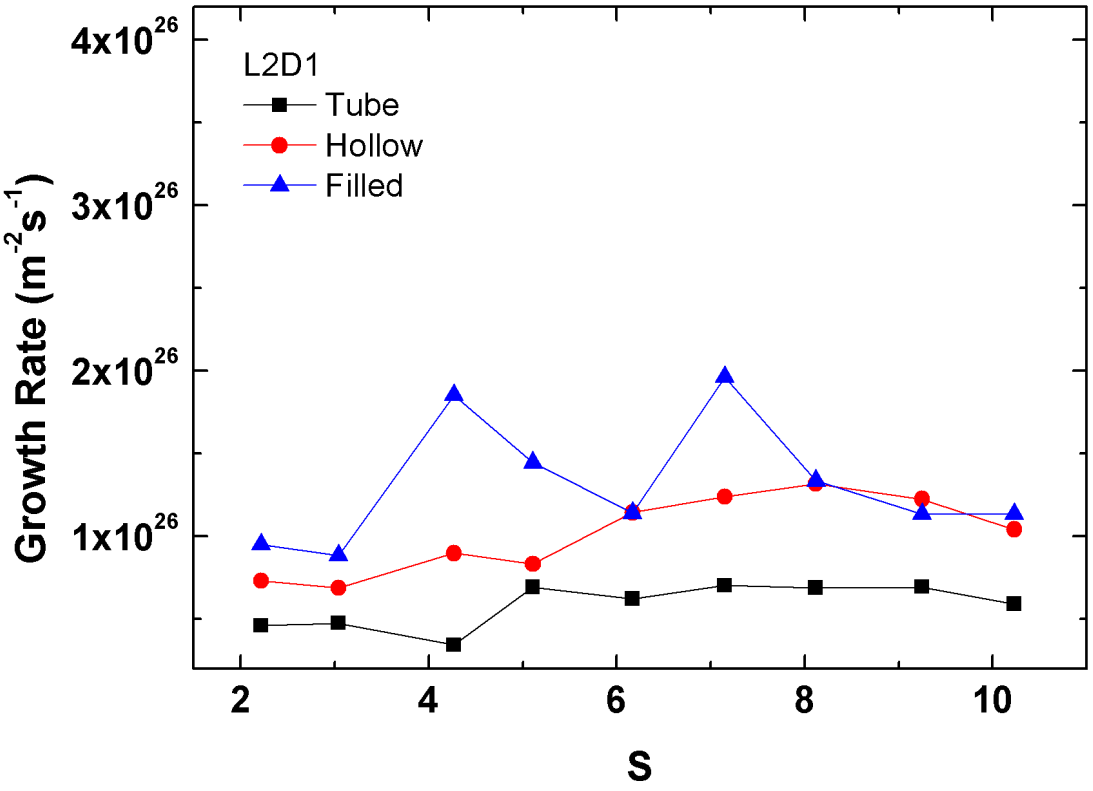
Fig. S4 Time evolution of inside and outside growth for S=10 (a) L1D1 (b) L1D2 (c) L2D1 and (d) L2D2.


Growth Rate ($m^{-2}s^{-1}$)
4x10^26
3x10^26
2x10^26
1x10^26
2
4
6
8
10
S
L1D1
Tube
Hollow
Filled

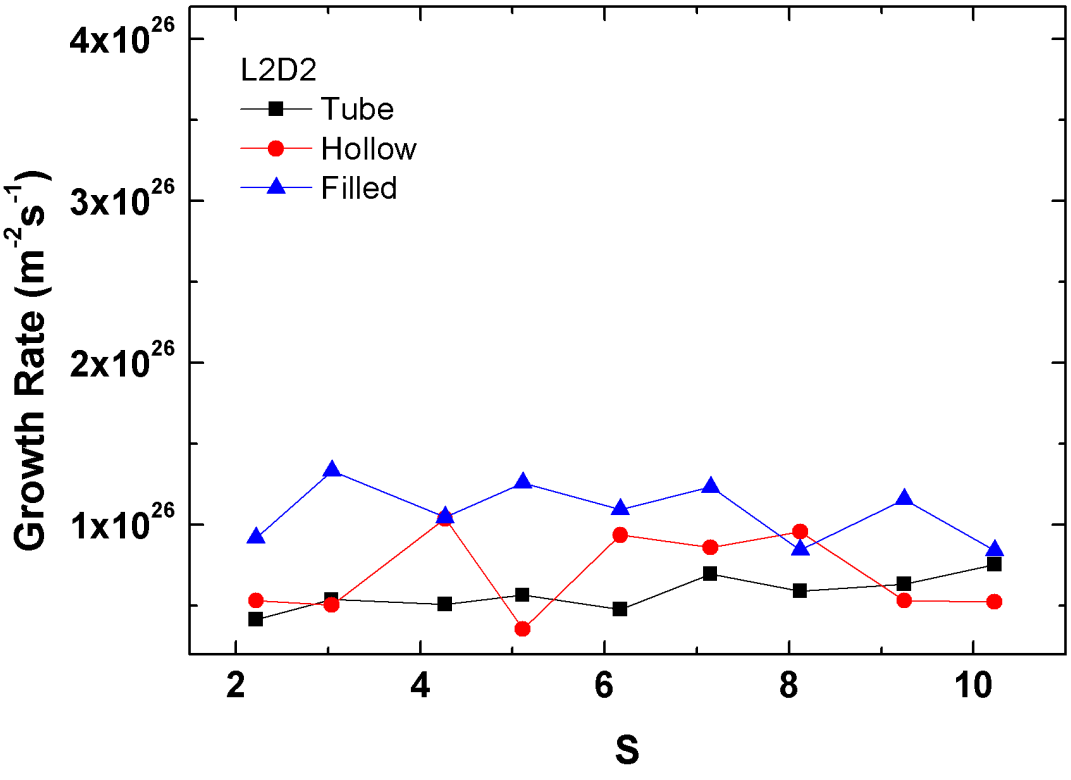
(a)


Growth Rate ($m^{-2}s^{-1}$)
4x10^26
3x10^26
2x10^26
1x10^26
2
4
6
8
10
S
L1D2
Tube
Hollow
Filled

(b)

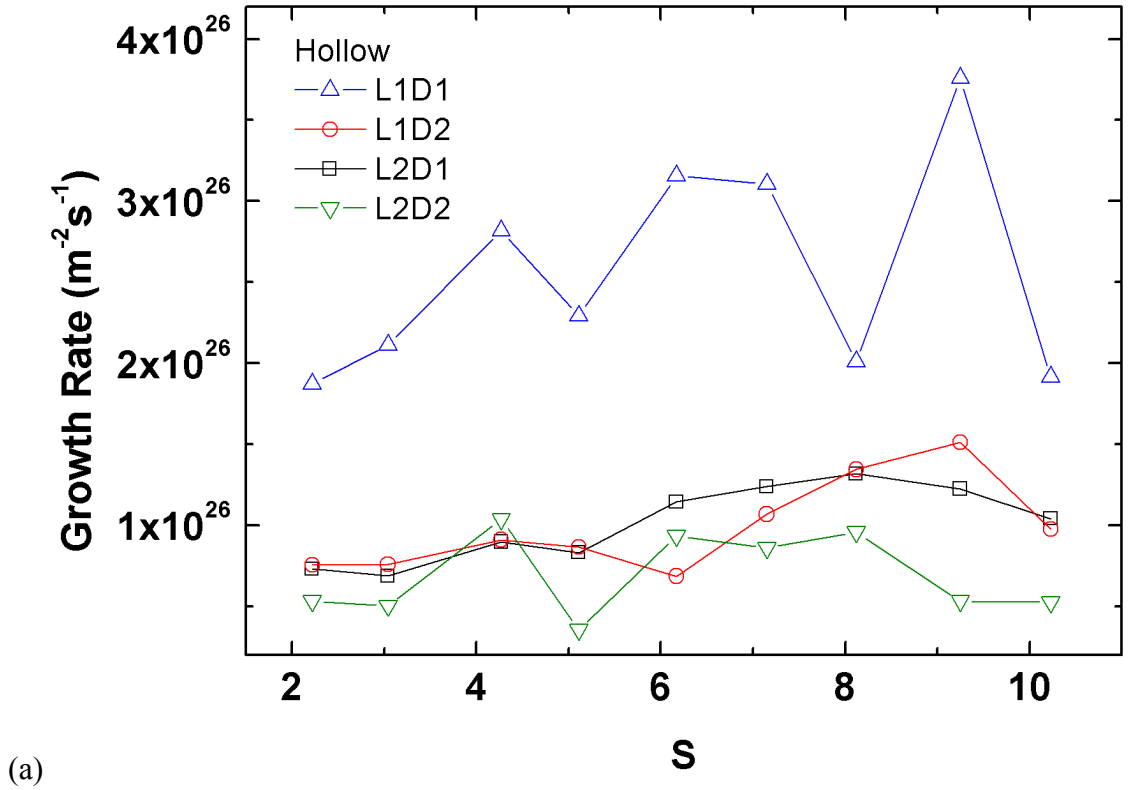


(c)

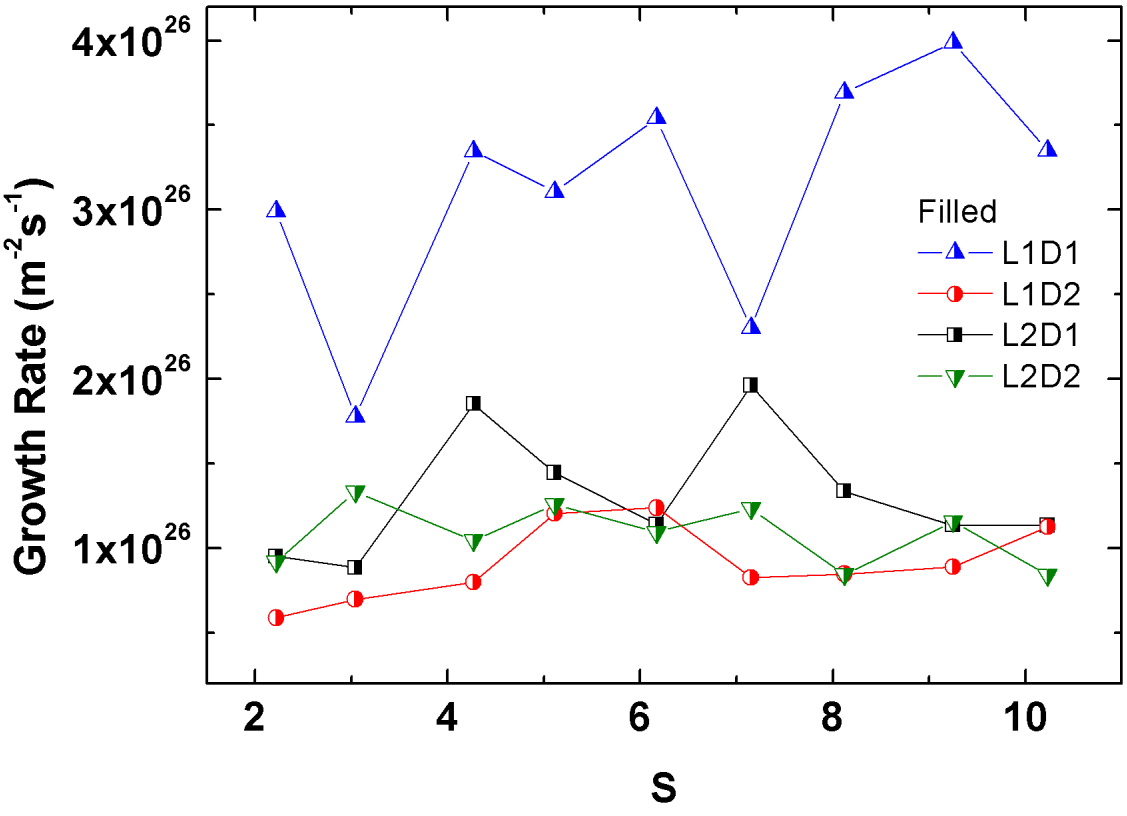


(d)

Fig. S5 Growth rates for all types of tubes, hollow and filled cylinders.

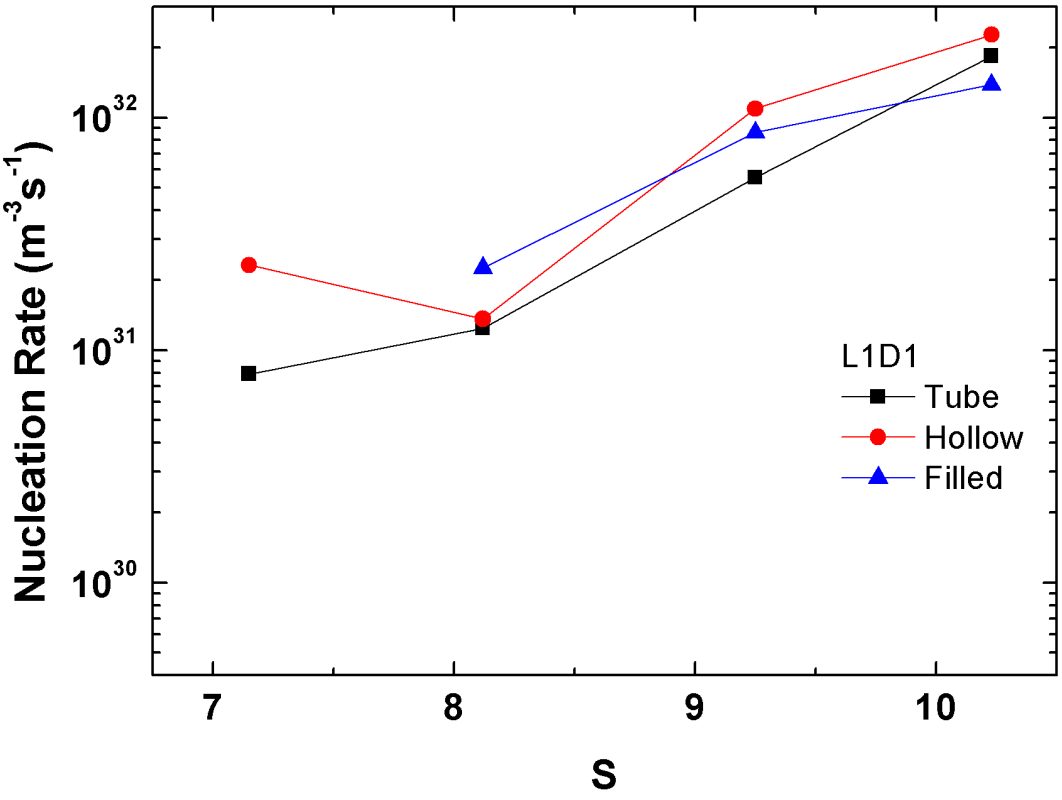


(a)

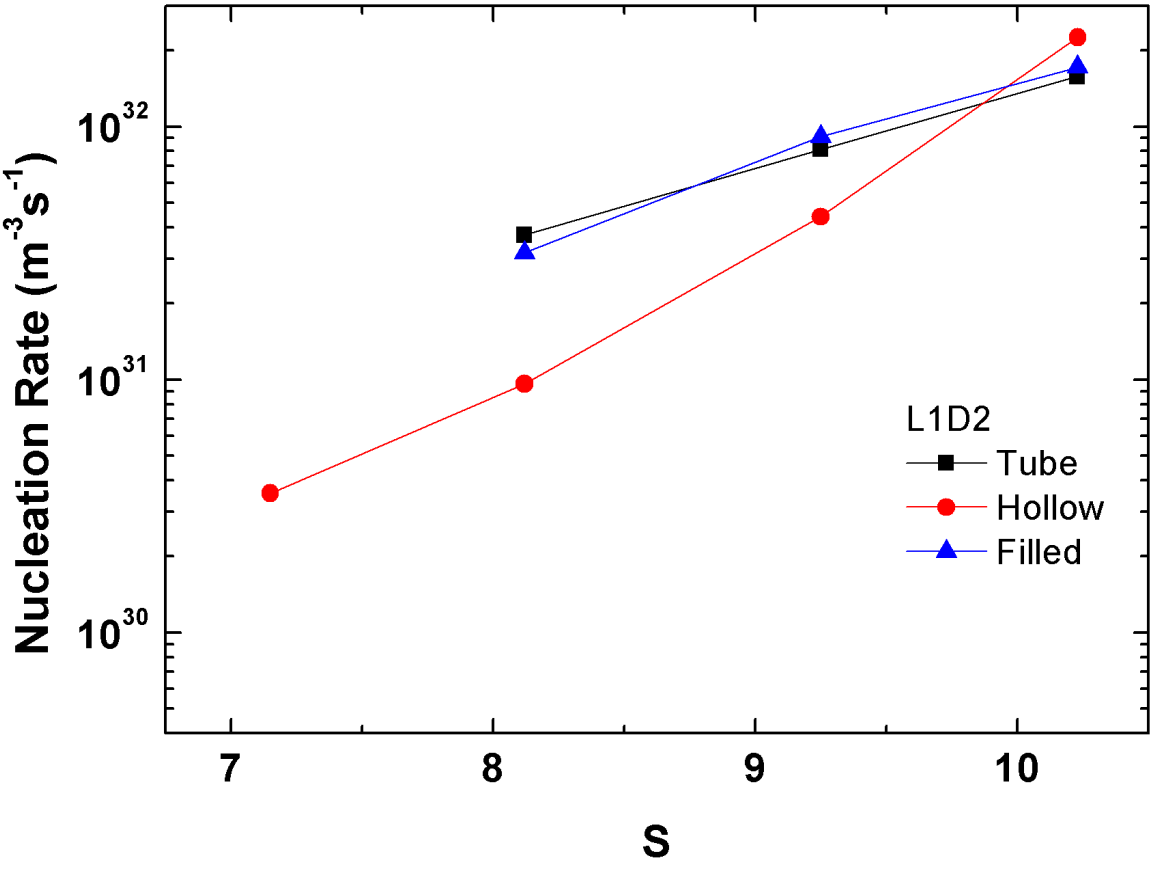


(b)

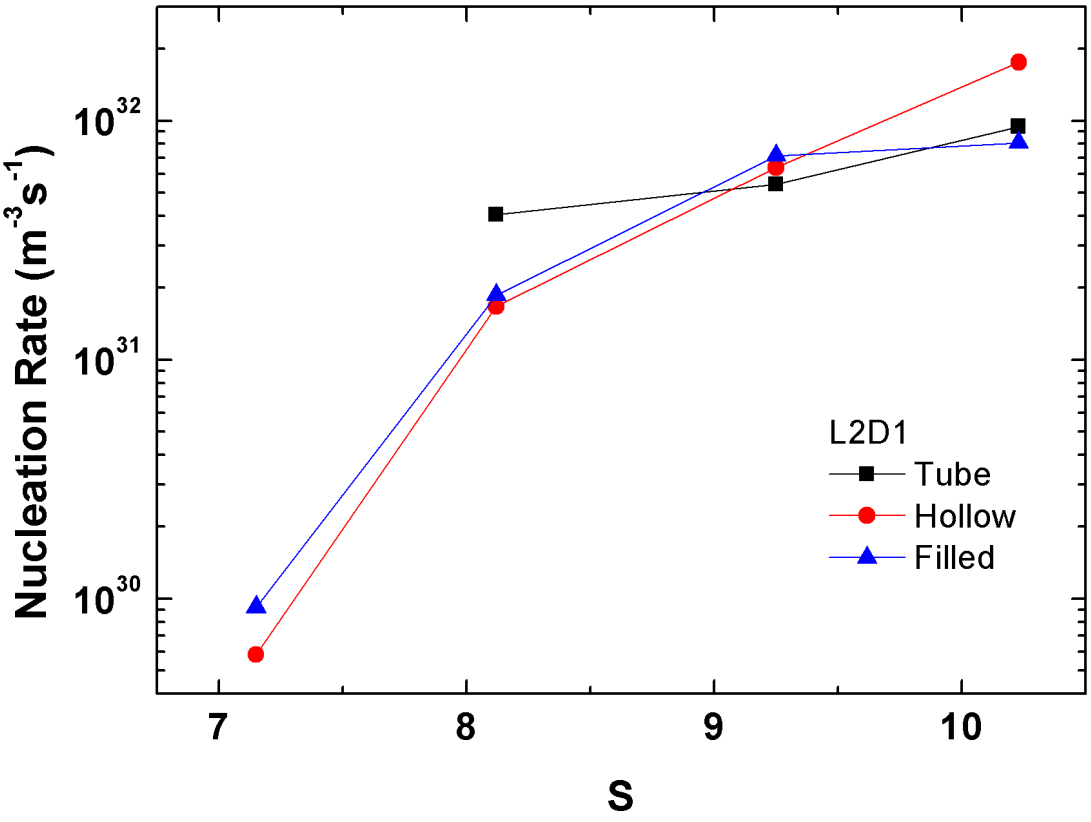
Fig. S6 Growth rates for the (a) hollow and (b) filled cylinders.


Nucleation Rate ($m^{-3}s^{-1}$)
10^{32}
10^{31}
10^{30}
7
8
9
10
S
L1D1
Tube
Hollow
Filled

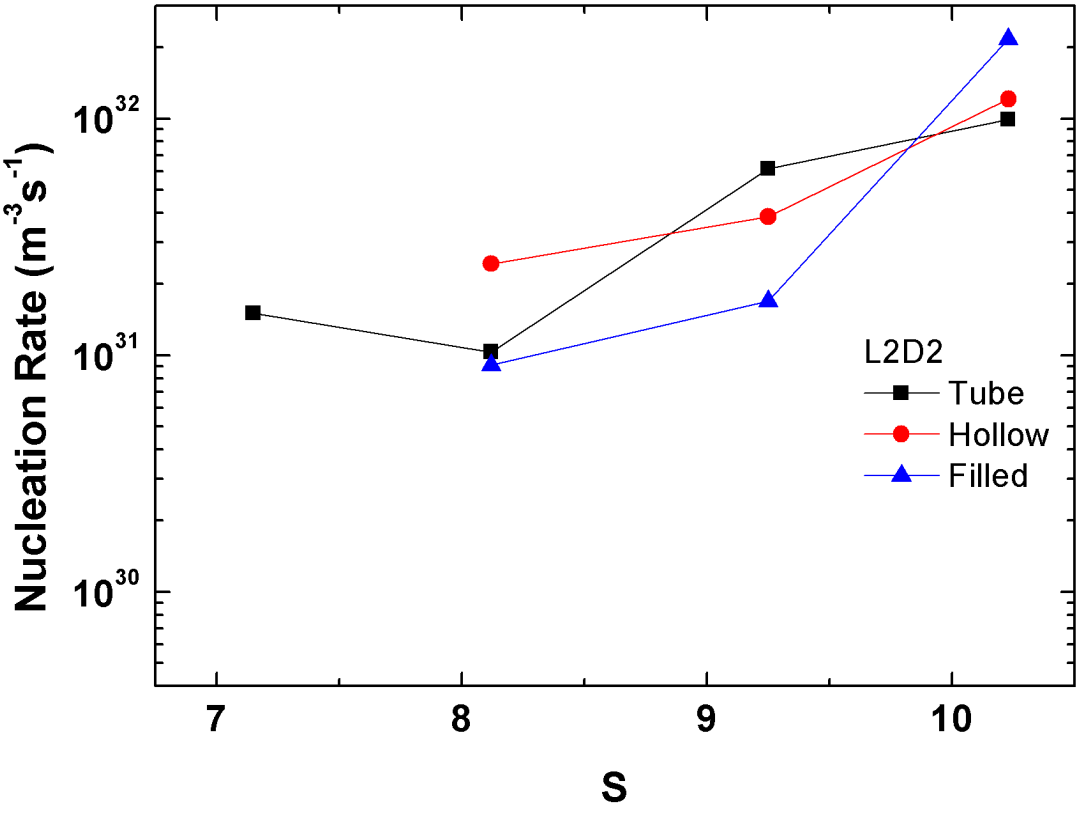
(a)


Nucleation Rate ($m^{-3}s^{-1}$)
10^{32}
10^{31}
10^{30}
7
8
9
10
S
L1D2
Tube
Hollow
Filled

(b)

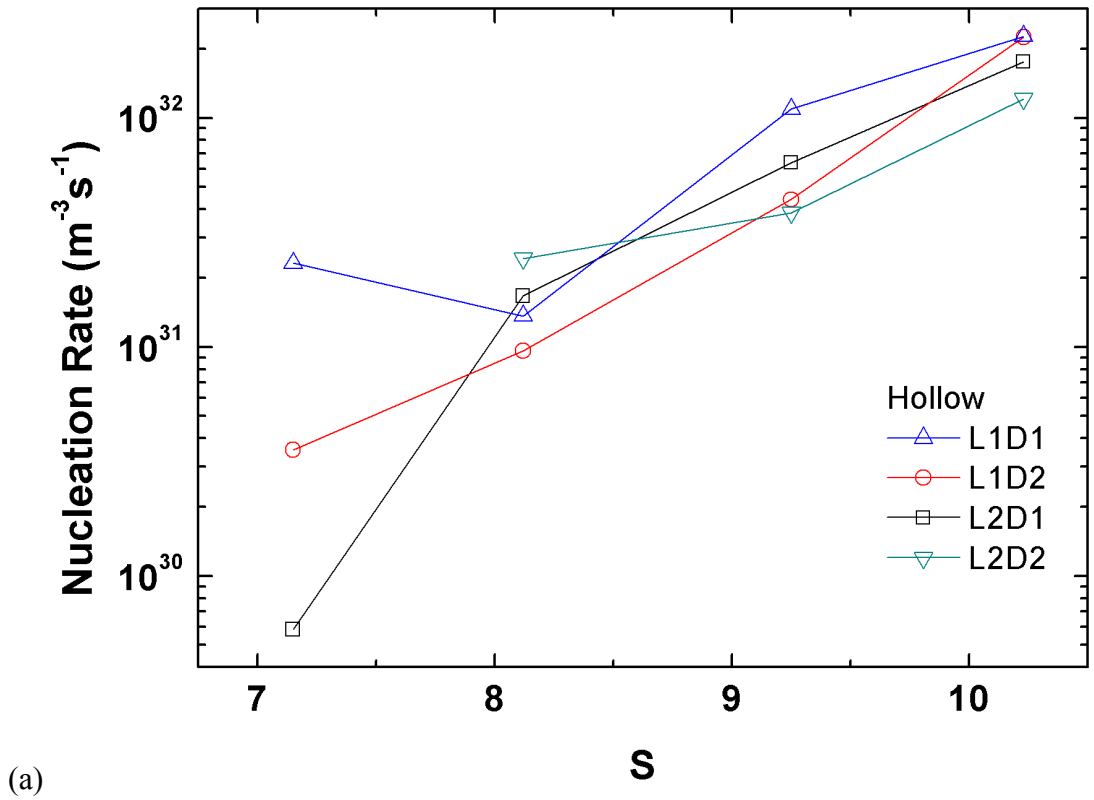


(c)

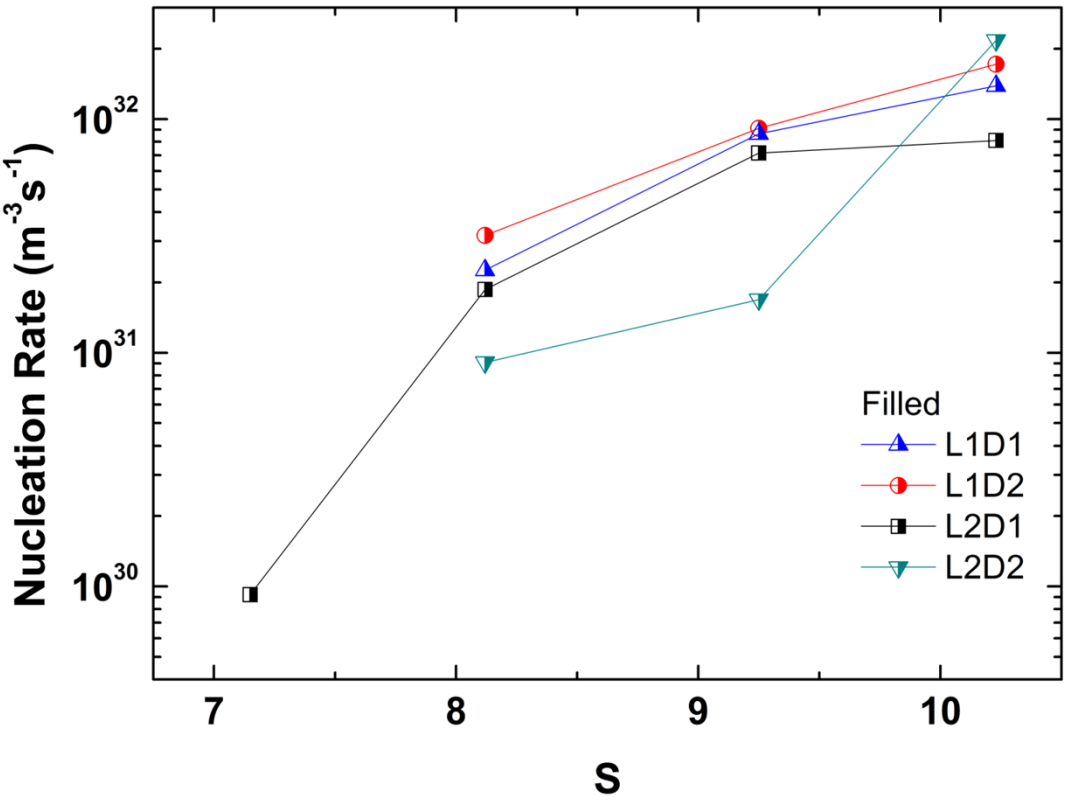


(d)

Fig. S7 Homogeneous nucleation rates for all types of the tube, hollow and filled cylinder.



(a)



(b)

Fig. S8 Different arrangement of the homogeneous nucleation rates for all types of the hollow and filled cylinder.