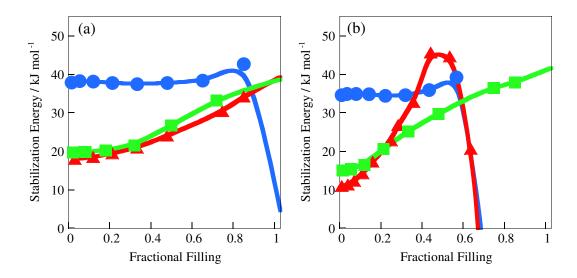
## Supporting Information for

## Kinetically Forbidden Transformations of Water Molecular Assemblies in Hydrophobic Micropores

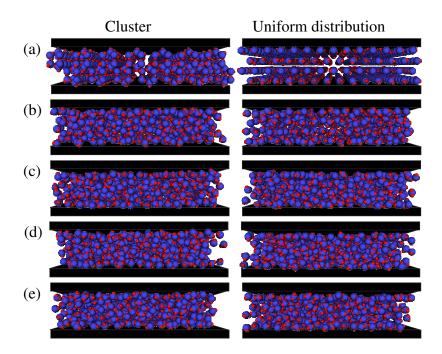
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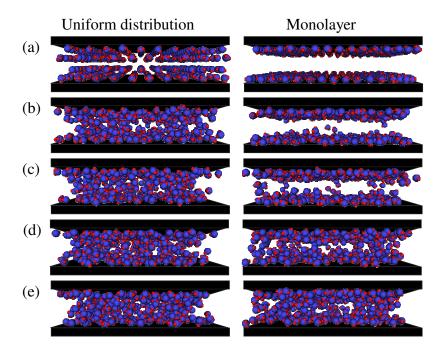
E-mail: ohba@pchem2.s.chiba-u.ac.jp



**Figure S1.** Stabilization energy as a function of fractional filling for w = 0.5 (a) and 1.5 nm (b). Clusters:  $\bullet$ , monolayers:  $\blacktriangle$ , and uniform distribution structure:  $\blacksquare$ .



**Figure S2.** Snapshots showing the cluster–monolayer and uniform distribution structure–monolayer transformations at  $\phi = 0.6$  in the micropore of w = 1.1 nm, as studied by MD simulation. Time scale = 0 (a), 1 (b), 2 (c), 3 (d), and 4 (e) ps.



**Figure S3.** Snapshots showing the uniform distribution structure–cluster and monolayer–cluster transformations at  $\phi = 0.2$  in the micropore of w = 1.1 nm, as studied by MD simulation. Time scale = 0 (a), 1 (b), 2 (c), 3 (d), and 4 (e) ps.