

Supplementary Material

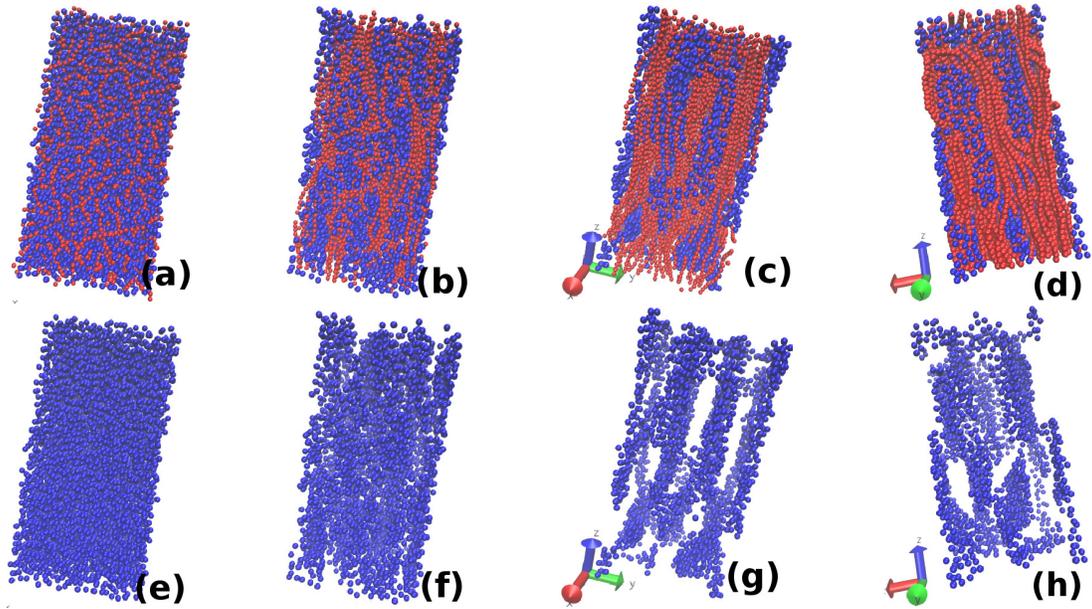


FIG. 1. The figure shows snapshots for four different values of σ_{4n} from (a)-(d) or (e)-(h), 1.25σ , 1.75σ , 2.25σ and 2.5σ , respectively, for $\epsilon_n = 0$. The upper row shows both the nanoparticles and monomers, while, the lower row shows only nanoparticles. The micellar chains are in dispersed state for $\sigma_{4n} = 1.25\sigma$. For $\sigma_{4n} > 1.25\sigma$, the nanoparticles and micellar chains form network-like structures (in (b,c) or (f,g)) which show a morphological transition for $\sigma_{4n} = 2.5\sigma$ forming individual sheets of nanoparticles (in (h)).

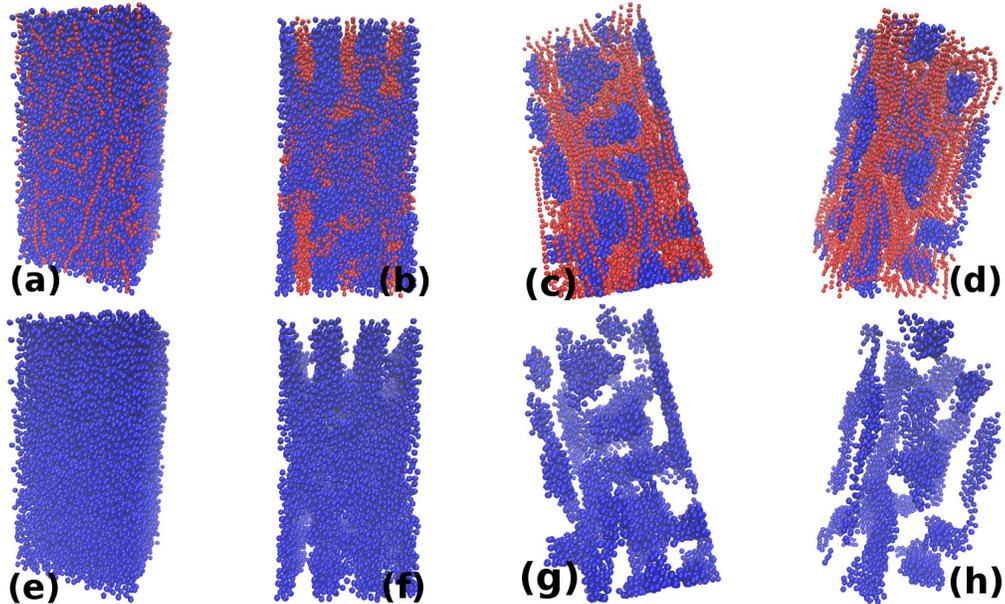


FIG. 2. The figure shows snapshots for four different values of σ_{4n} from left to right, 1.25σ , 1.75σ , 2.5σ and 2.75σ , respectively, for $\epsilon_n = 5k_B T$. The upper row shows both the nanoparticles and monomers, while the lower row shows only nanoparticles. With an increase in σ_{4n} from 1.25σ to 1.5σ , the micellar chains show a morphological transition from a dispersed state to the formation of clusters of micellar chains that joins to form a network-like structure. With further increase in σ_{4n} , the system form some intermediate structures with nanoparticle network breaking gradually and finally showing a transition for $\sigma_{4n} = 2.75\sigma$ forming individual sheets of nanoparticles.

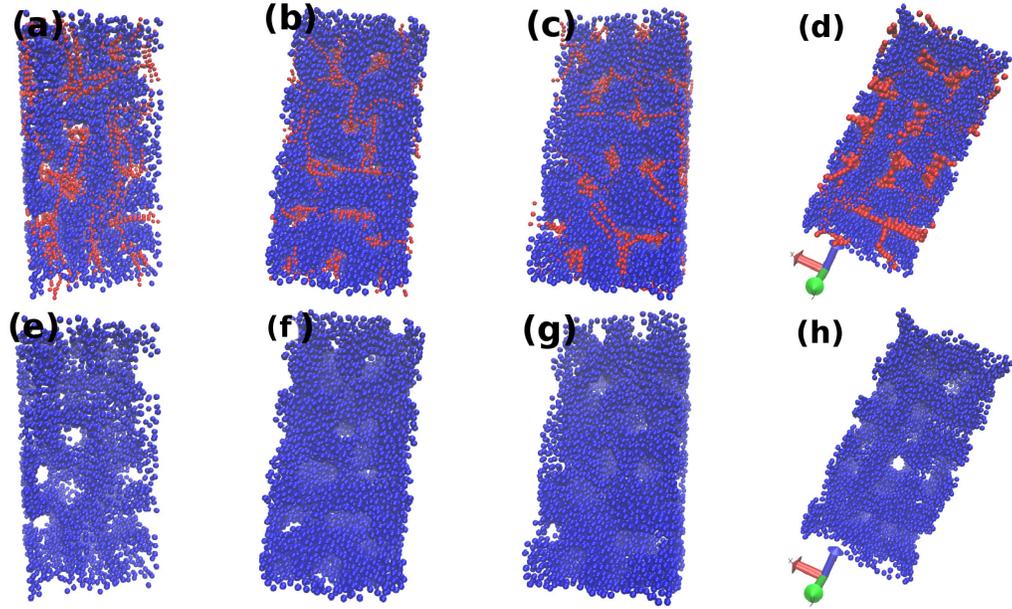


FIG. 3. The figure shows the snapshots for monomer no. density $\rho_m = 0.037\sigma^{-3}$ and $\sigma_{4n} = 2.75\sigma$ for four different values of $\epsilon_n = 0, 2, 5$ and $11(k_B T)$ from left to right respectively. The upper row shows both the nanoparticles(blue) and monomers(red) while, the lower row shows only nanoparticles. All the snapshots for $\epsilon_n > 0$ show similar kind of nanoparticle arrangement but the nanoparticle show lower packing for $\epsilon_n = 0$.