

Dispersion of hydrophilic nanoparticles in natural rubber with phospholipids

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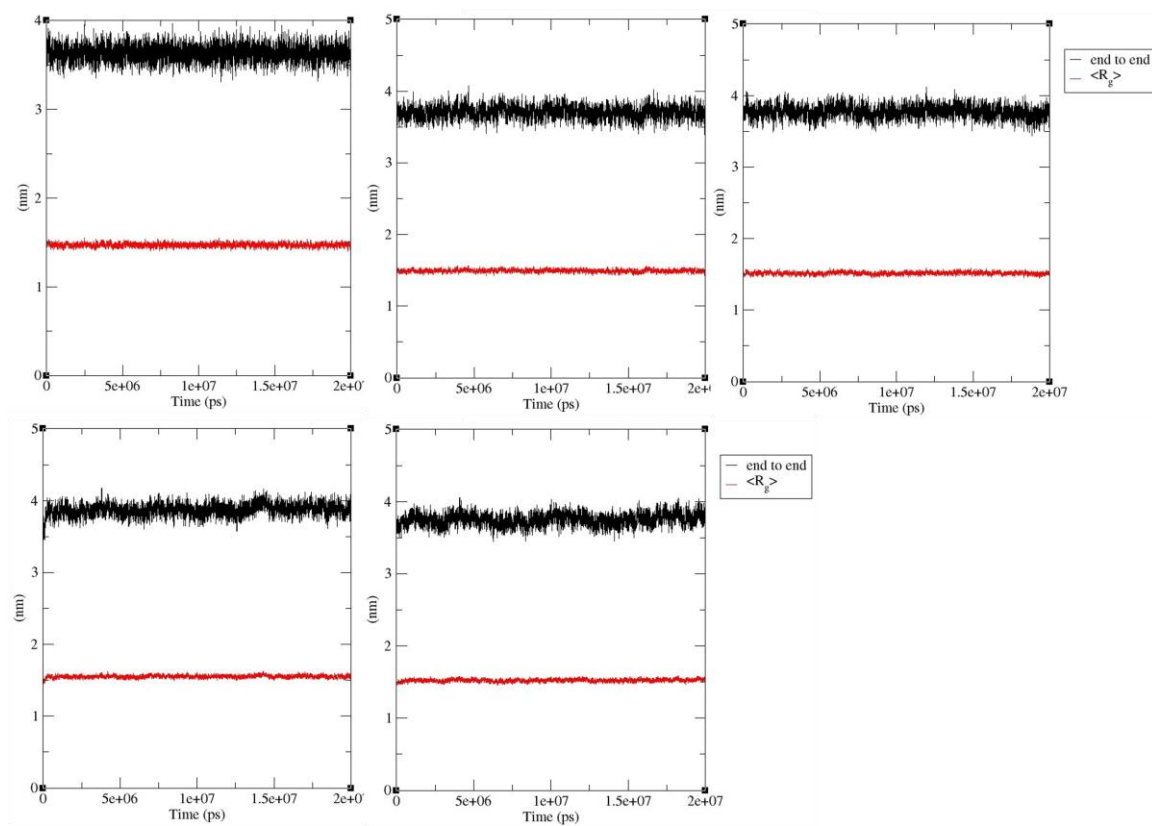


Figure S1: Time evolution of the end-to-end distance (black line) and the radius of gyration (red) of the *cis*-PI-HMF-DPPC composites at different DPPC concentrations from 0 to 30 phr.

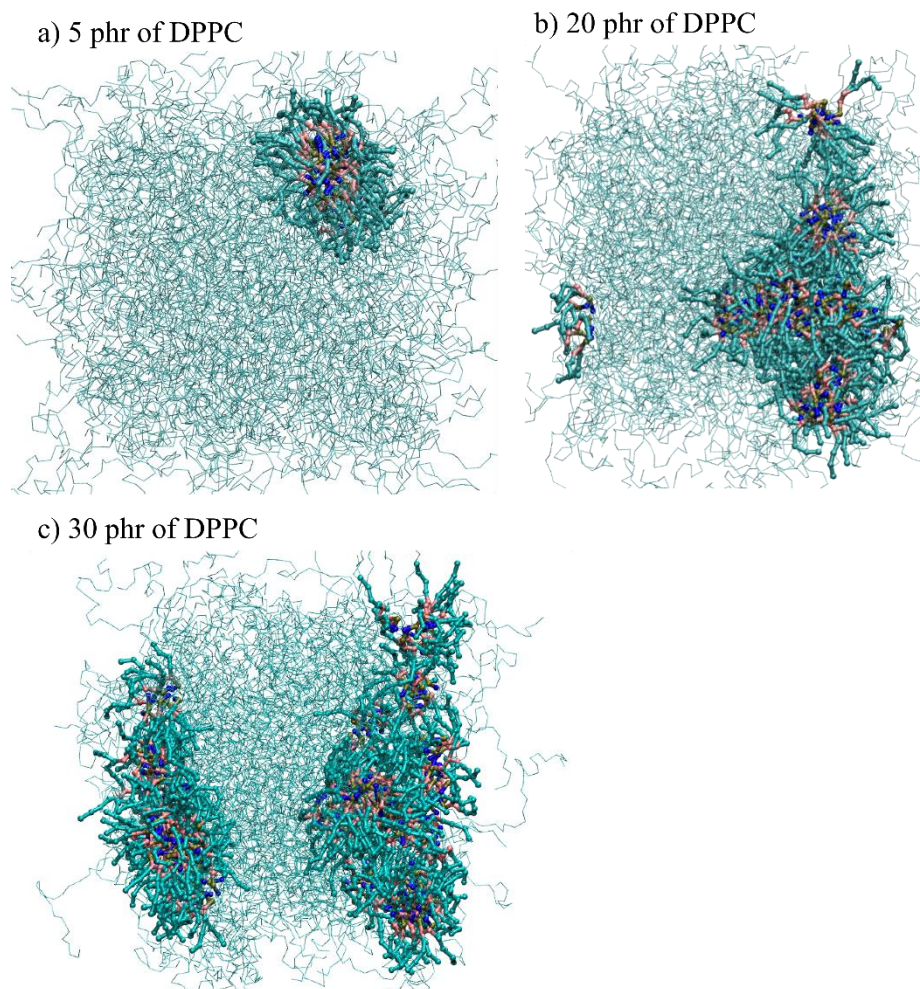
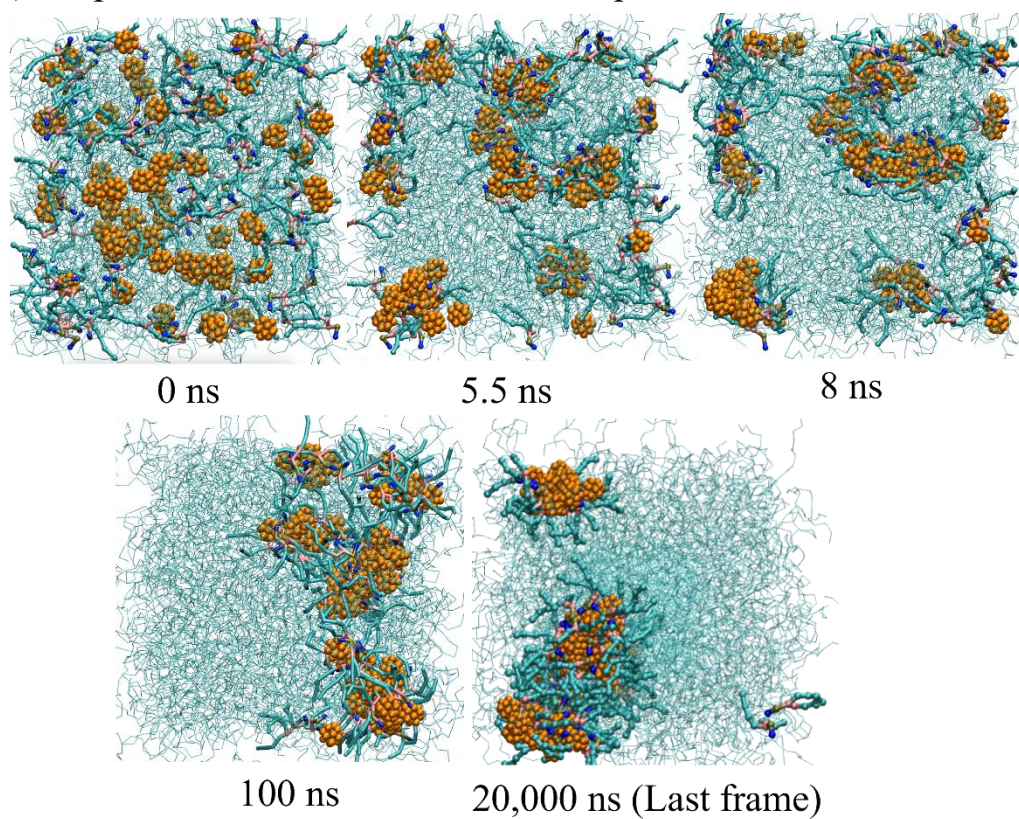
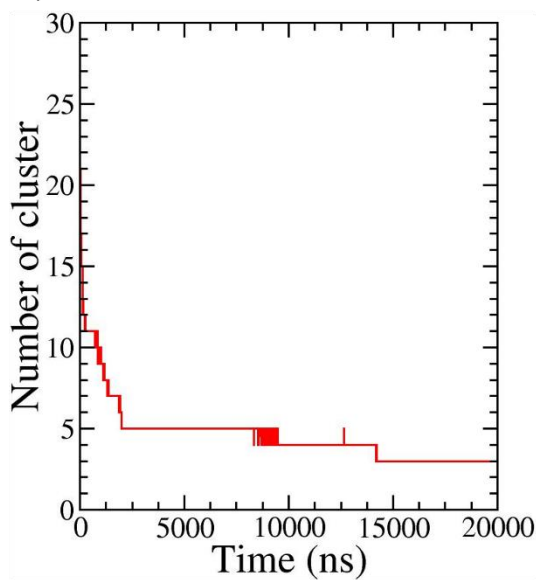


Figure S2: Snapshots at a) 5 phr, b) 20 phr and c) 30 phr DPPC concentrations in *cis*-PI-DPPC composites.

a) Snapshots of *cis*-PI-DPPC-HMF composites



b) The number of HMF cluster



c) Average cluster size of HMF

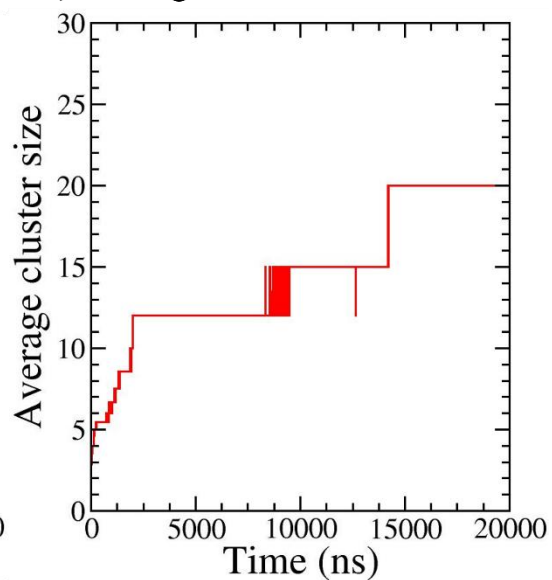


Figure S3. a) Visualizations of *cis*-PI-DPPC-HMF composites at 10 phr DPPC concentration: 0 (initial structure), 5.5, 8, 100 and 20000 (the last frame) ns. b) The number of HMF clusters, and c) the average cluster size of HMF at 10 phr DPPC concentration as a function of time.

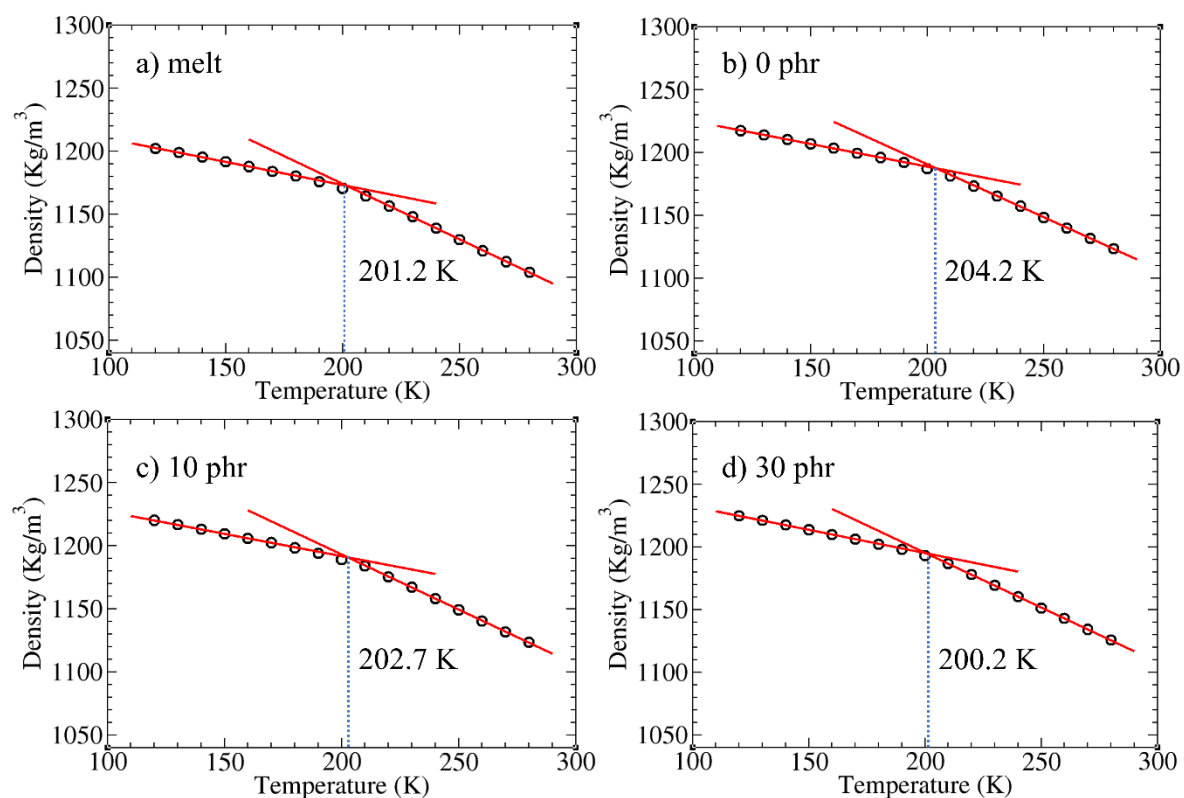


Figure S4: Density versus temperature of the *cis*-PI in melt and the *cis*-PI-HMF-DPPC composites.

