



Supplementary Materials

## Amphiphilic Copolymer of Polyhedral Oligomeric Silsesquioxane (POSS) Methacrylate for Solid Dispersion of Paclitaxel

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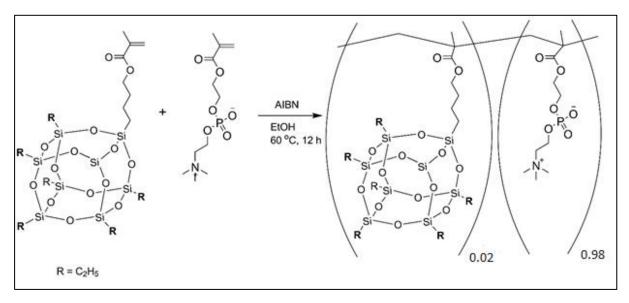
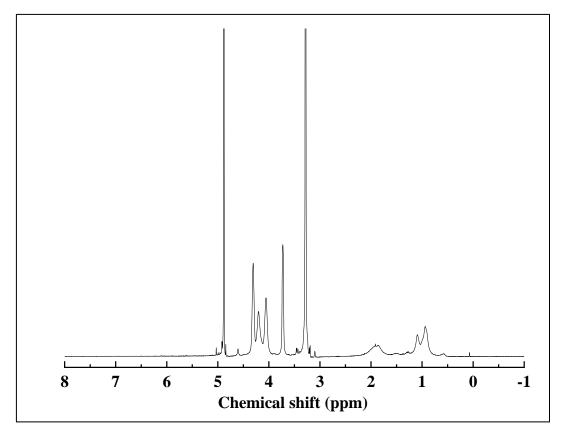
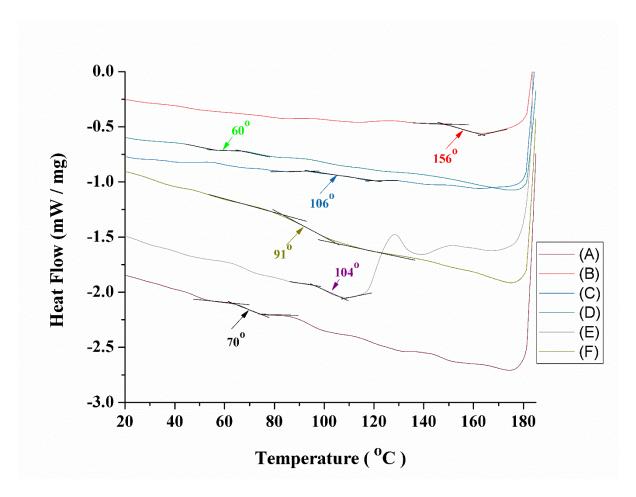


Figure S1. Synthesis of MPC-ran-C<sub>2</sub>H<sub>5</sub>-POSS.

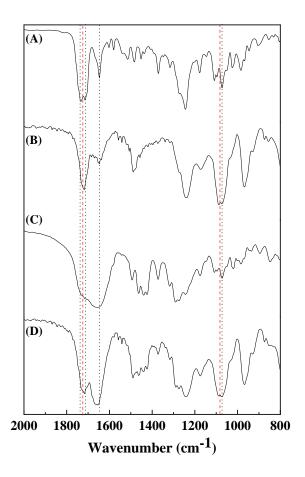


**Figure S2.** A  $^1\text{H}$  NMR spectrum of MPC-ran-C2H5-POSS in methanol- $d_4$ .

 $^{1}$ H NMR (400 MHz) spectra obtained from methanol- $d_4$   $\delta$ : 0.94 [s, -C-CH<sub>3</sub>], 1.91 [s, -CH<sub>2</sub>-], 3.28 [s, -N(CH<sub>3</sub>)<sub>3</sub>], 3.9-4.3 [m, -OCH<sub>2</sub>], 3.76 [s, -CH<sub>2</sub>N], 0.59 [s, -Si-CH<sub>2</sub>-].



**Figure S3.** DSC thermograms (the 2<sup>nd</sup> heating) of A: MPC-ran-C<sub>2</sub>H<sub>5</sub>-POSS; B: PVP; C: PTX; D: MPC-ran-C<sub>2</sub>H<sub>5</sub>-POSS/PTX; E: PVP/PTX; F: MPC-ran-C<sub>2</sub>H<sub>5</sub>-POSS/PVP/PTX.



**Figure S4.** FT-IR spectra of A: PTX; B: MPC-ran-C<sub>2</sub>H<sub>5</sub>-POSS/PTX physical mixture; C: PVP/PTX physical mixture; D: MPC-ran-C<sub>2</sub>H<sub>5</sub>-POSS/PTX /PVP/PTX physical mixture.