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Synthesis and Properties of Hybrid Core-Shell Poly(alkyltrialkoxysiloxane) Latex

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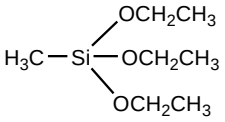
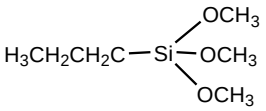
Supplementary information

Measurements The FTIR spectra images were collected by using FTIR spectrometer (Nicolet iS50, Thermofisher). The Poly(alkyltrialkoxysiloxane) Latex (PTMS:MTES=1:1, PTMS:MTES=4:1, PTMS, PTMS:OTMS=4:1). are after heat treatment in nitrogen atmosphere at 300℃.

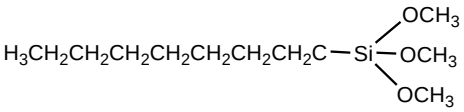
Fig. S1 The image of Poly(alkyltrialkoxysiloxane) Latex: (A) PTMS:MTES=1:1, (B) PTMS:MTES=4:1, (C) PTMS, (D) PTMS:OTMS=4:1



Methyltriethoxysilane (MTES)



N-propyltrimethoxysilane(PTMS)



N-octylmethoxysilane (OTMS)

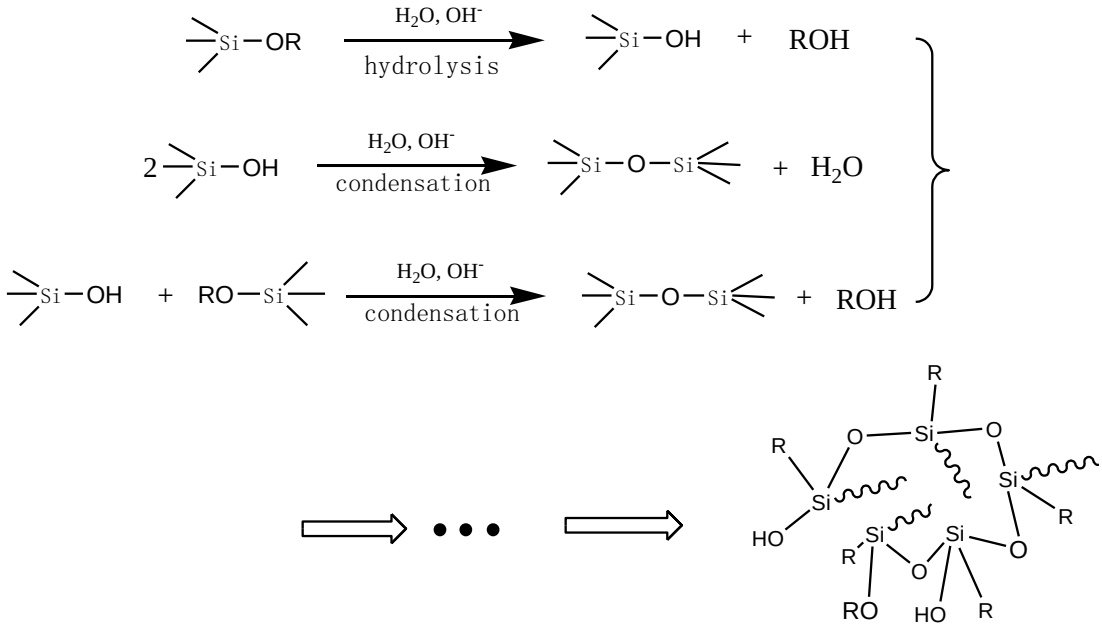


Fig. S2 Alkyltrialkoxysilane hydrolysis-condensation reaction mechanism

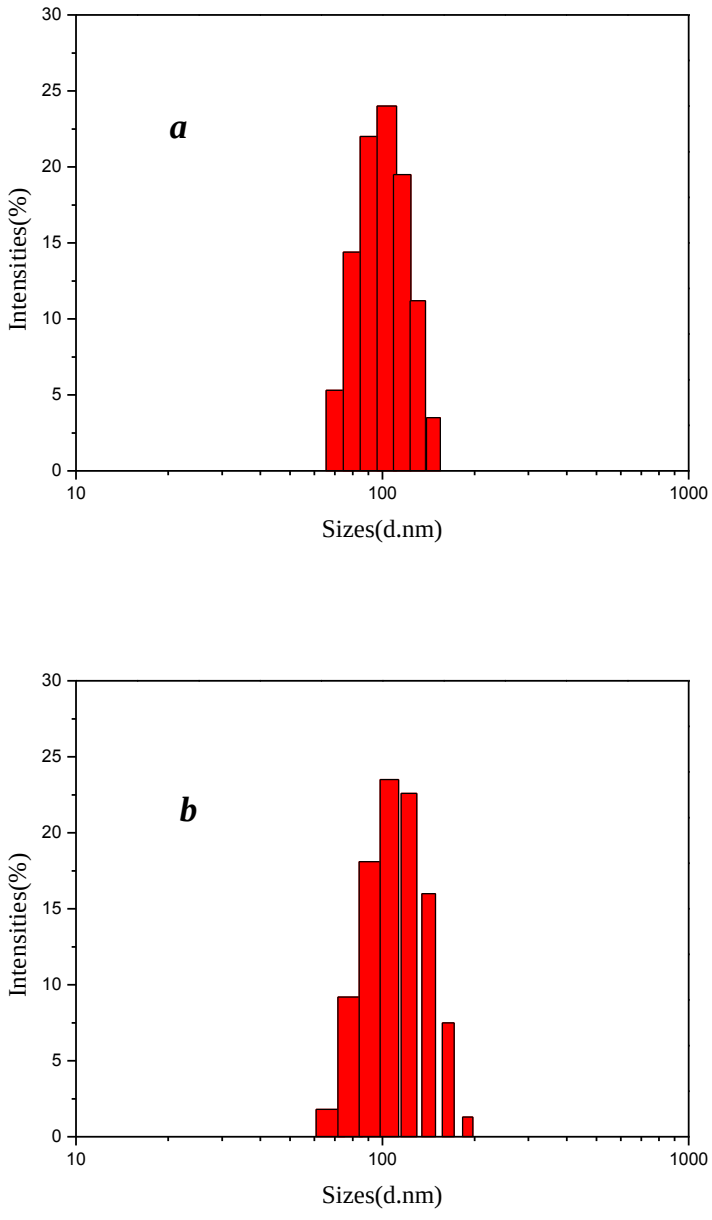


Fig. S3 The particle size distribution of poly(alkyltrialkoxysiloxane) latex : PTMS:MTES=4:1, *a*, after the completion of the synthesis of emulsion; *b*, for 6 months later

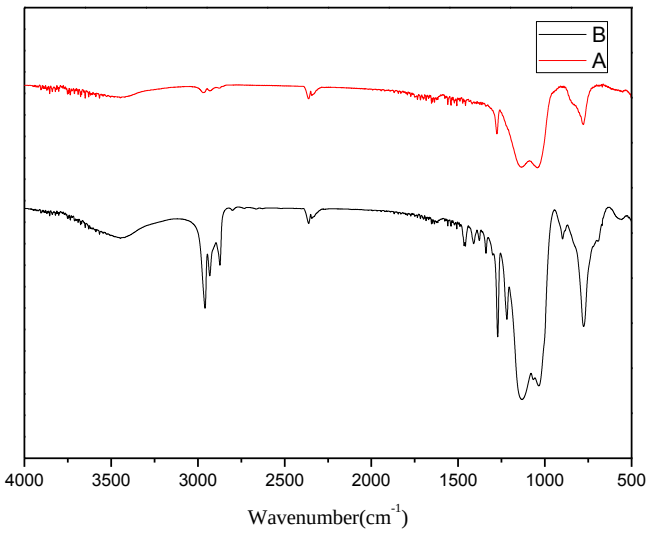


Fig. S4 The FTIR of Poly(alkyltrialkoxysiloxane) Latex: PTMS:MTES=1:1; (A) heat treatment in nitrogen atmosphere at 300℃, (B) untreated

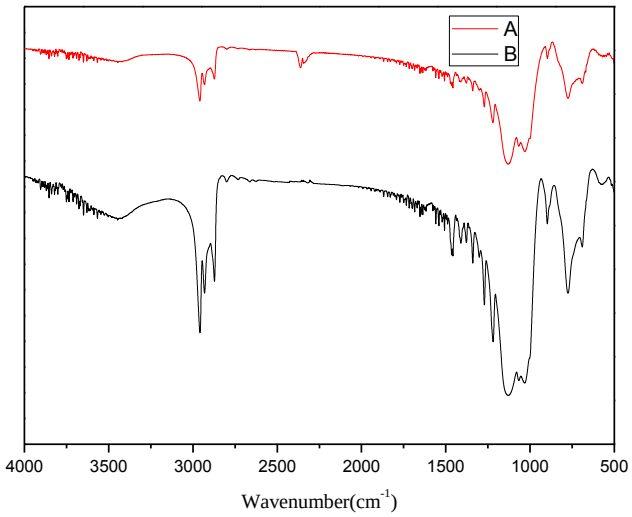


Fig. S5 The FTIR of Poly(alkyltrialkoxysiloxane) Latex: PTMS:MTES=4:1; (A) heat treatment in nitrogen atmosphere at 300℃, (B) untreated

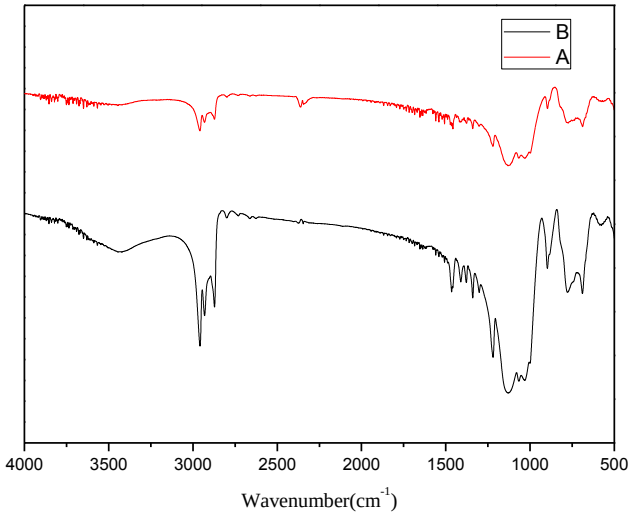


Fig. S6 The FTIR of Poly(alkyltrialkoxysiloxane) Latex: PTMS; (A) heat treatment in nitrogen atmosphere at 300℃, (B) untreated

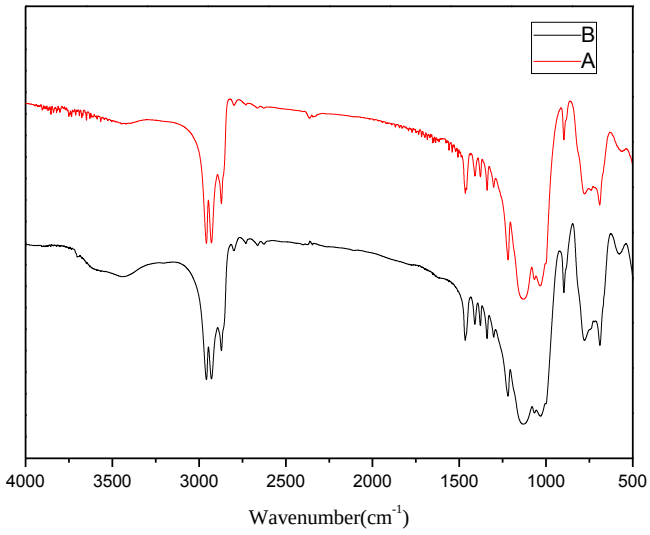


Fig. S7 The FTIR of Poly(alkyltrialkoxysiloxane) Latex: PTMS:OTMS=4:1; (A) heat treatment in nitrogen atmosphere at 300℃, (B) untreated