

SUPPORTING INFORMATION

Successful synthesis of blocked polyisocyanates using easily cleavable phenols as blocking agents and their deblocking and cure studies.

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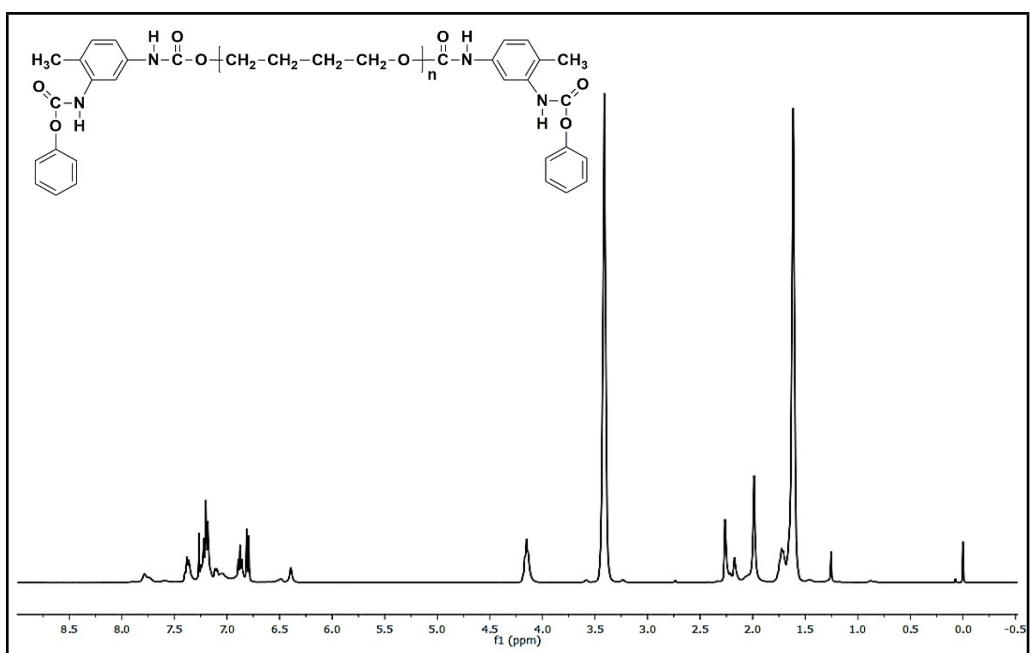


Fig. S1. $^1\text{H-NMR}$ spectrum of phenol-blocked polyisocyanate (Solvent: CDCl_3).

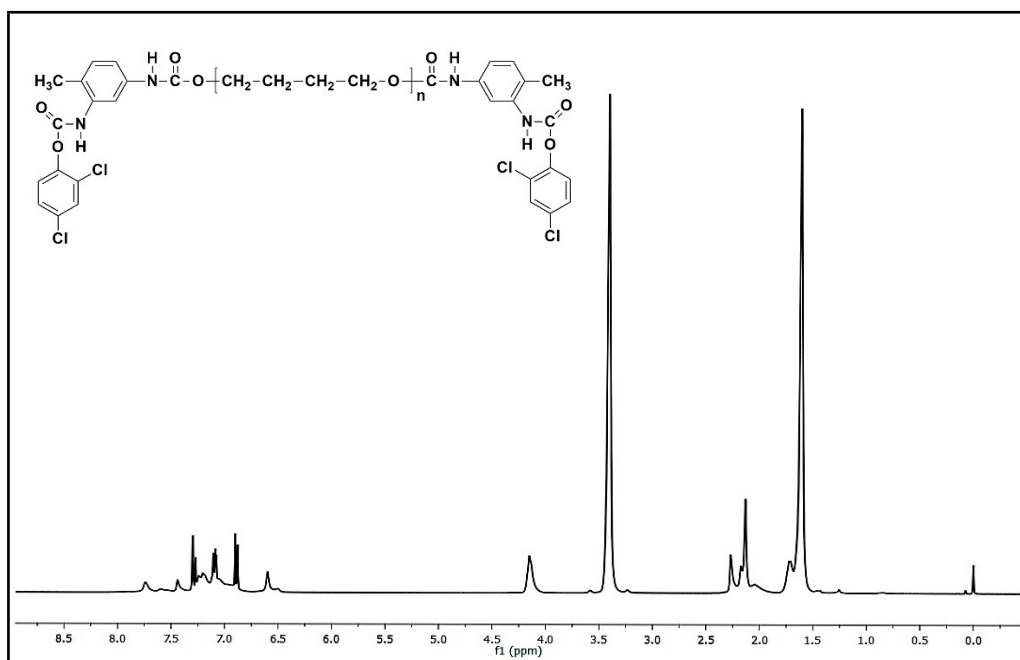


Fig. S2. $^1\text{H-NMR}$ spectrum of 2,4-dichlorophenol-blocked polyisocyanate (Solvent: CDCl_3).

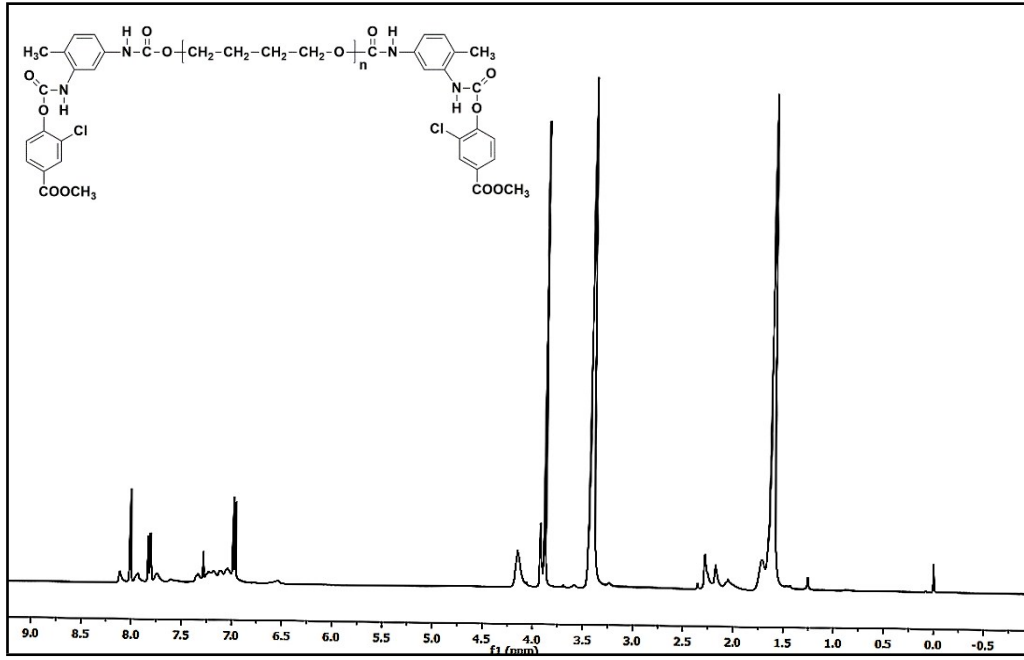


Fig. S3. $^1\text{H-NMR}$ spectrum of methyl 3-chloro-4-hydroxybenzoate-blocked polyisocyanate (Solvent: CDCl_3).

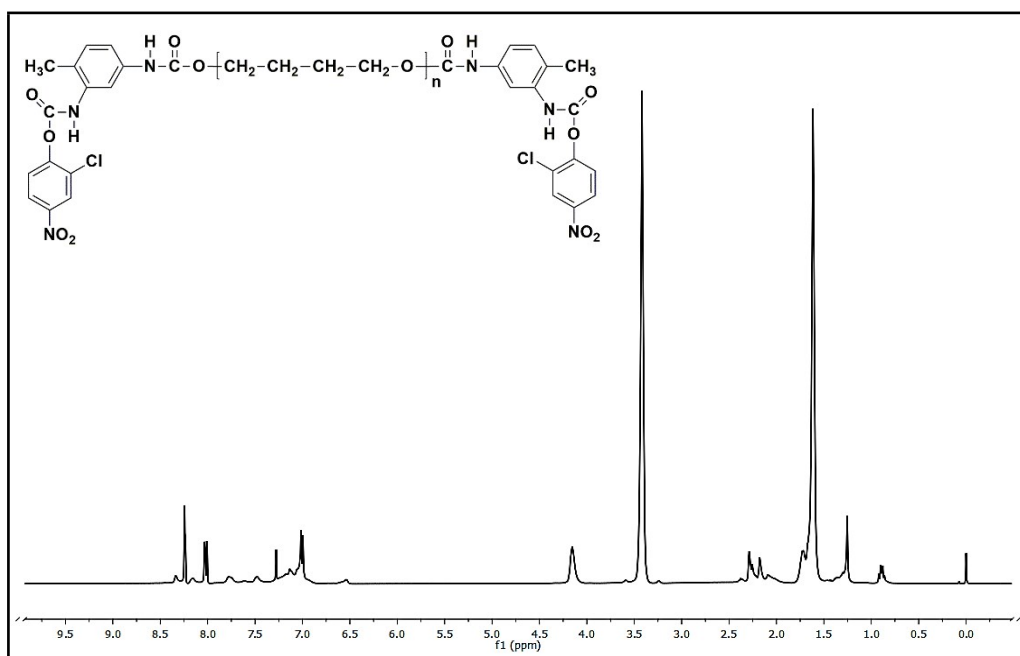


Fig. S4. $^1\text{H-NMR}$ spectrum of 2-chloro-4-nitrophenol-blocked polyisocyanate (Solvent: CDCl_3).

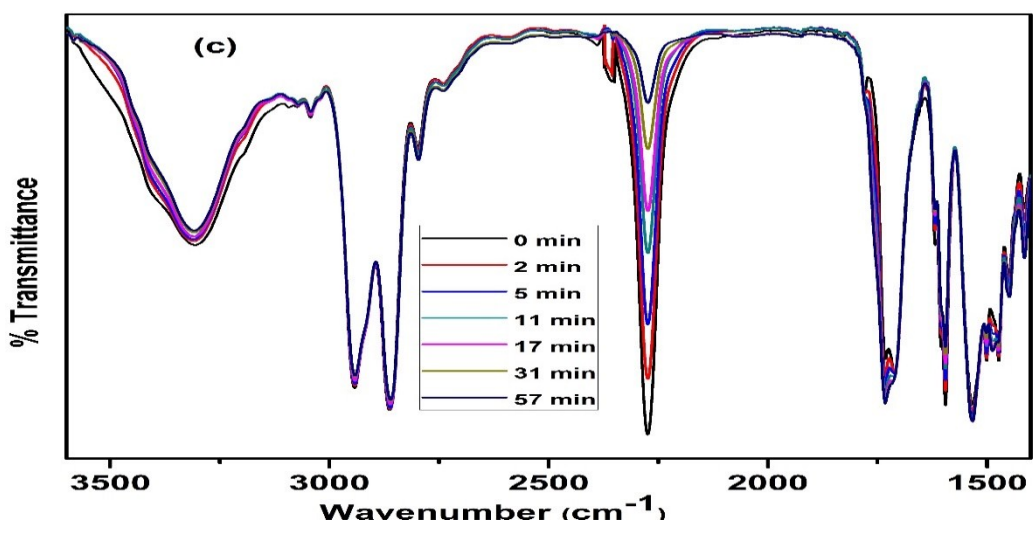
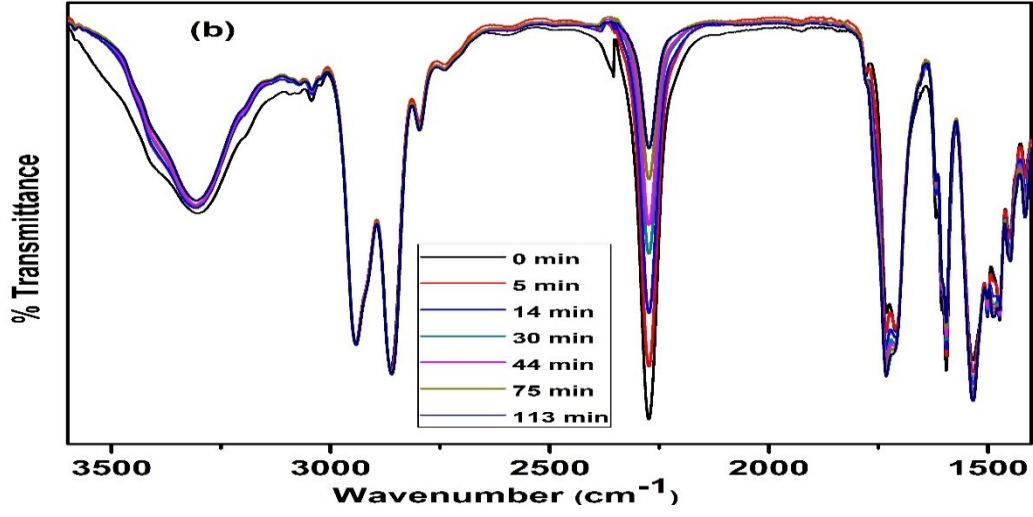
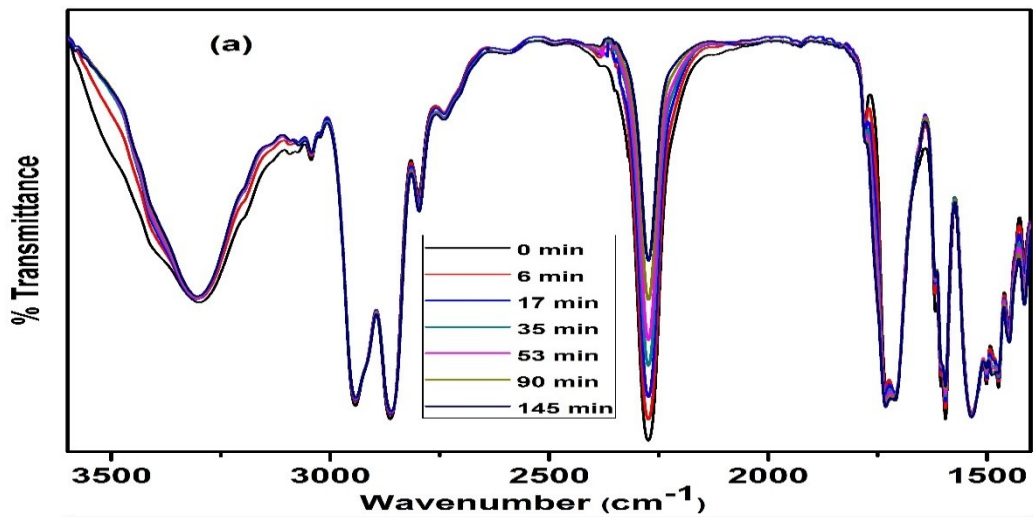


Fig. S5. FT-IR spectra recorded for different time intervals at isothermal conditions for the blocking reaction of polyisocyanate with phenol; (a) 40 °C (b) 50 °C and (c) 60 °C.

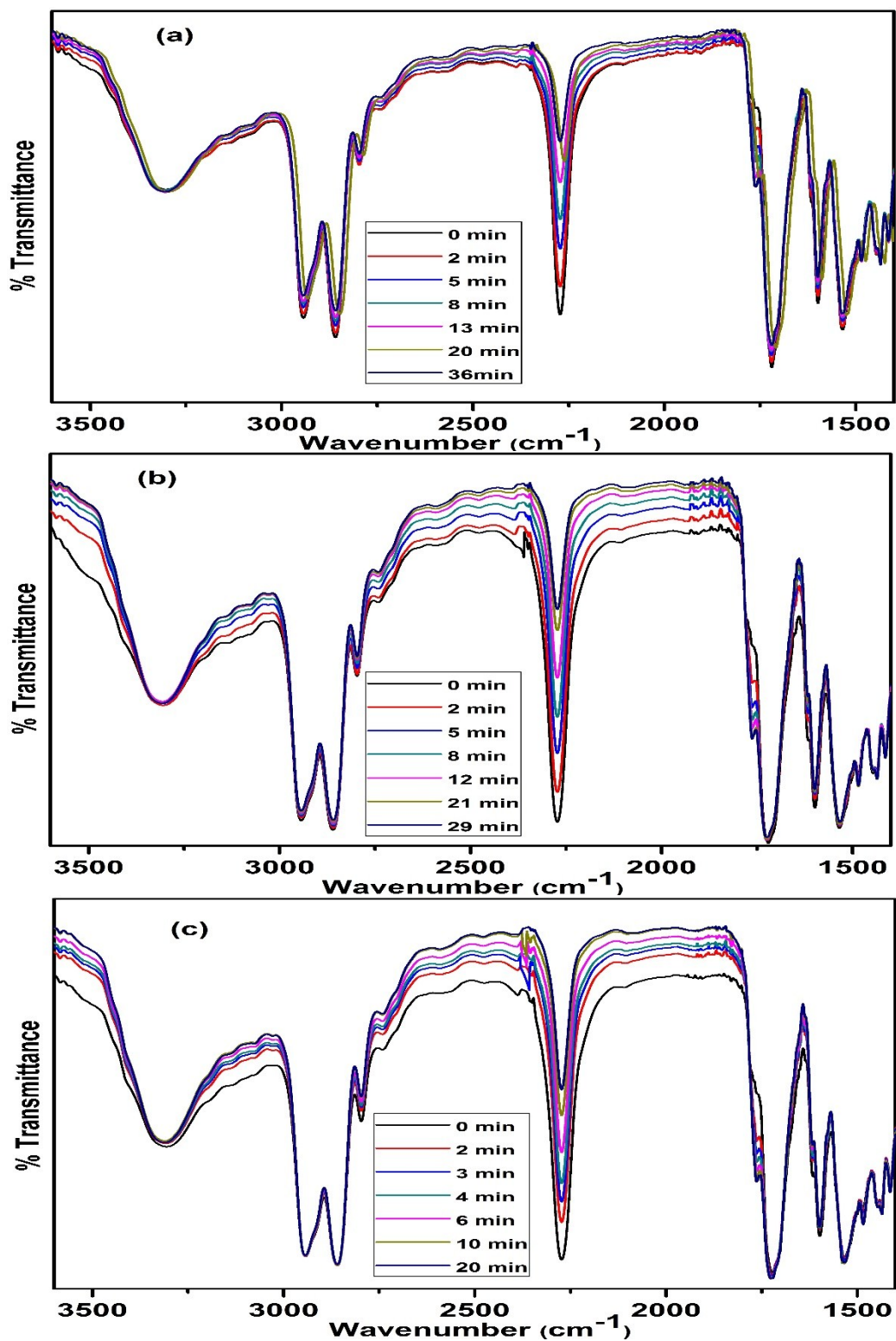


Fig. S6. FT-IR spectra recorded for different time intervals at isothermal conditions for the blocking reaction of polyisocyanate with methyl 3-chloro-4-hydroxybenzoate; (a) 40 °C (b) 50 °C and (c) 60 °C.

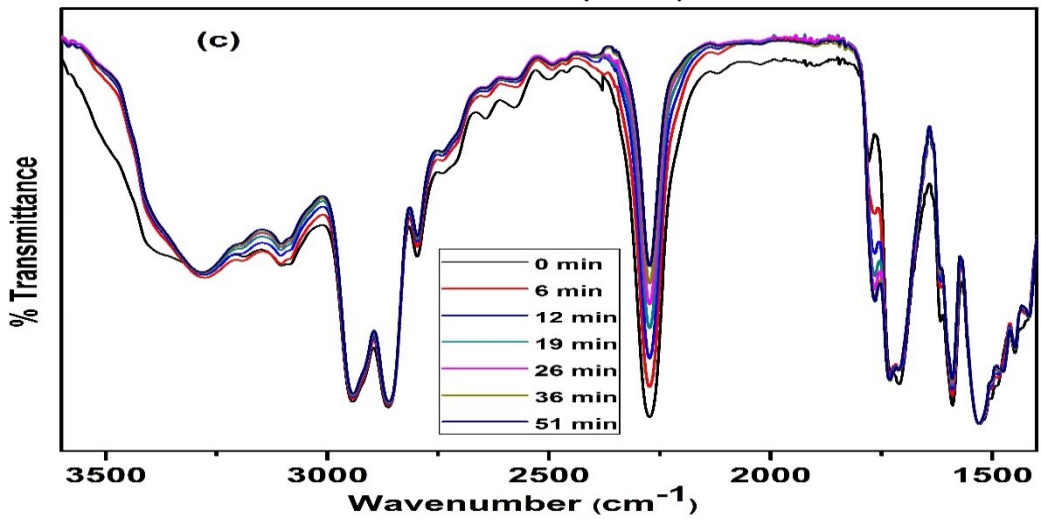
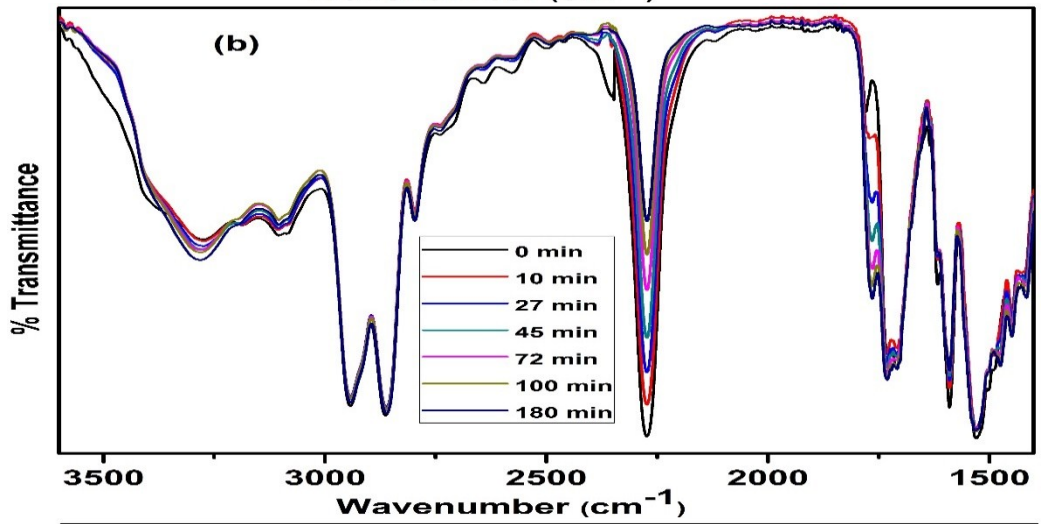
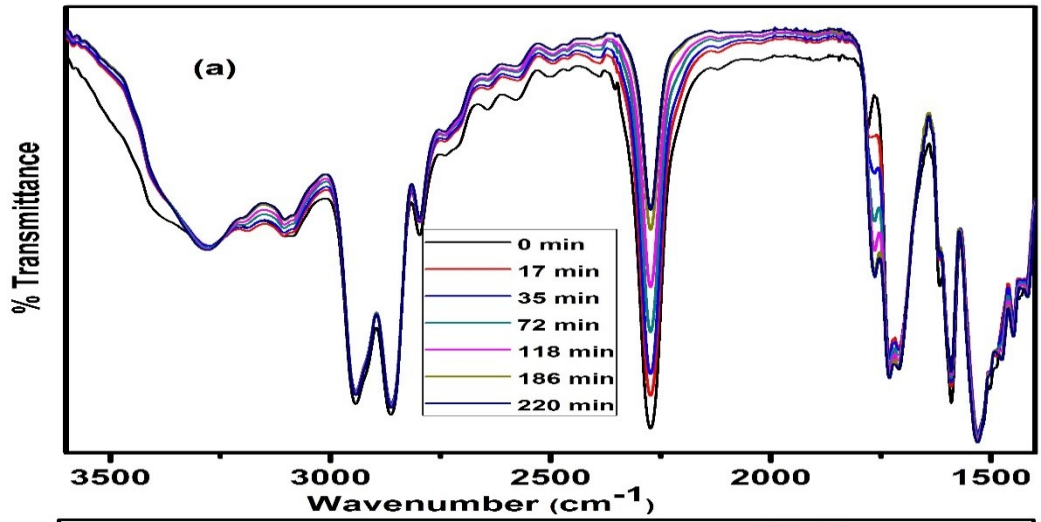


Fig. S7. FT-IR spectra recorded for different time intervals at isothermal conditions for the blocking reaction of polyisocyanate with 2-chloro-4-nitrophenol; (a) 40 °C (b) 50 °C and (c) 60 °C.

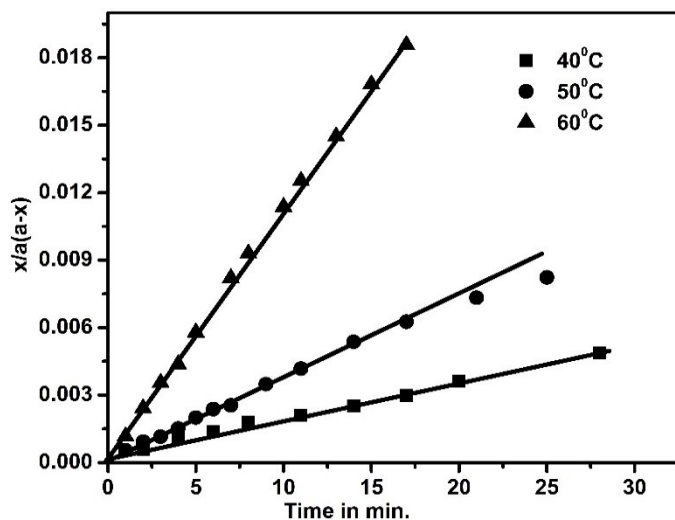


Fig. S8. Amine-catalyzed second-order kinetic plots of blocking reaction of polyisocyanate with phenol.

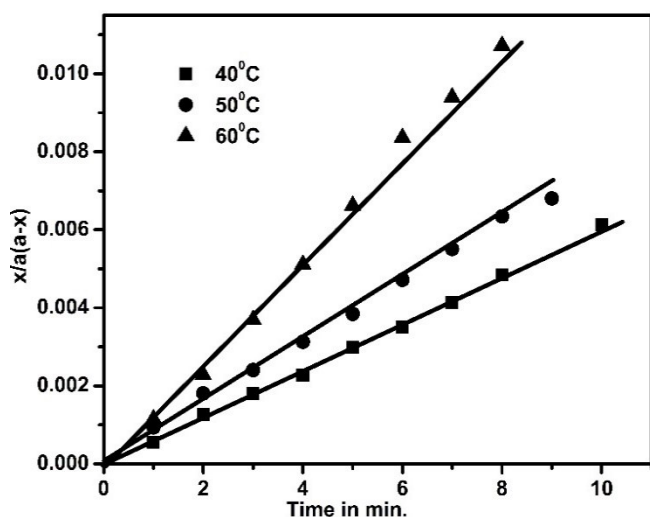


Fig. S9. Amine-catalyzed second-order kinetic plots of blocking reaction of polyisocyanate with 3-chloro-4-hydroxybenzoate.

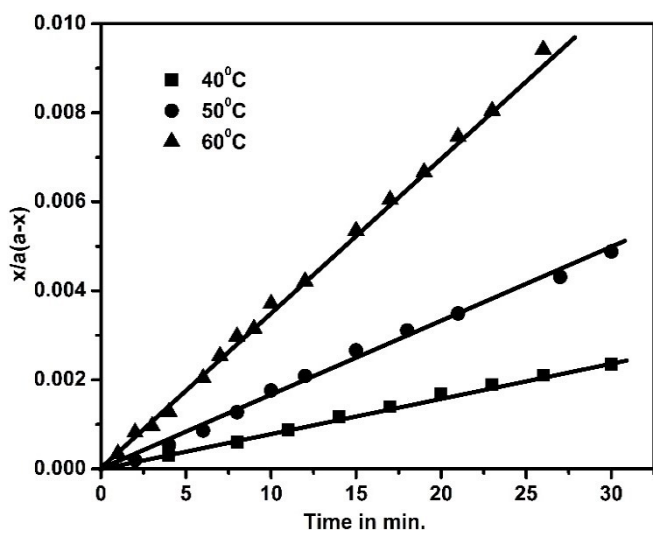


Fig. S10. Amine-catalyzed second-order kinetic plots of blocking reaction of polyisocyanate with 2-chloro-4-nitrophenol.

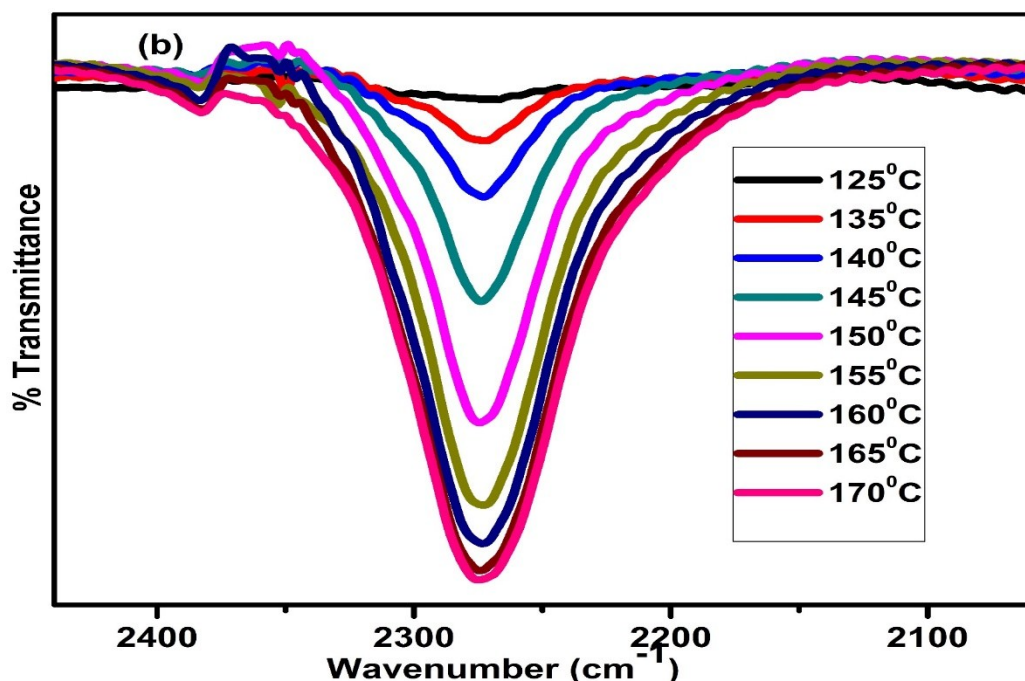
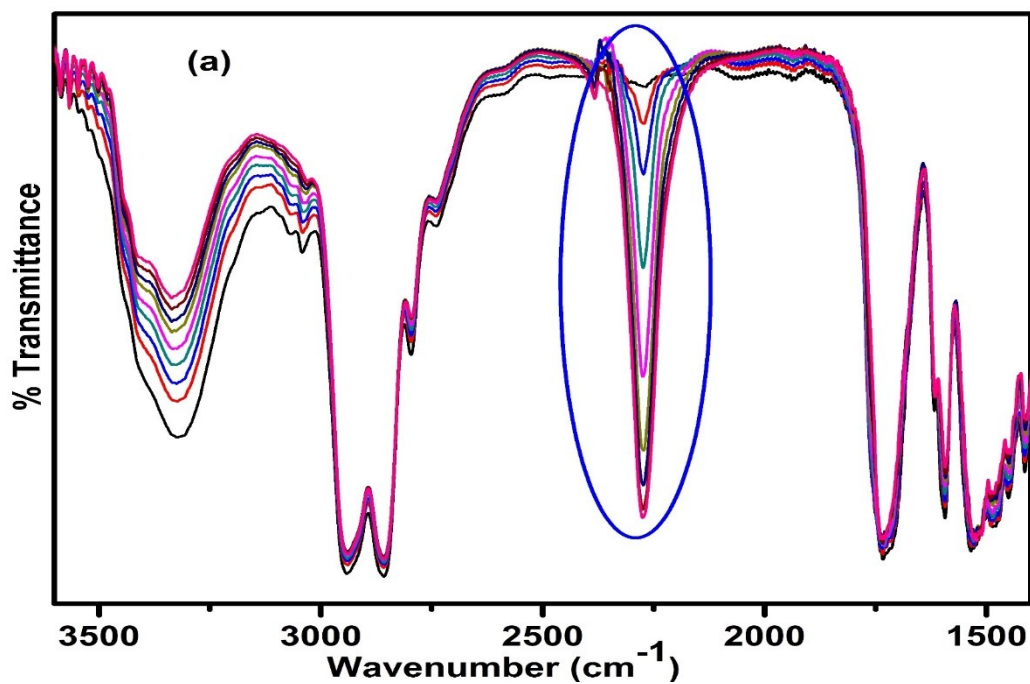


Fig. S11. FT-IR spectra of phenol -blocked polyisocyanate recorded at (a) different temperatures. (b) Zoomed range of isocyanate absorption region.

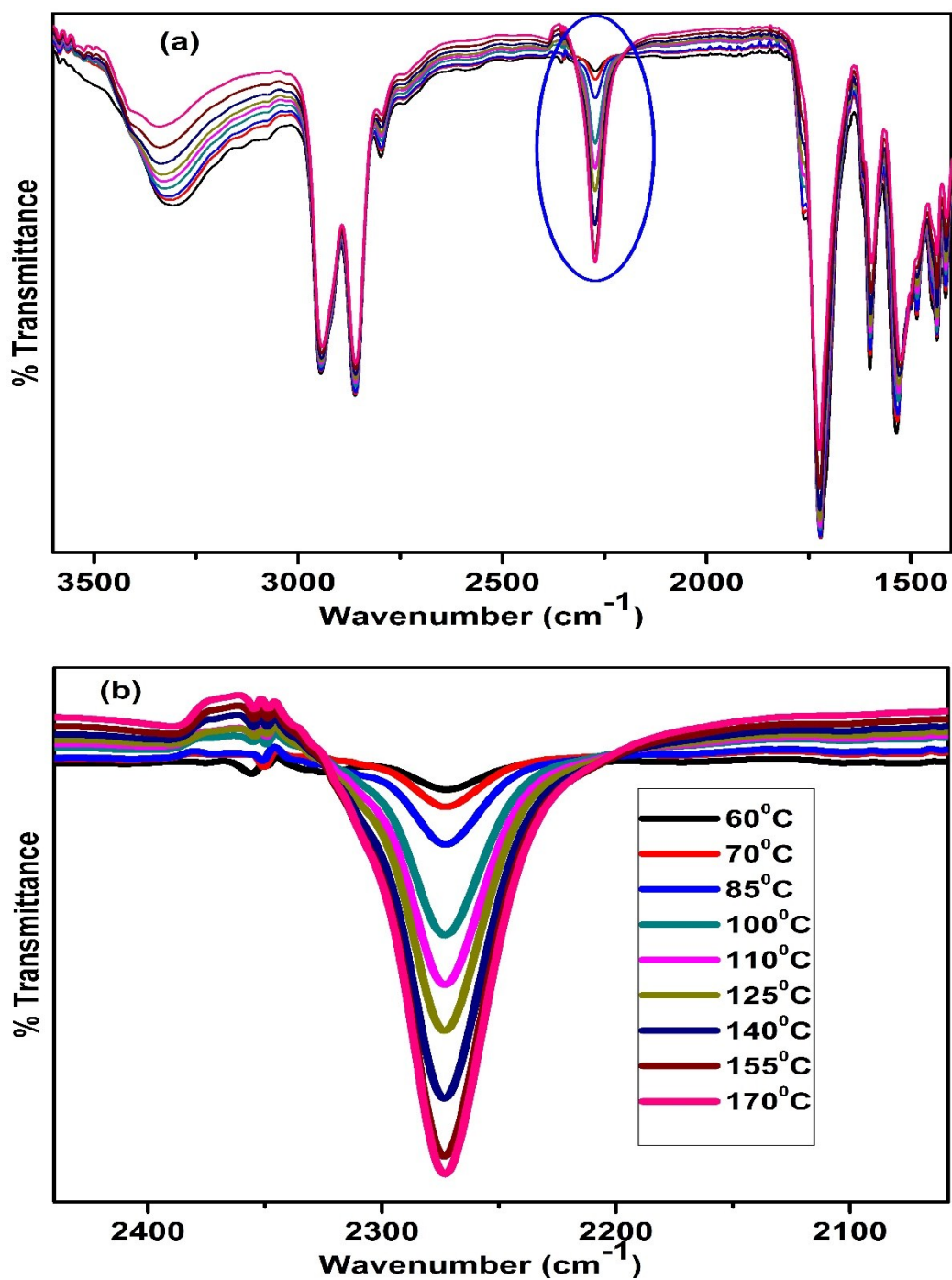


Fig. S12. FT-IR spectra of methyl 3-chloro-4-hydroxybenzoate-blocked polyisocyanate recorded at (a) different temperatures. (b) Zoomed range of isocyanate absorption region.

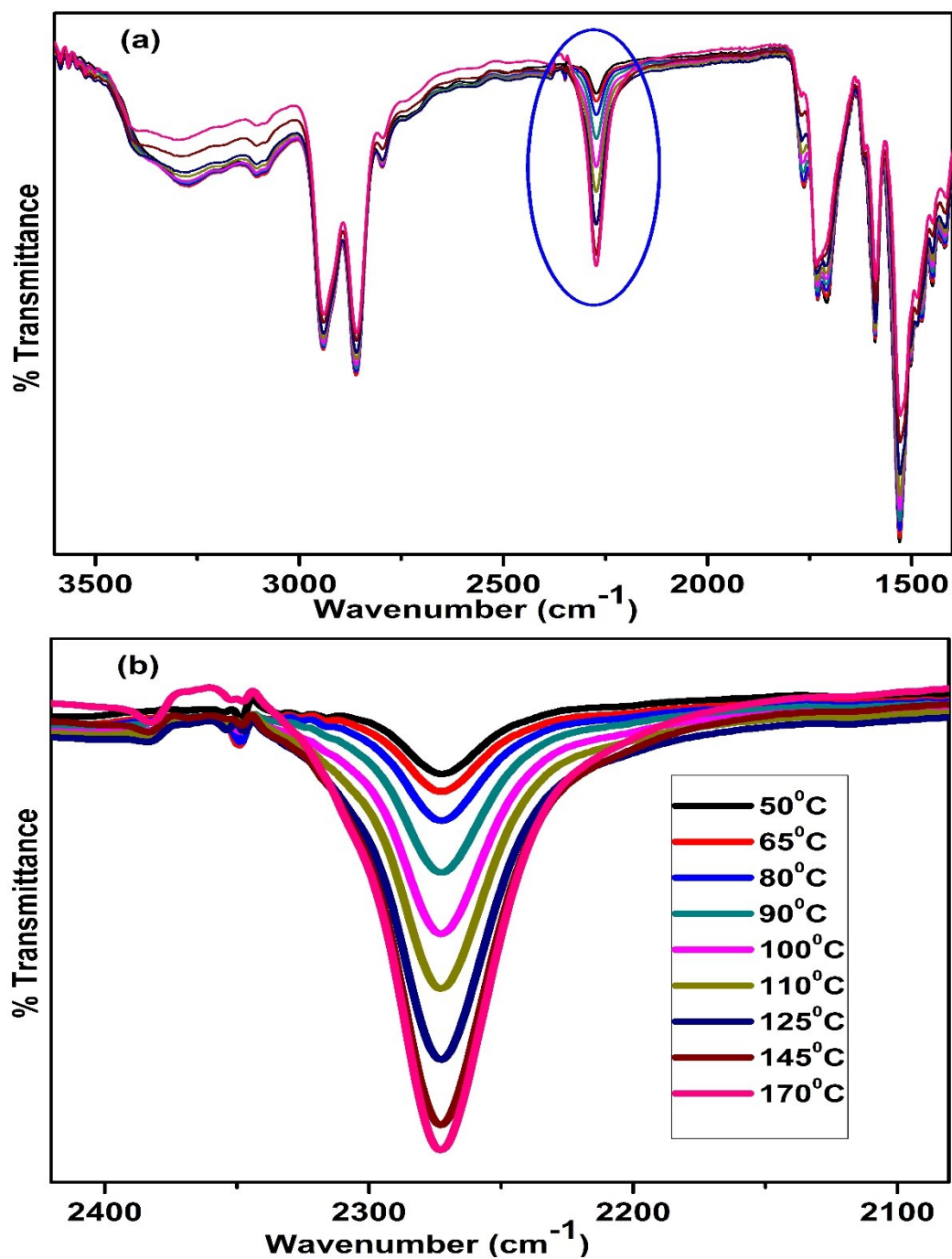


Fig. S13. FT-IR spectra of 2-chloro-4-nitrophenol -blocked polyisocyanate recorded at (a) different temperatures. (b) Zoomed range of isocyanate absorption region.

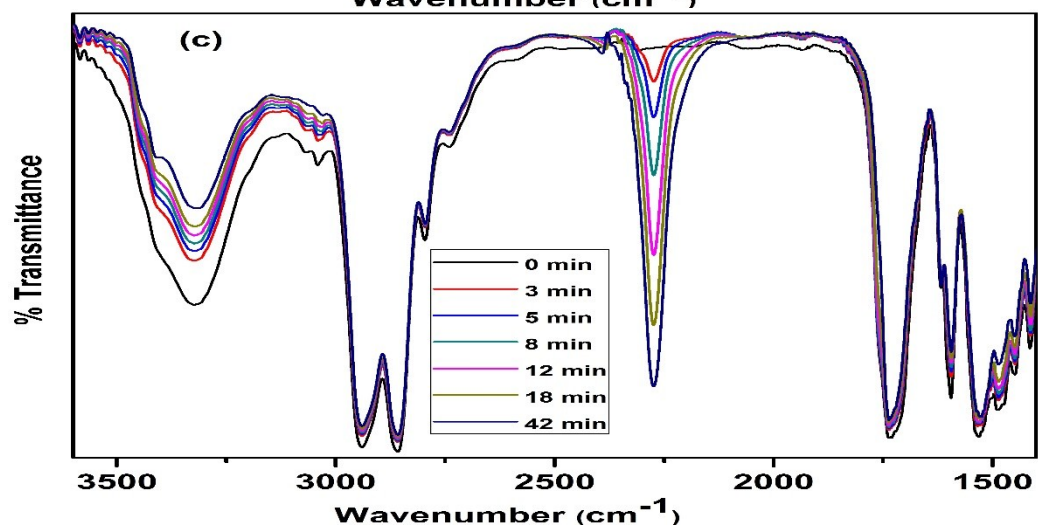
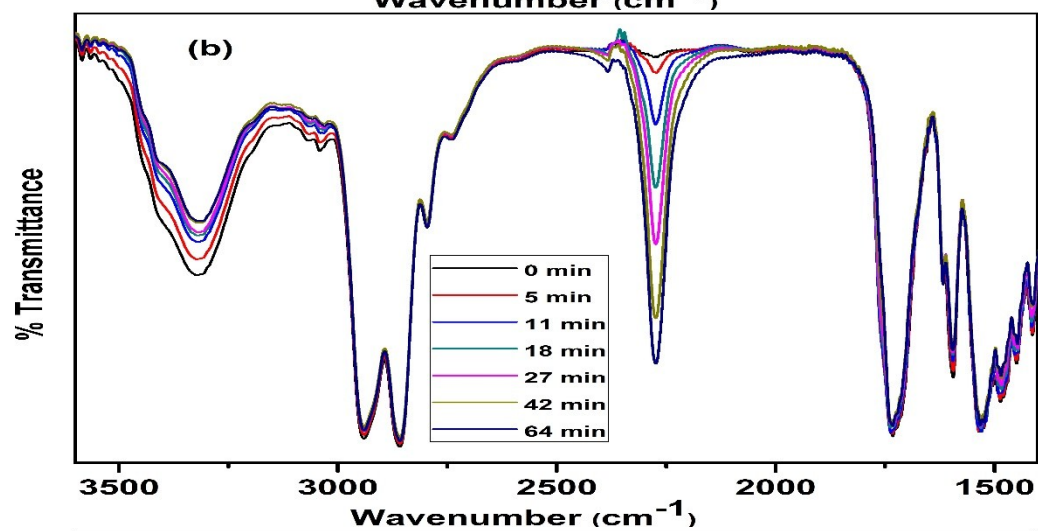
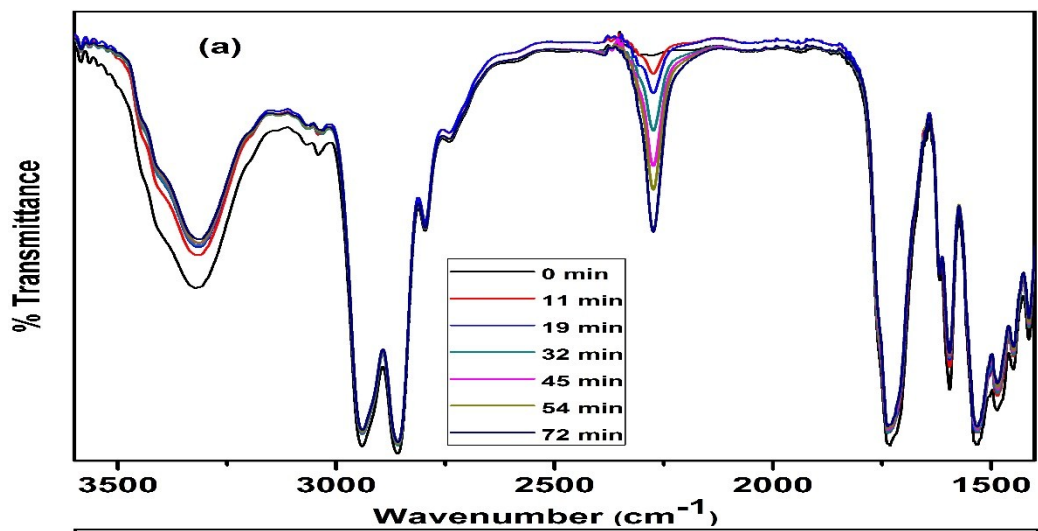


Fig. S14. FT-IR spectra recorded for different time intervals at isothermal conditions for the deblocking reaction of phenol -blocked polyisocyanate: (a) 110 °C (b) 120 °C and (c) 130 °C.

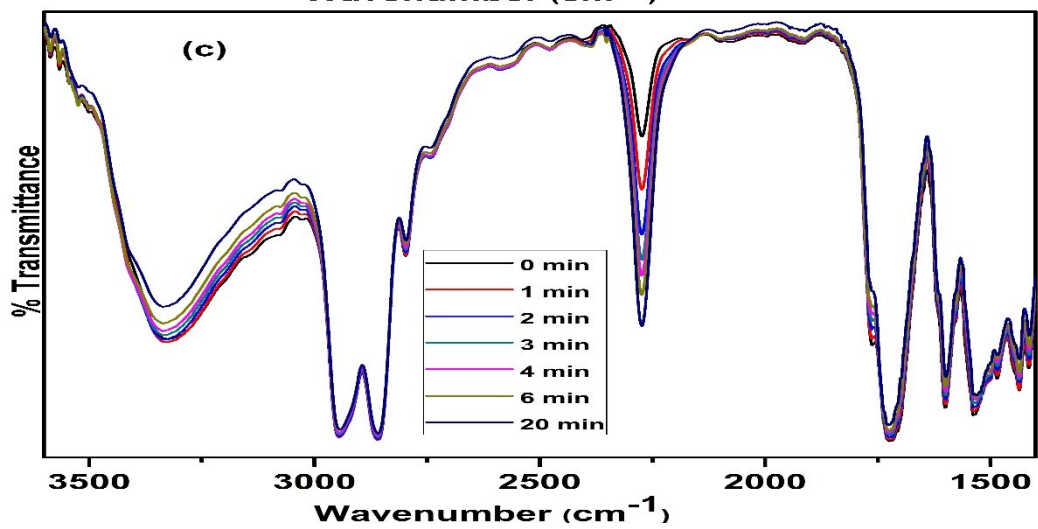
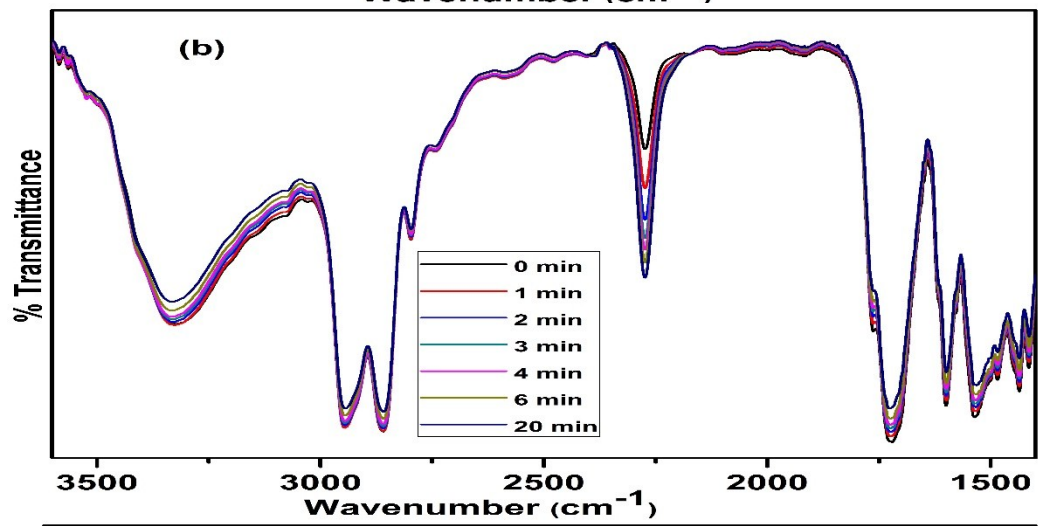
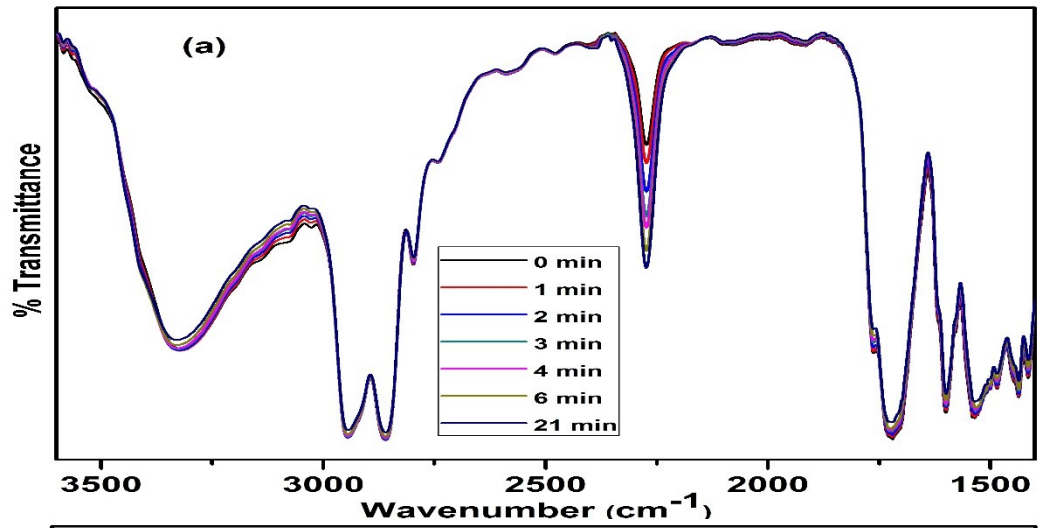


Fig. S15. FT-IR spectra recorded for different time intervals at isothermal conditions for the deblocking reaction of methyl 3-chloro-4-hydroxybenzoate -blocked polyisocyanate: (a) 90 °C (b) 100 °C and (c) 110 °C.

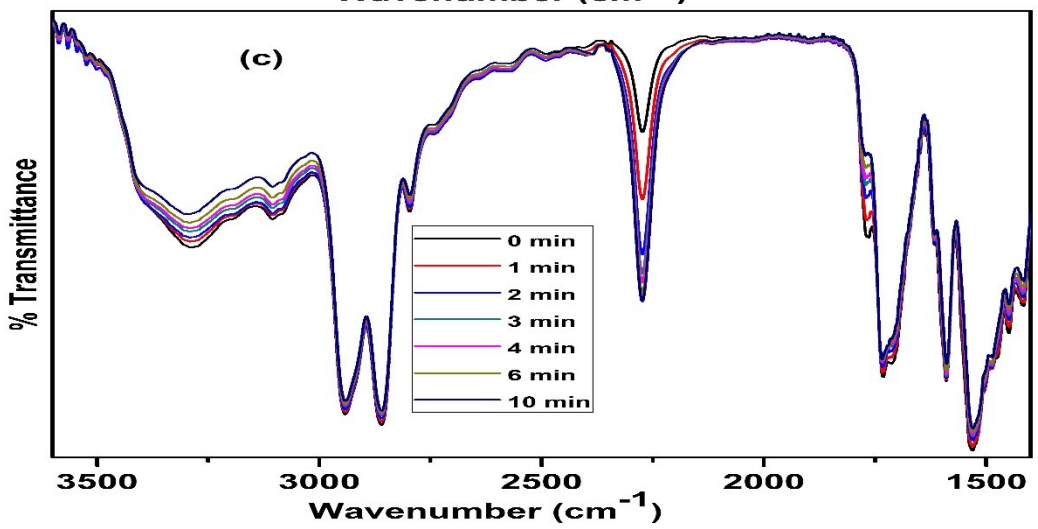
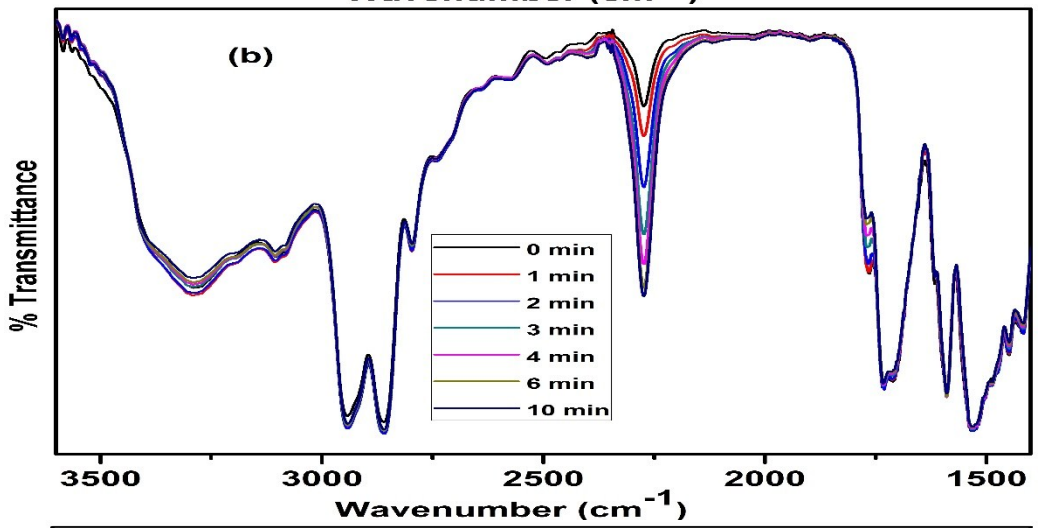
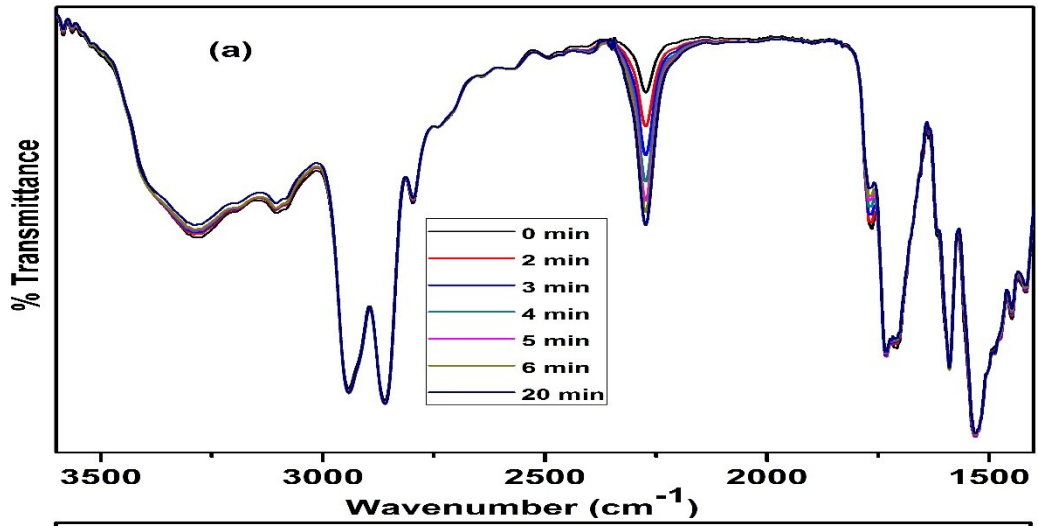


Fig. S16. FT-IR spectra recorded for different time intervals at isothermal conditions for the deblocking reaction of 2-chloro-4-nitrophenol -blocked polyisocyanate: (a) 90 °C (b) 100 °C and (c) 110 °C.

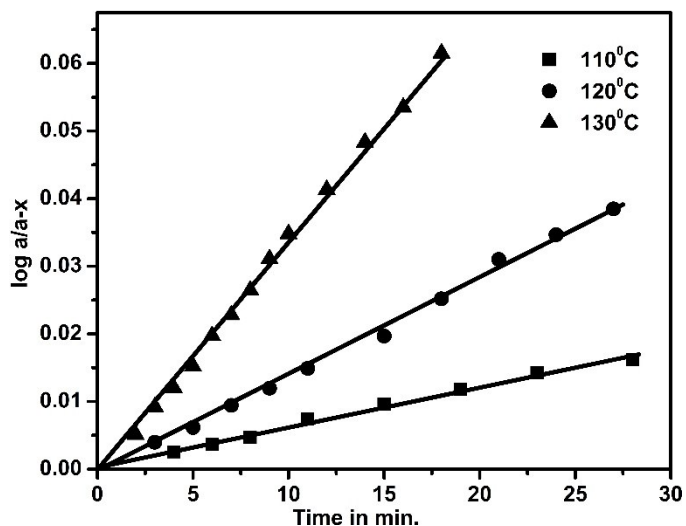


Fig. S17. Amine-catalyzed first-order kinetic plots of deblocking reaction of phenol-blocked polyisocyanate.

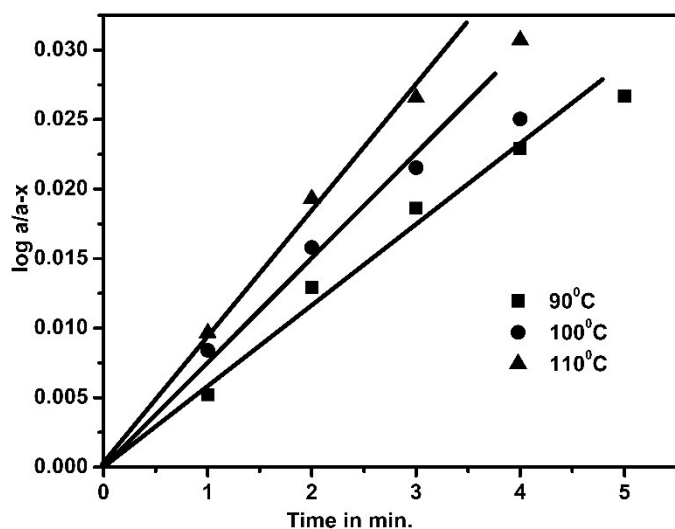


Fig. S18. Amine-catalyzed first-order kinetic plots of deblocking reaction of 3-chloro-4-hydroxybenzoate-blocked polyisocyanate.

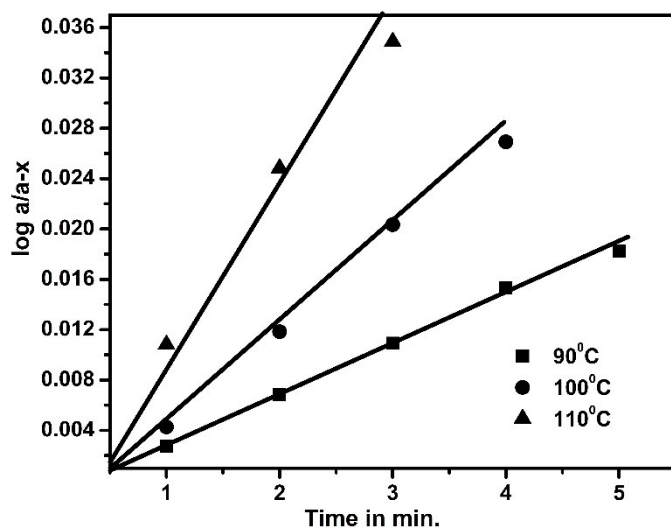


Fig. S19. Amine-catalyzed first-order kinetic plots of deblocking reaction of 2-chloro-4-nitrophenol-blocked polyisocyanate.

