SUPPORTING INFORMATION

Forward and reverse reactions of N-methylaniline-blocked polyisocyanates: a clear step into double Arrhenius plots and equilibrium temperature of thermally reversible reactions.

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Electronic supplementary information(ESI) available : FT-IR spectra of N-methylaniline-blocked polyisocyanates recorded at dynamic condition for deblocking reaction, FT-IR spectra of N-methylaniline-blocked polyisocyanates recorded at isothermal condition for blocking and deblocking reaction, kinetic plots of second order blocking reaction and kinetic plots of first order deblocking reaction.

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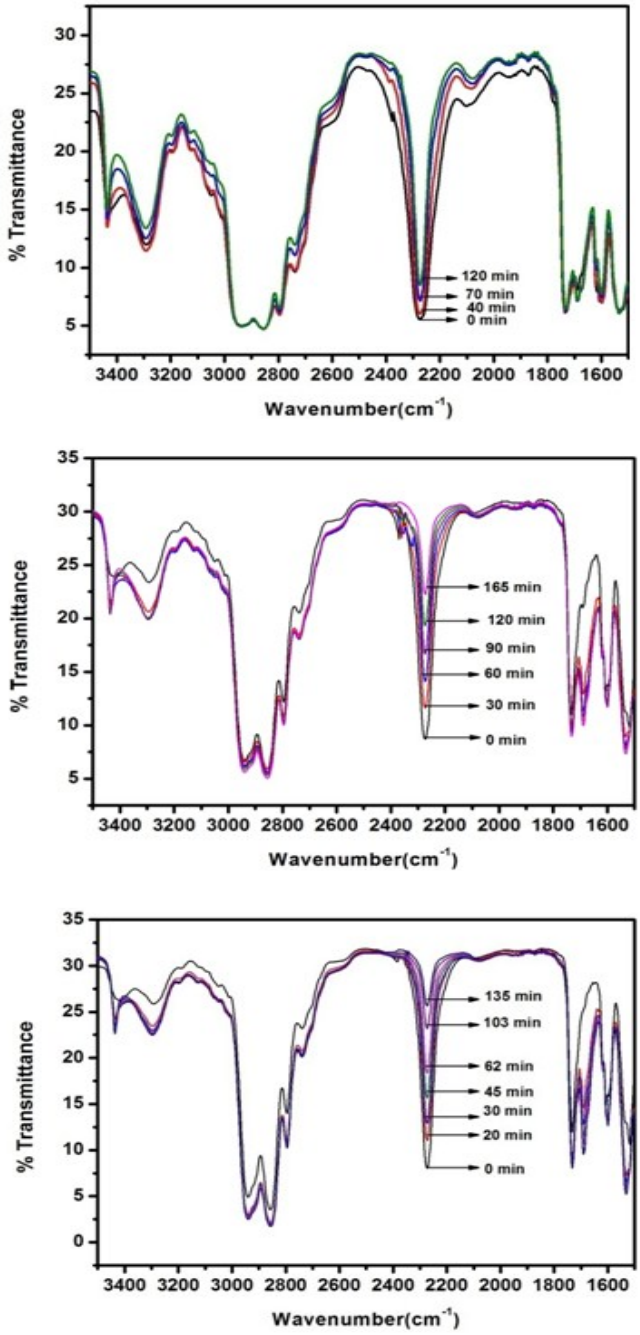

Figure S1.FT-IR spectra recorded for different time intervals under isothermal condition for the blocking reaction of polyisocyanate with N-methyl-o-toluidine (a) 40^{o}C (b) 50^{o}C (c) 60^{o}C.

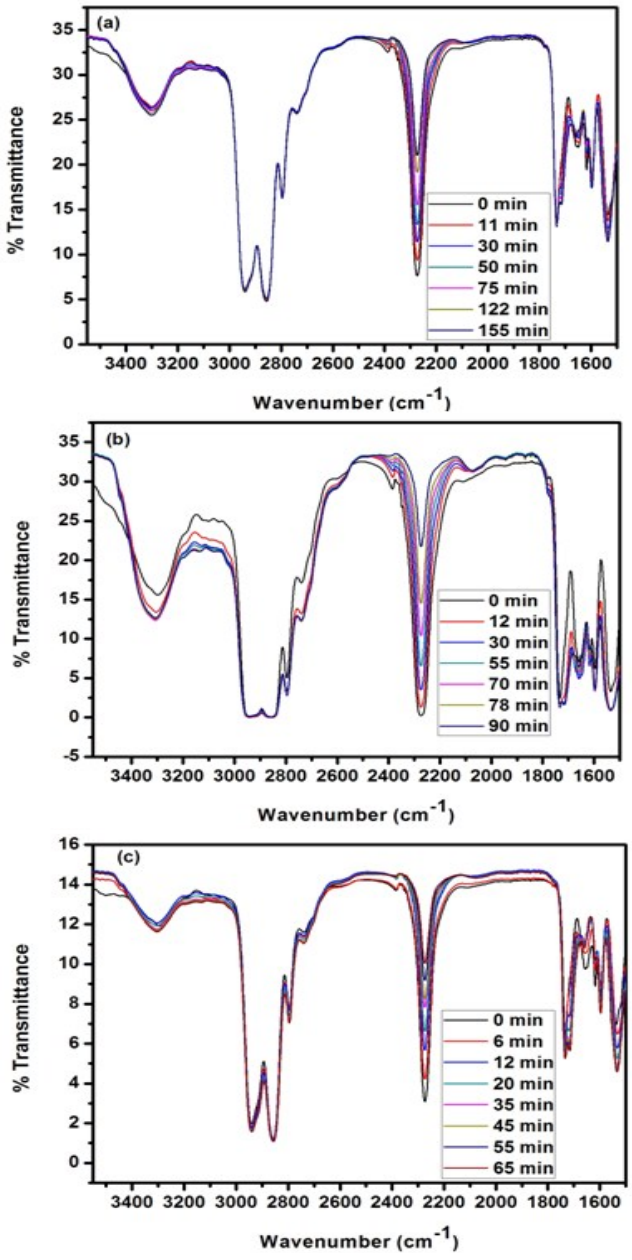

Figure S2.FT-IR spectra recorded for different time intervals under isothermal condition for the blocking reaction of polyisocyanate with N-methyl-o-anisidine (a) 30^0C (b) 40^0C (c) 50^0C

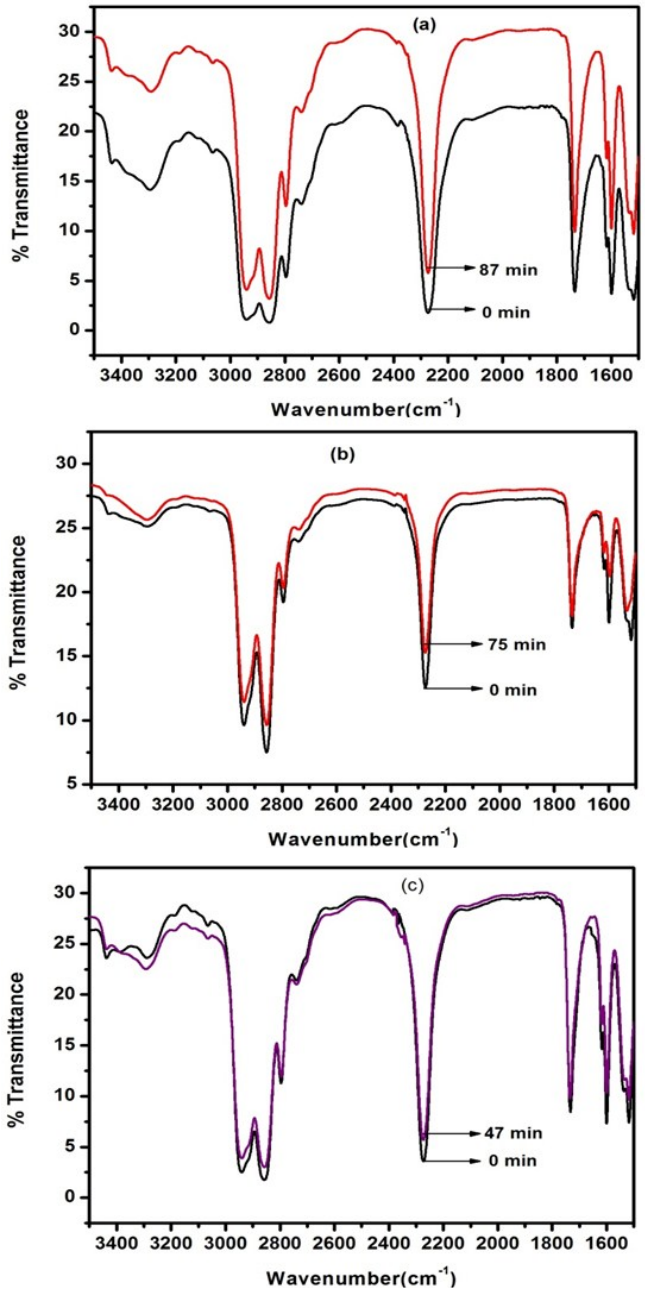

Figure S3.FT-IR spectra recorded for different time intervals under isothermal condition for the blocking reaction of polyisocyanate with 2-chloro-N-methylaniline (a) 40^0C (b) 50^0C (c) 60^0C

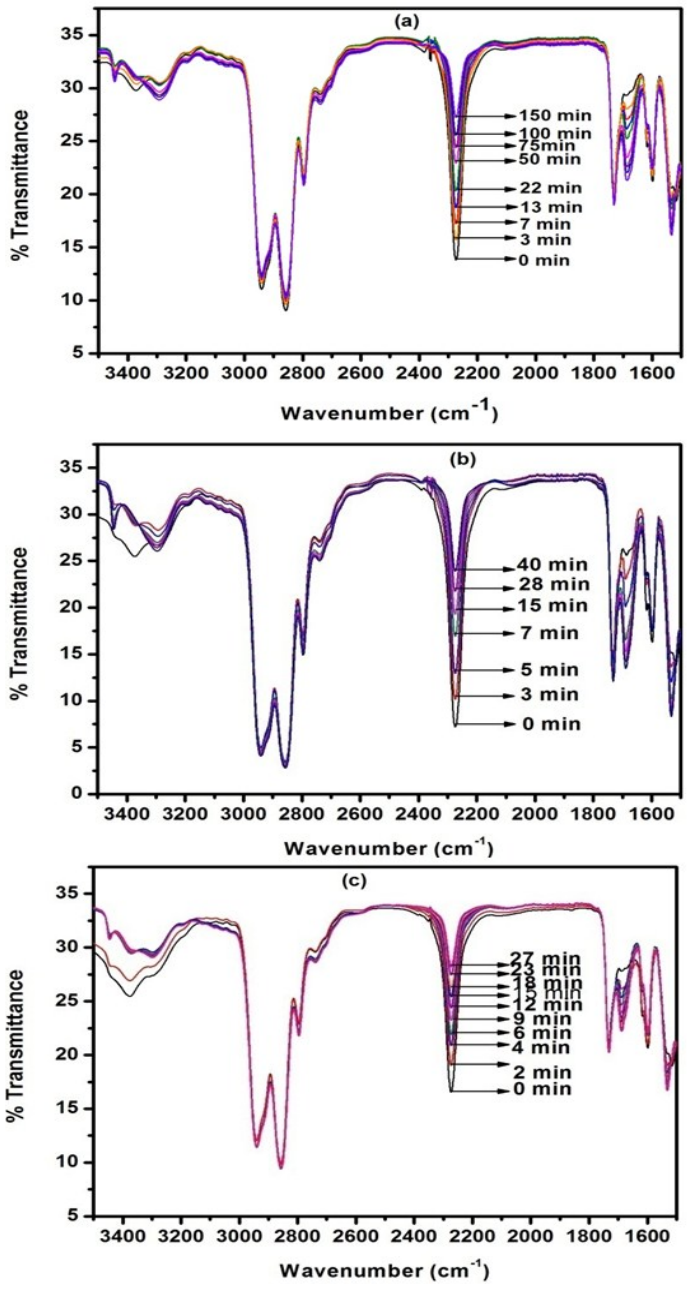

Figure S4.FT-IR spectra recorded for different time intervals under isothermal condition for the blocking reaction of polyisocyanate with 4-chloro-N-methylaniline (a) 30^0C (b) 40^0C (c) 50^0C

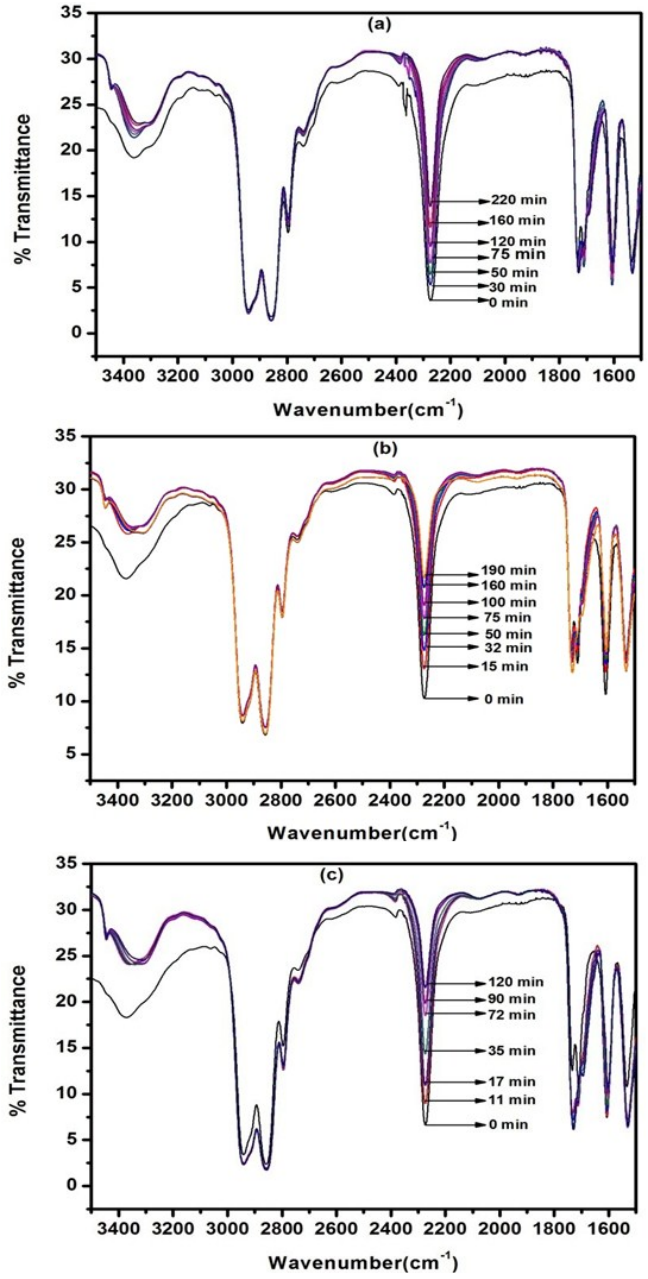

Figure S5.FT-IR spectra recorded for different time intervals under isothermal condition for the blocking reaction of polyisocyanate with methyl 4-methylamino)benzoate (a) 50^0C (b) 60^0C (c) 70^0C.

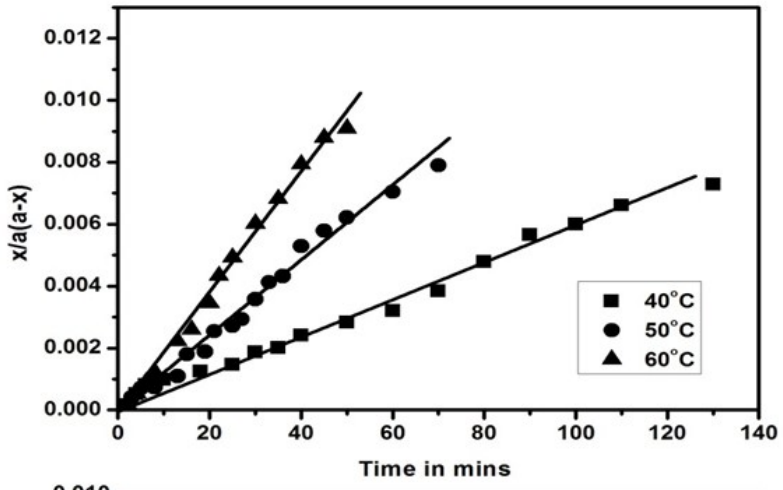

Figure S6. Second-order kinetic plots of blocking reaction of polyisocyanate with N-methyl-o-toluidine.

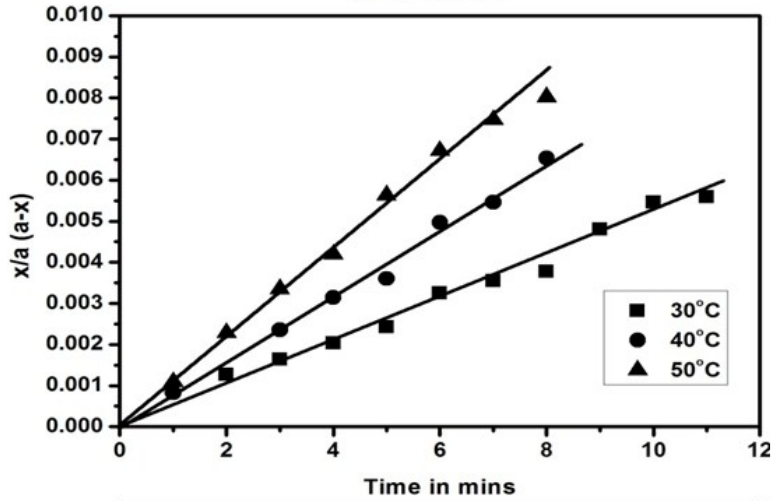

Figure S7. Second-order kinetic plots of blocking reaction of polyisocyanate with N-methyl-o-anisidine.

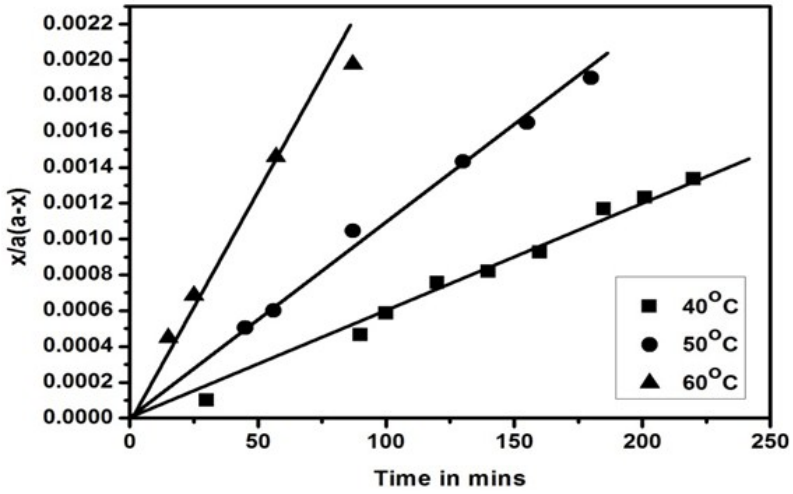

Figure S8. Second-order kinetic plots of blocking reaction of polyisocyanate with 2-chloro-N-methylaniline.

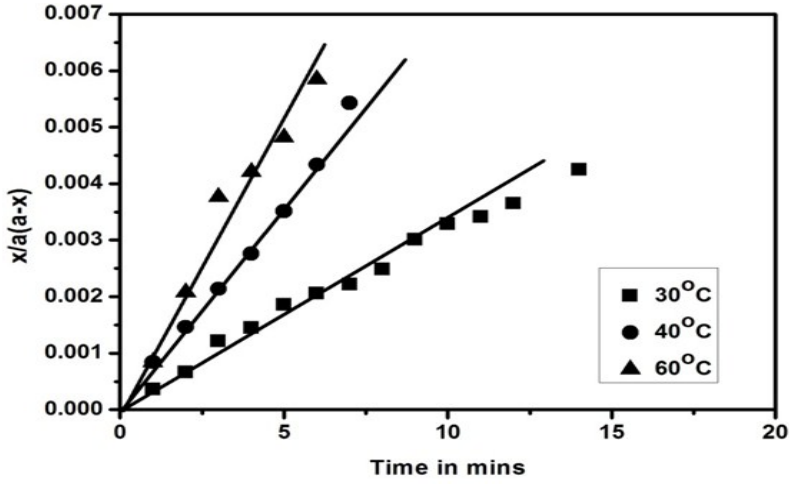

Figure S9. Second-order kinetic plots of blocking reaction of polyisocyanate with 4-chloro-N-methylaniline

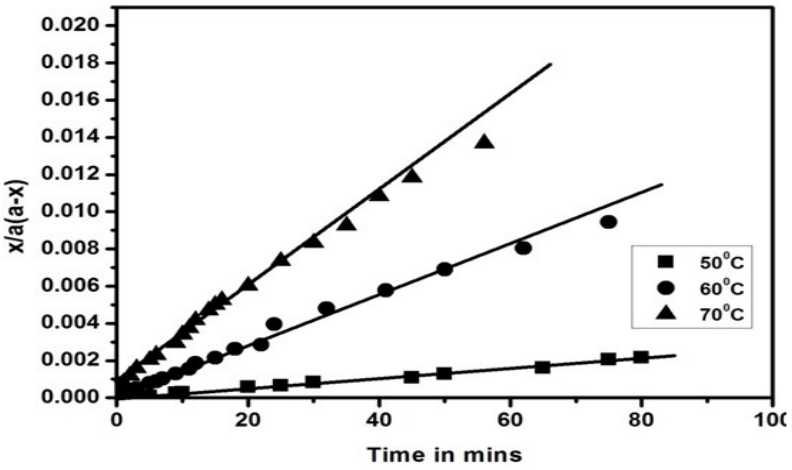

Figure S10. Second-order kinetic plots of blocking reaction of polyisocyanate with methyl 4-(methylamino)benzoate.

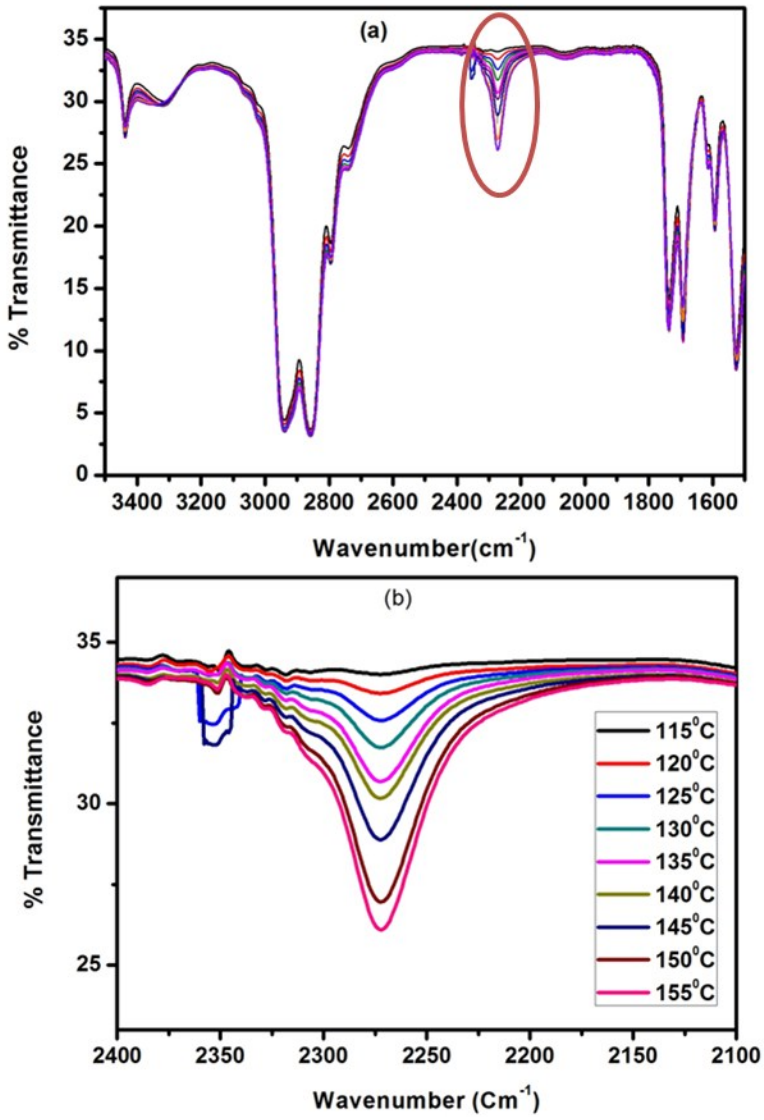

Figure S11. FT-IR spectra of N-methyl-o-toluidine -blocked polyisocyanate recorded at (a) different temperatures (b) zoomed range of isocyanate absorption region.

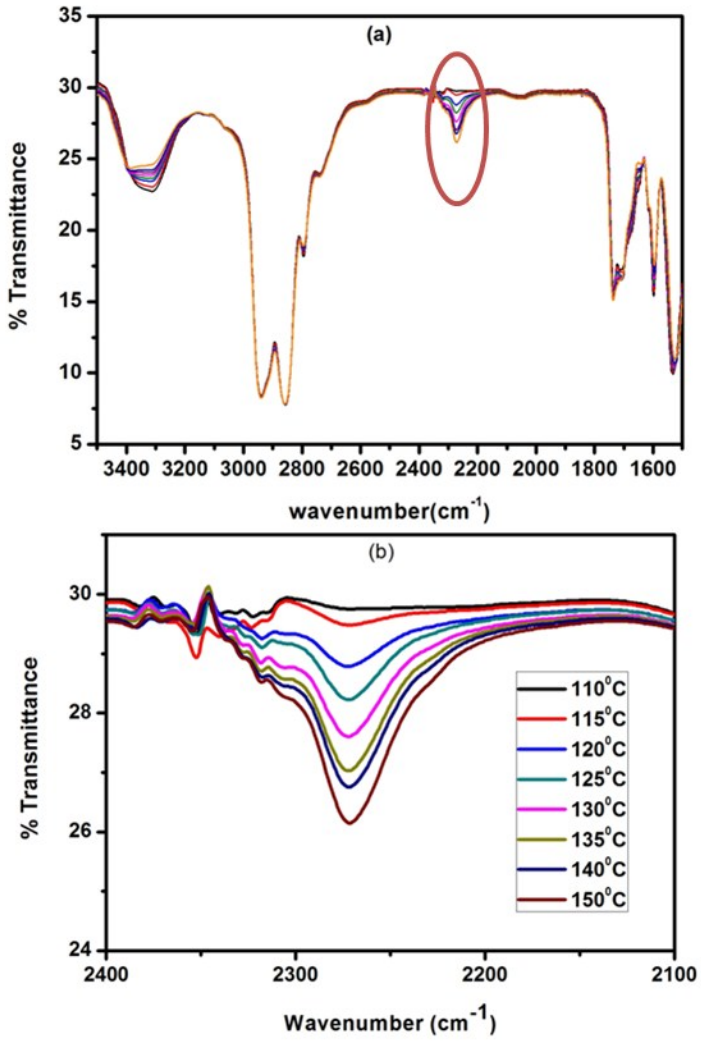

Figure S12. FT-IR spectra of N-methyl-o-anisidine-blocked polyisocyanate recorded at (a) different temperatures (b) zoomed range of isocyanate absorption region.

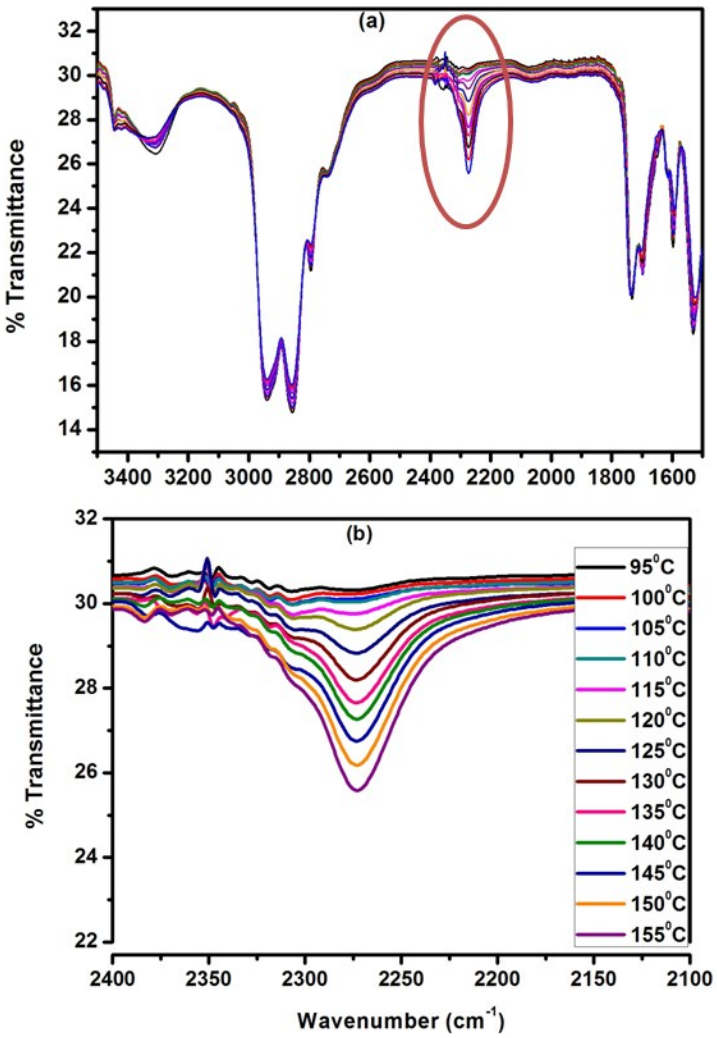

Figure S13. FT-IR spectra of 2-chloro-N-methylaniline-blocked polyisocyanate recorded at (a) different temperatures (b) zoomed range of isocyanate absorption region.

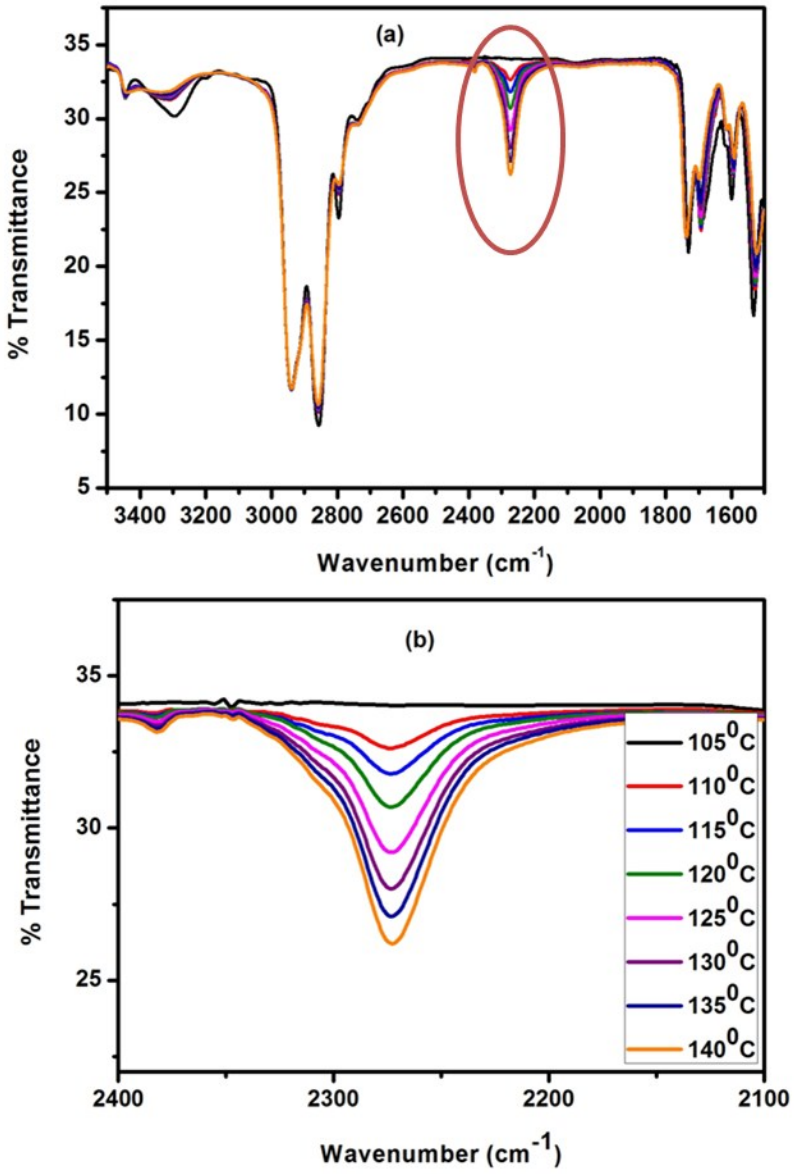

Figure S14. FT-IR spectra of 4-chloro-N-methylaniline-blocked polyisocyanate recorded at (a) different temperatures (b) zoomed range of isocyanate absorption region.

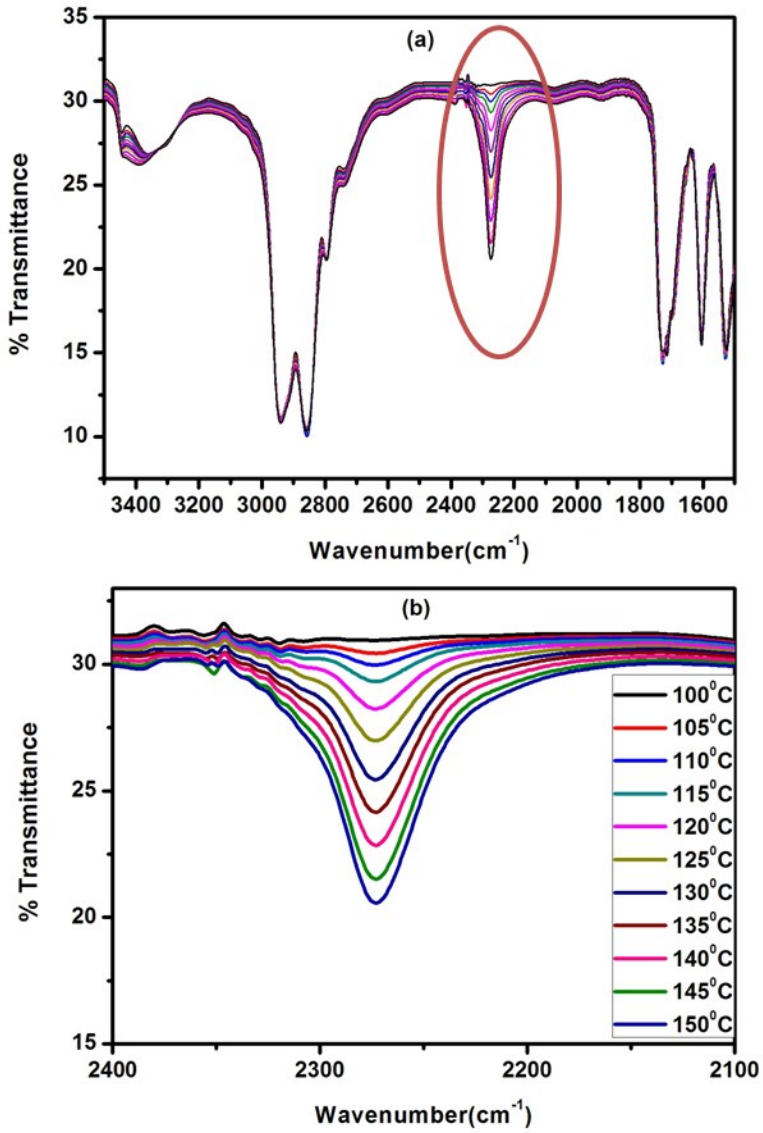

Figure S15. FT-IR spectra of methyl 4-(methylamino)benzoate-blocked polyisocyanate recorded at (a) different temperatures (b) zoomed range of isocyanate absorption region.

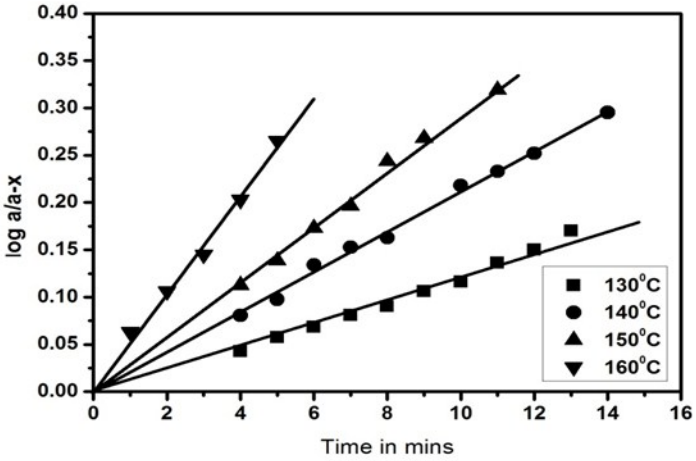

Figure 16. First-order kinetic plots of the deblocking reaction of N-methyl-o-toluidine-blocked polyisocyanate.

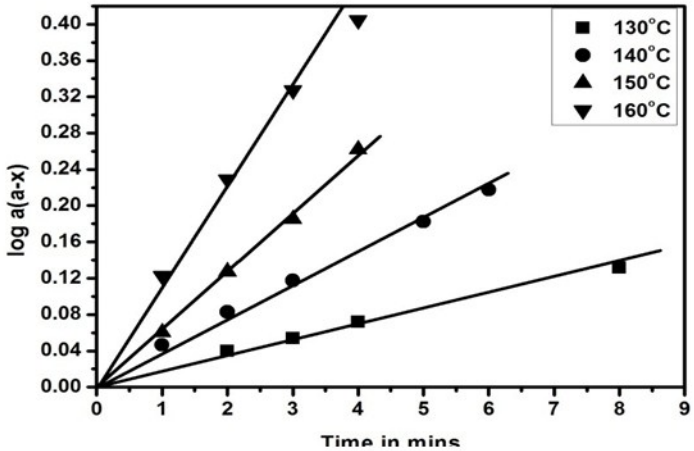

Figure 17. First-order kinetic plots of the deblocking reaction of N-methyl-o-anisidine-blocked polyisocyanate.

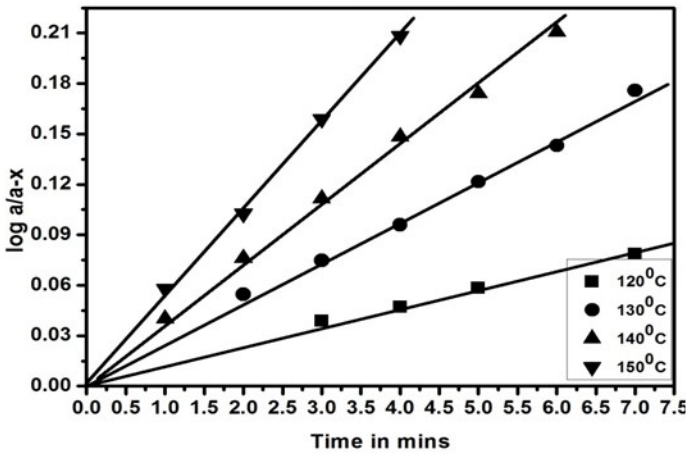

Figure 18. First-order kinetic plots of the deblocking reaction of 2-chloro-N-methylaniline-blocked polyisocyanate.

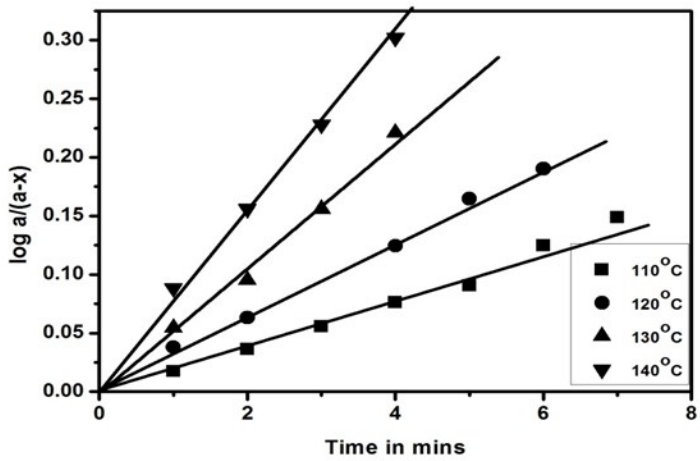

Figure 19. First-order kinetic plots of the deblocking reaction of 4-chloro-N-methylaniline-blocked polyisocyanate.

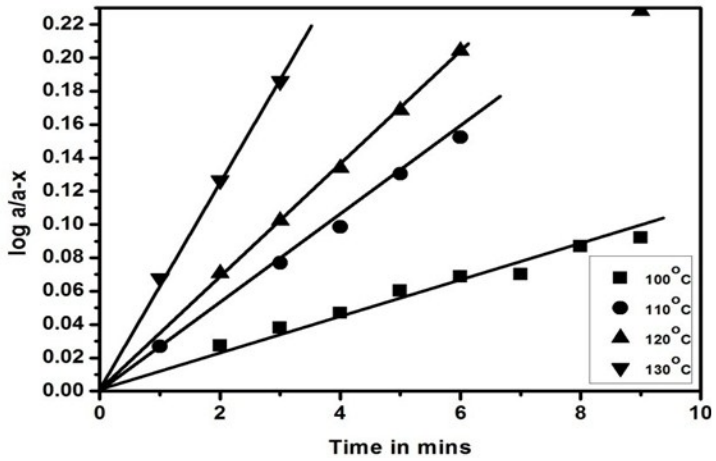

Figure 20. First-order kinetic plots of the deblocking reaction of methyl 4-(methylamino)benzoate-blocked polyisocyanate.

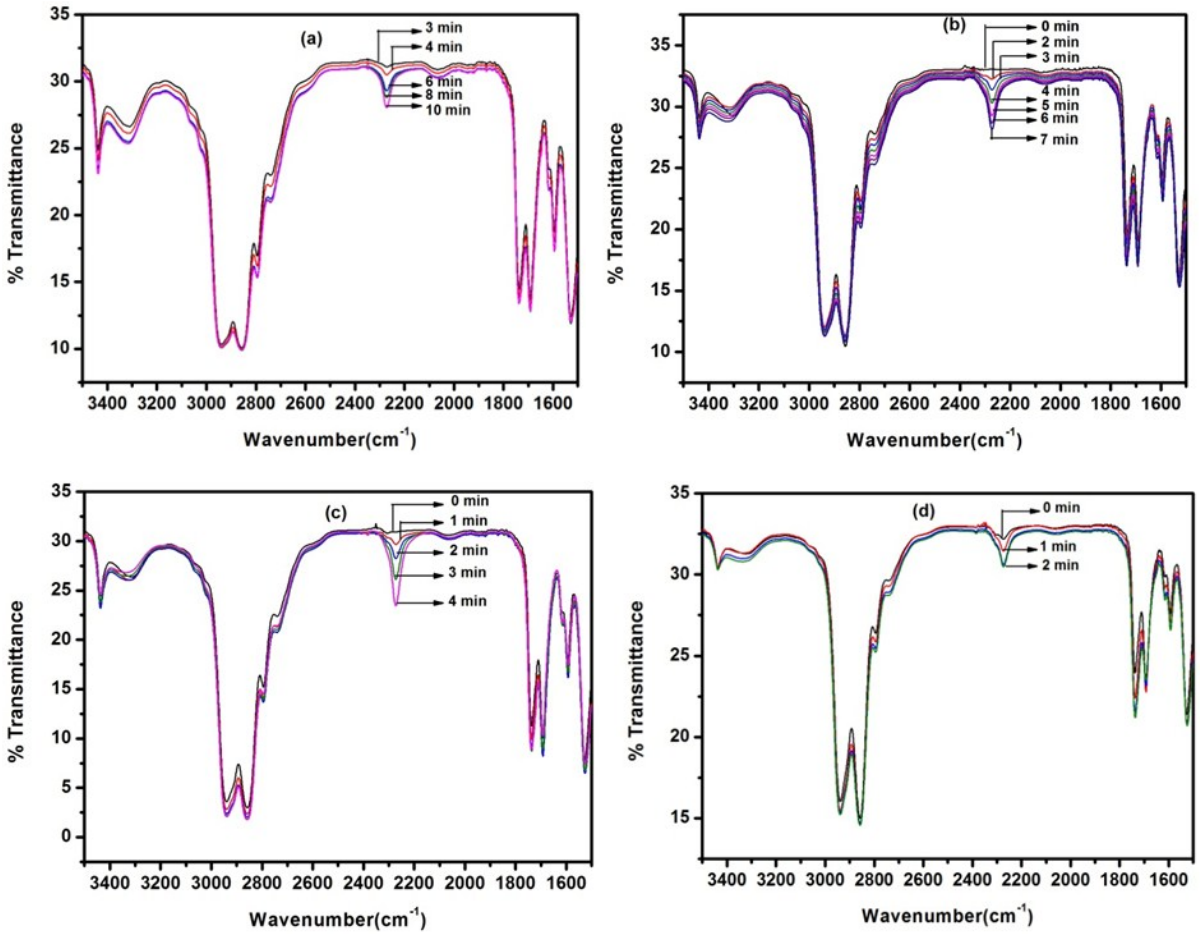

Figure S21. FT-IR spectra recorded for different time intervals under isothermal condition for the deblocking reaction of N-methyl-o-toluidine-blocked polyisocyanate: (a) 130^0C (b) 140^0C (c) 150^0C (d) 160^0C.

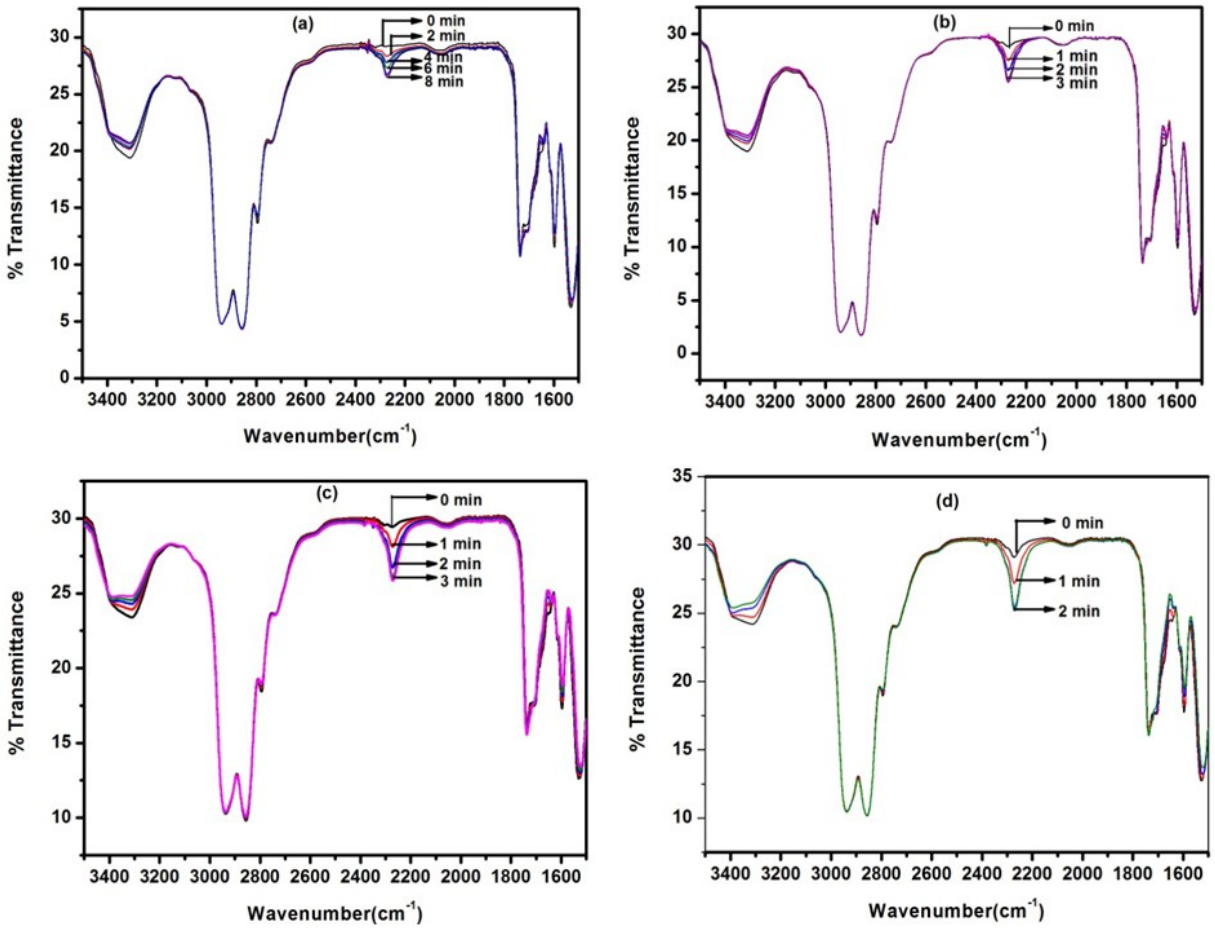

Figure S22. FT-IR spectra recorded for different time intervals under isothermal condition for the deblocking reaction of N-methyl-o-anisidine-blocked polyisocyanate: (a) 130^{0}C (b) 140^{0}C (c) 150^{0}C (d) 160^{0}C

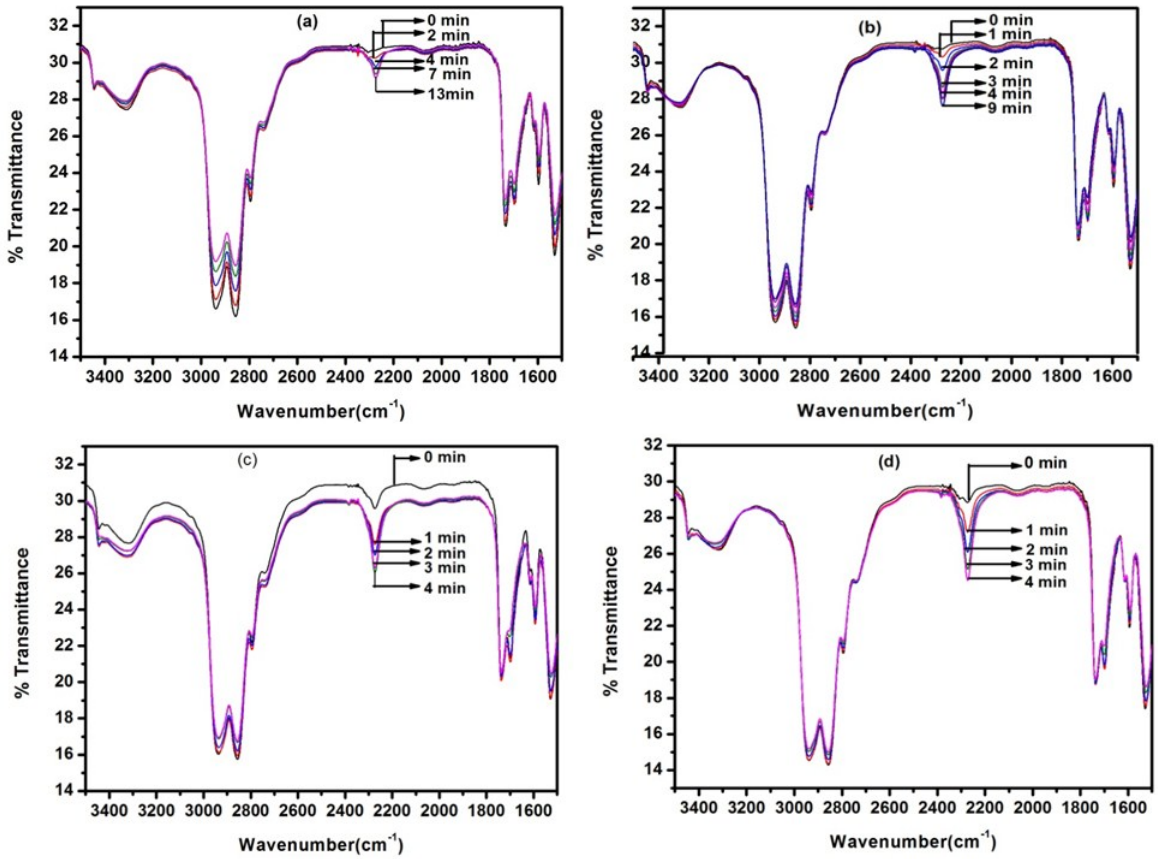

Figure S23. FT-IR spectra recorded for different time intervals under isothermal condition for the deblocking reaction of 2-chloro-N-methylaniline-blocked polyisocyanate: (a) 120^0C (b) 130^0C (c) 140^0C (d) 150^0C

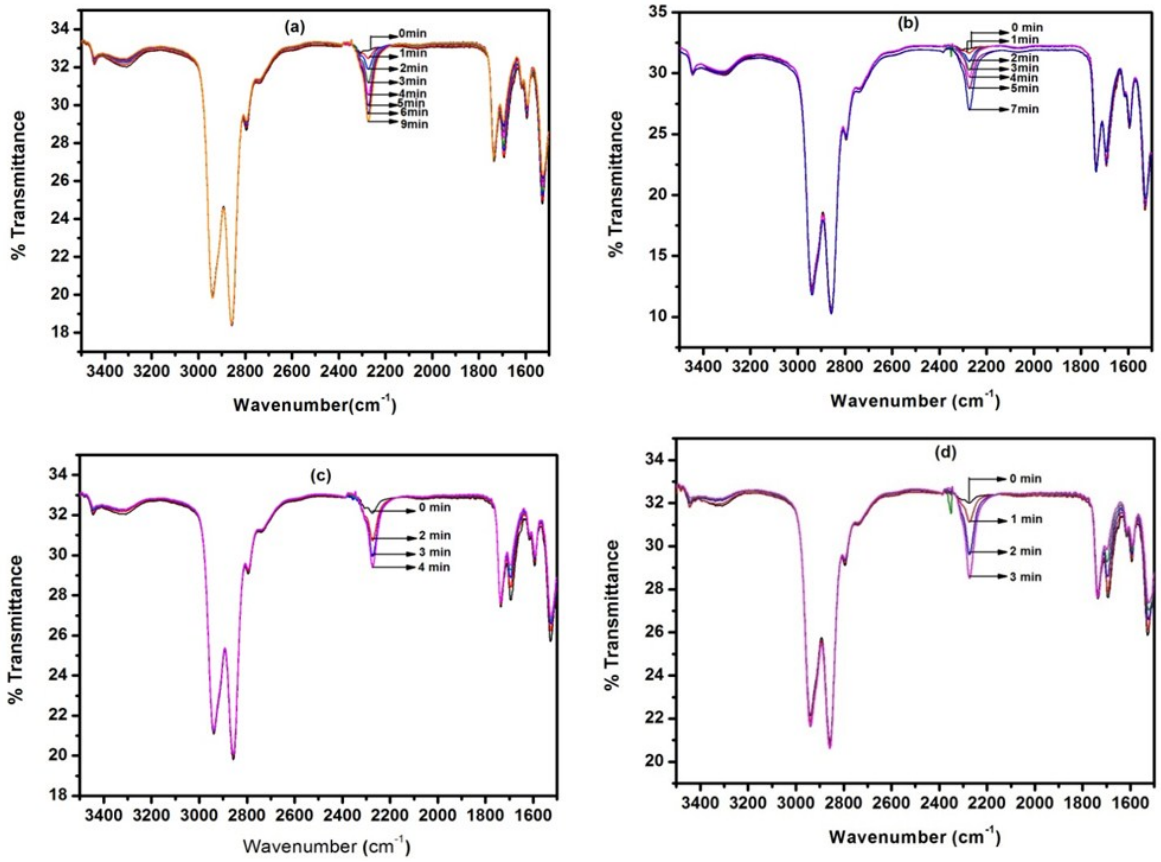

Figure S24. FT-IR spectra recorded for different time intervals under isothermal condition for the deblocking reaction of 4-chloro-N-methylaniline-blocked polyisocyanate: (a) 110^0C (b) 120^0C (c) 130^0C (d) 140^0C

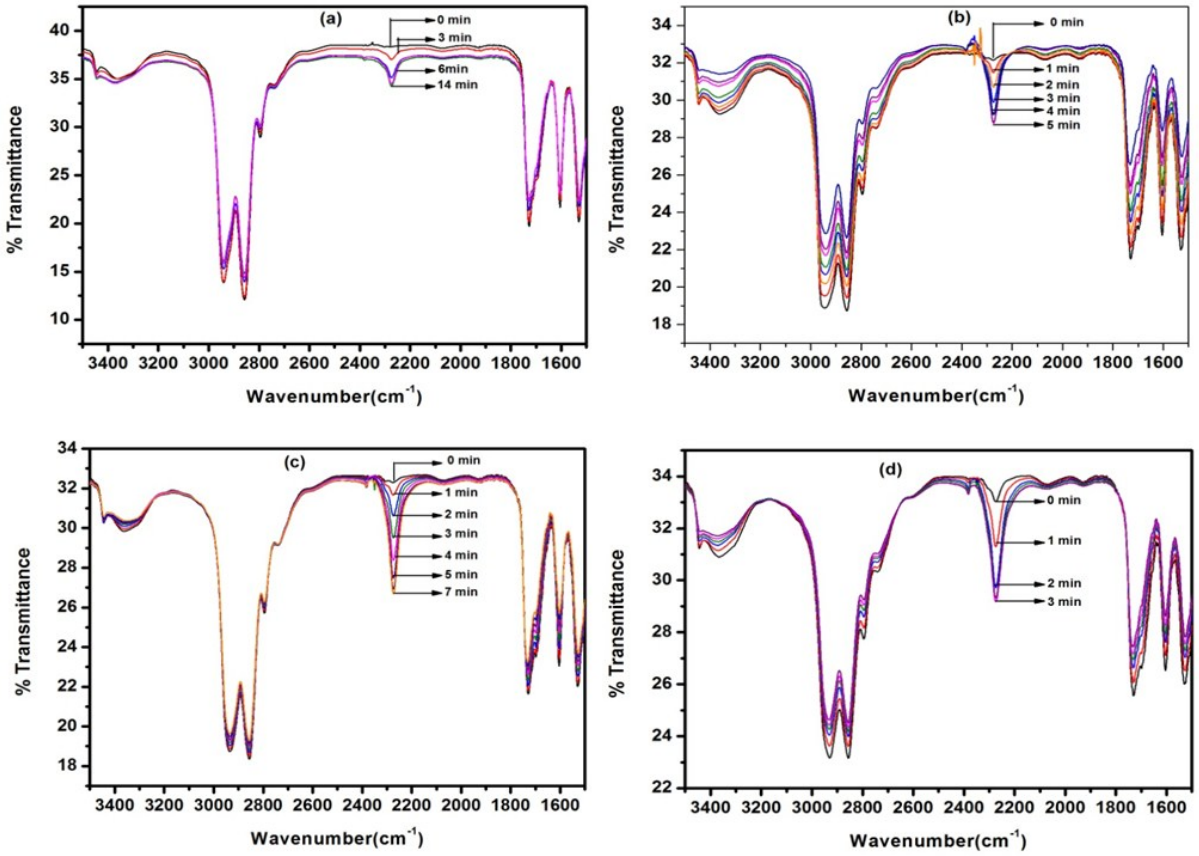

Figure S25. FT-IR spectra recorded for different time intervals under isothermal condition for the deblocking reaction of methyl 4-(methylamino)benzoate-blocked polyisocyanate: (a) 100^0C (b) 110^0C (c) 120^0C d) 130^0C