

Preparation and Evaluation of New Nano-Composites Based on PVA and Thiosemicarbazide for the Enhancement of Iraqi Asphalt Specifications

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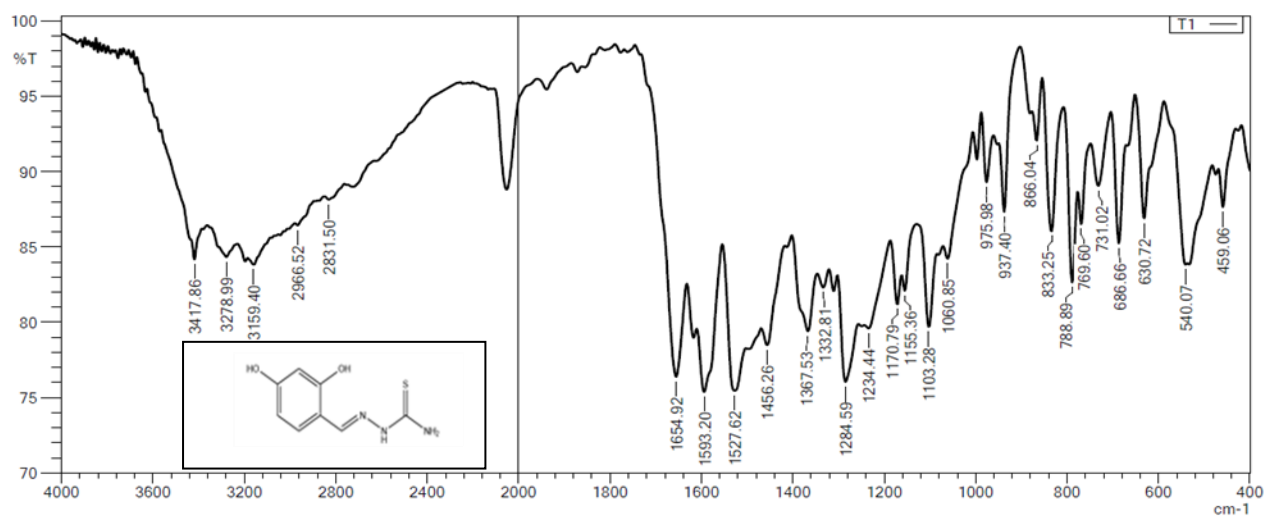


Fig. S1. FT-IR of Compound (T1).

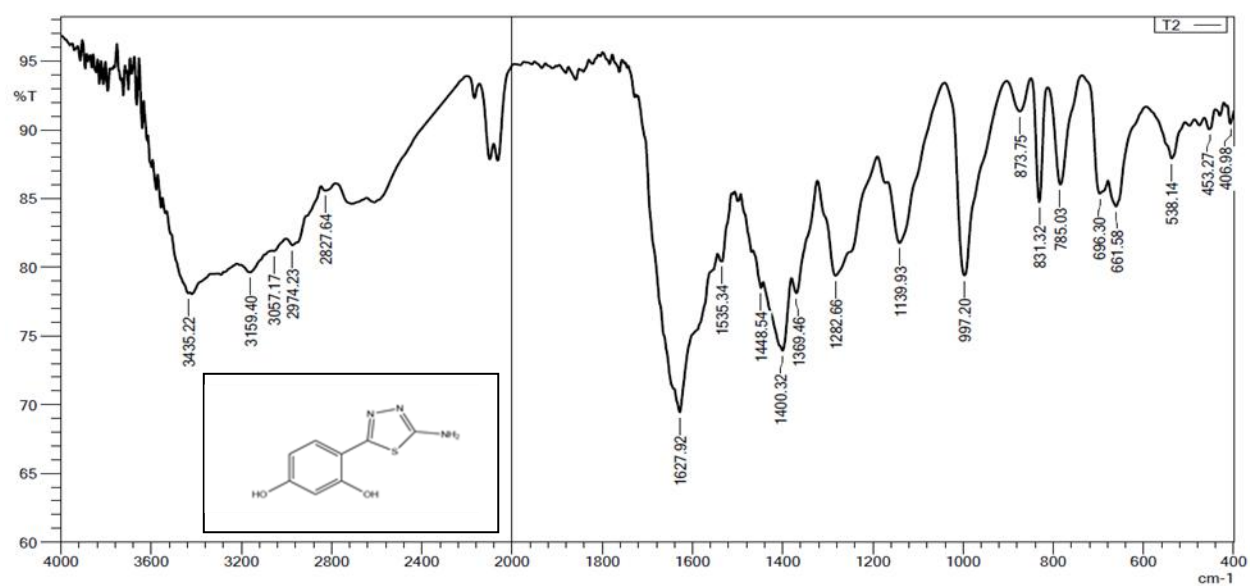


Fig. S2. FT-IR of Compound(T2).

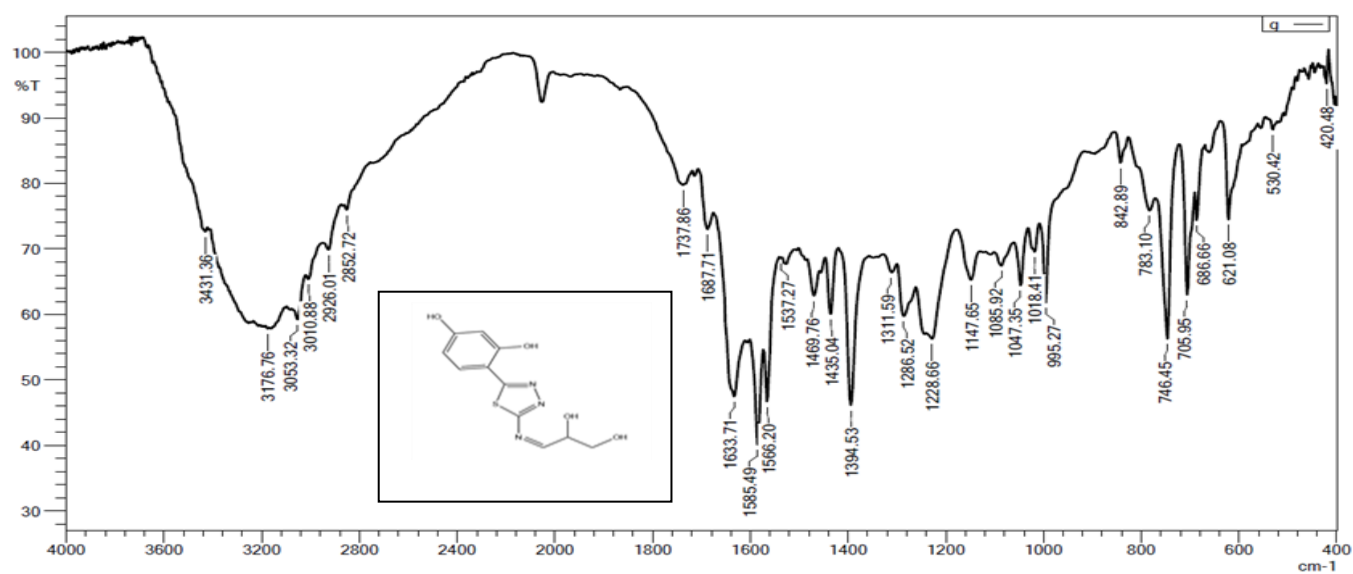


Fig. S3. FT-IR of Compound (g).

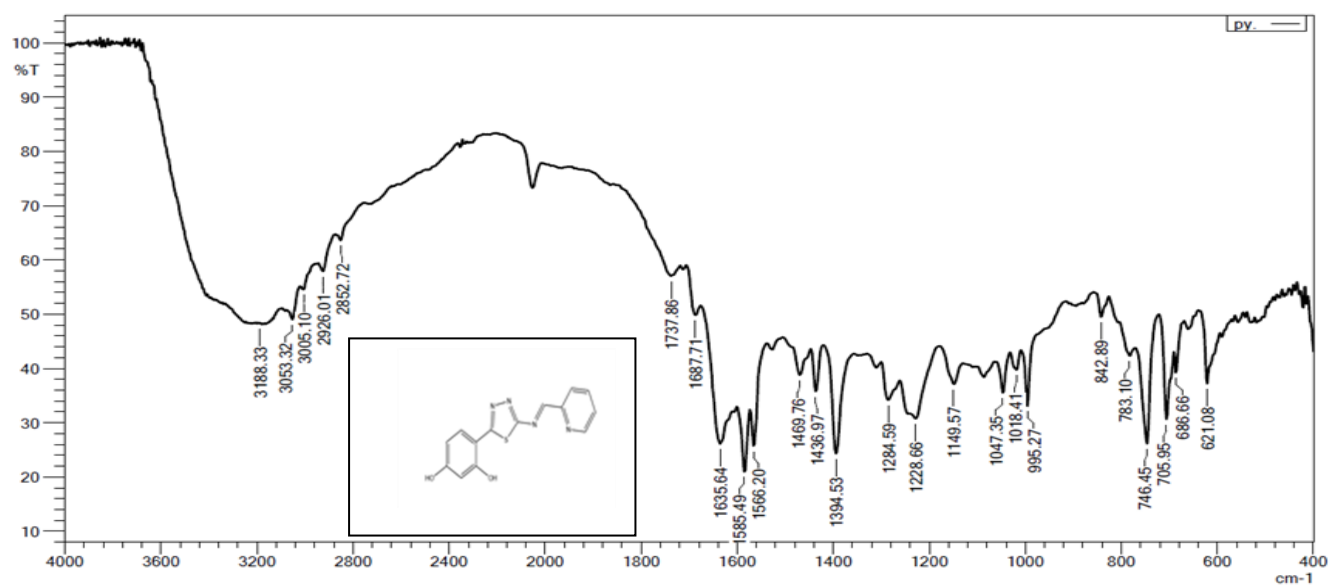


Fig. S4. FT-IR of Compound (py).

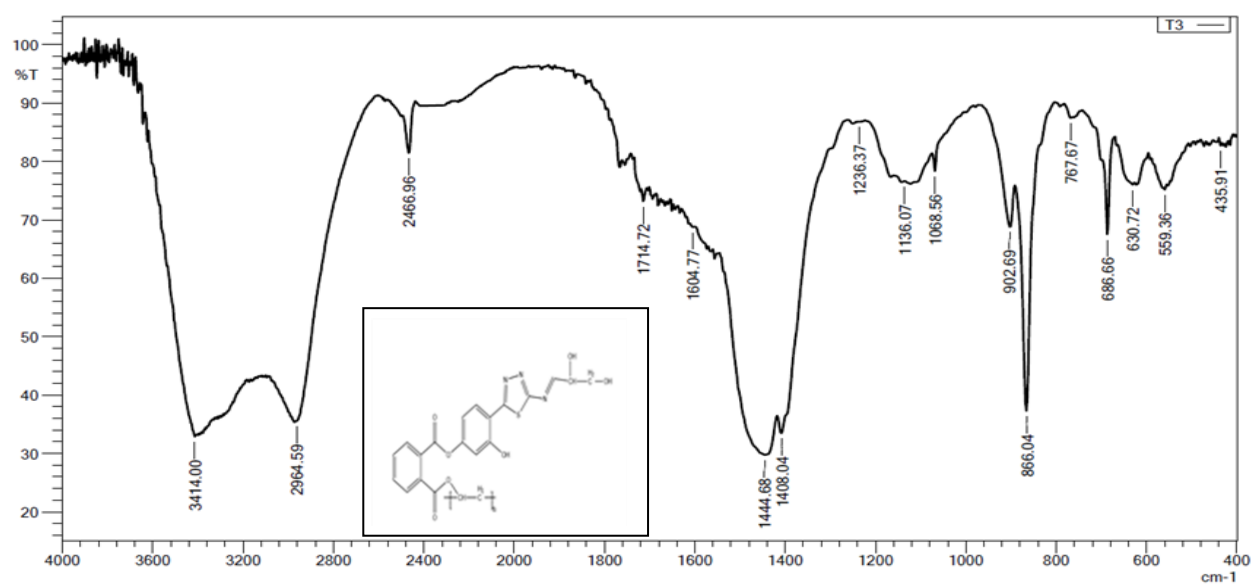


Fig. S5. FT-IR of Compound (T3).

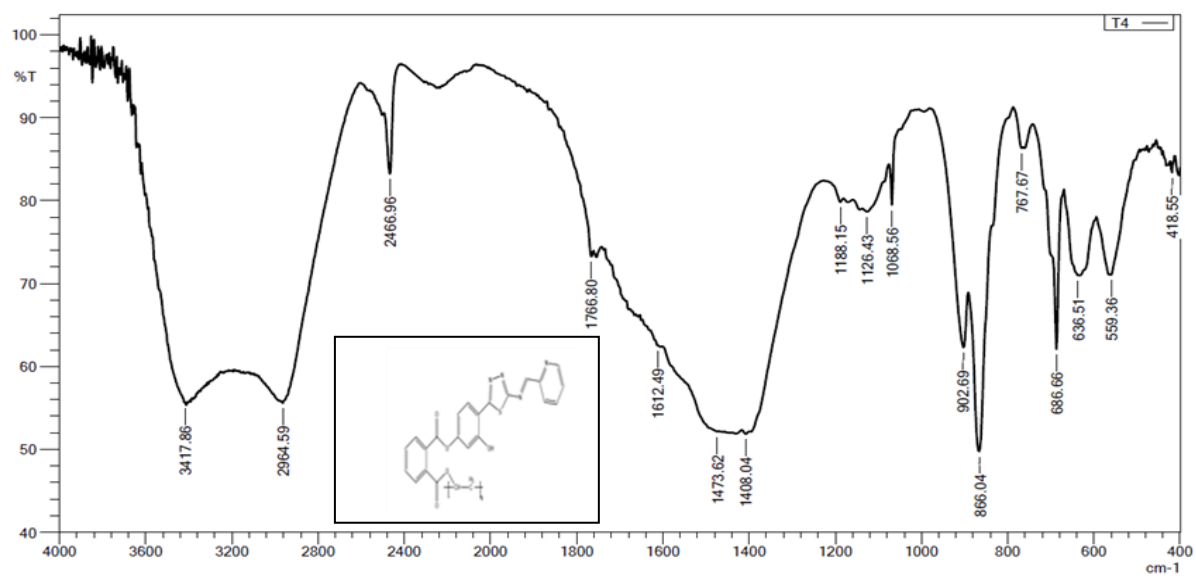


Fig. S6. FT-IR of Compound (T4).

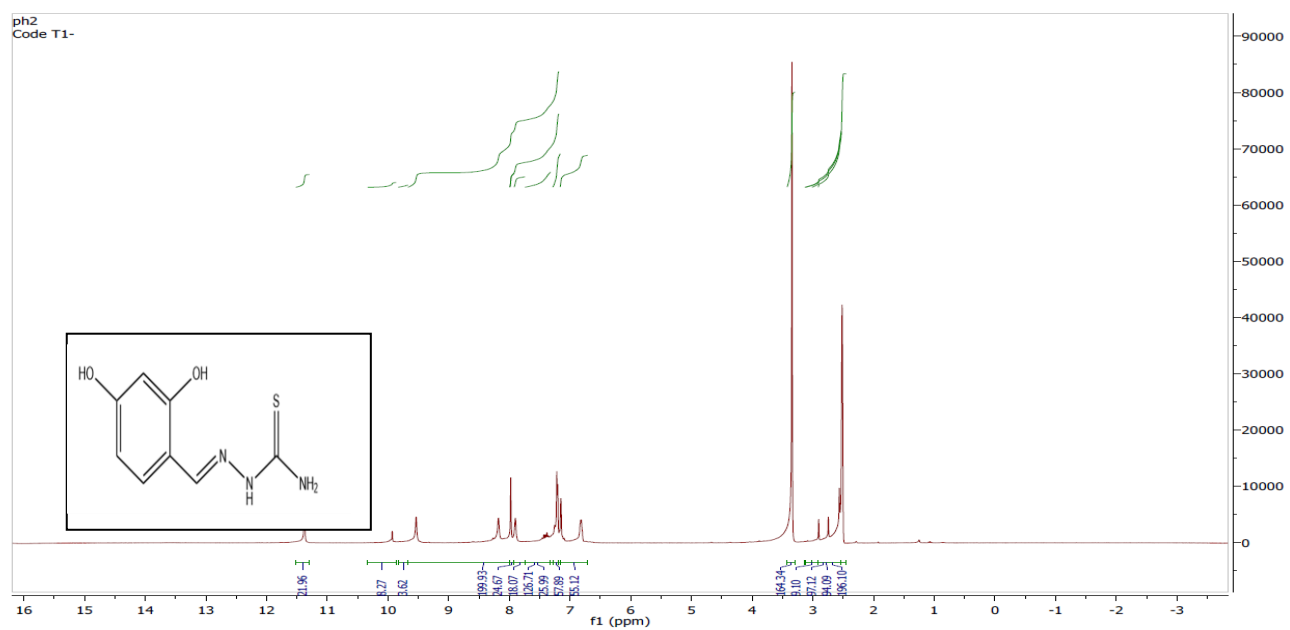


Fig. S7. ¹H NMR of Compound (T1).

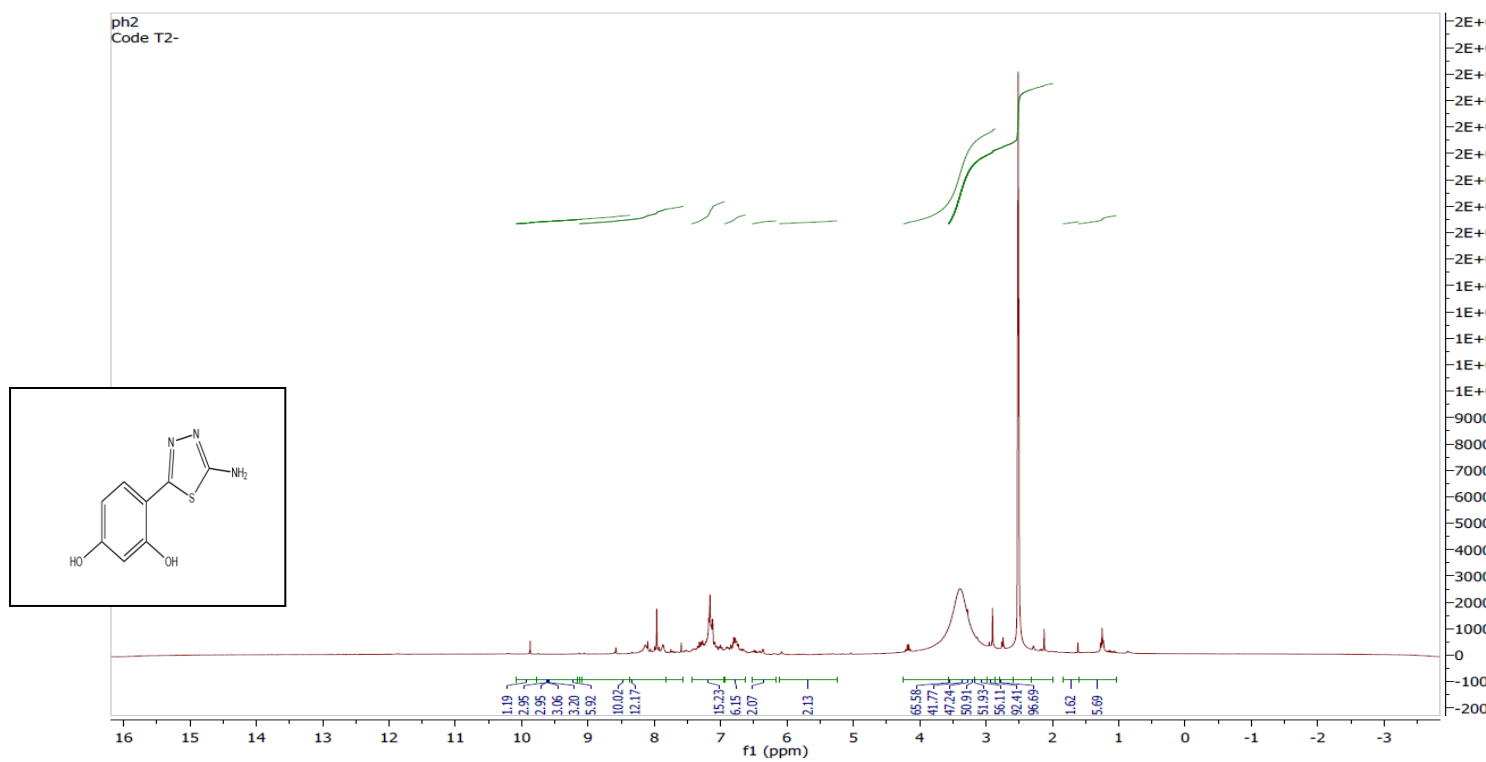


Fig. S8. ¹H NMR of Compound (T2).

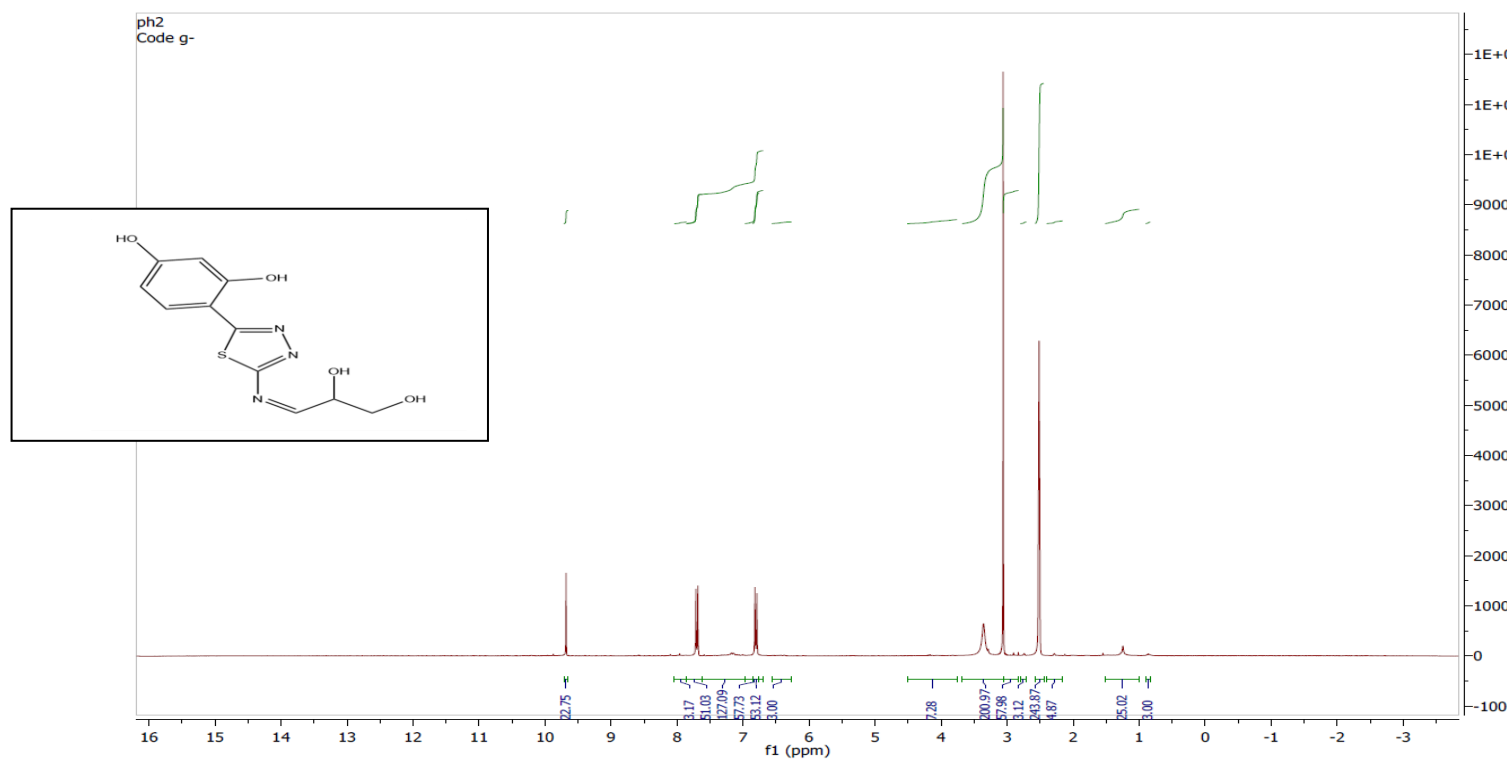


Fig. S9. ¹H NMR of Compound (g).

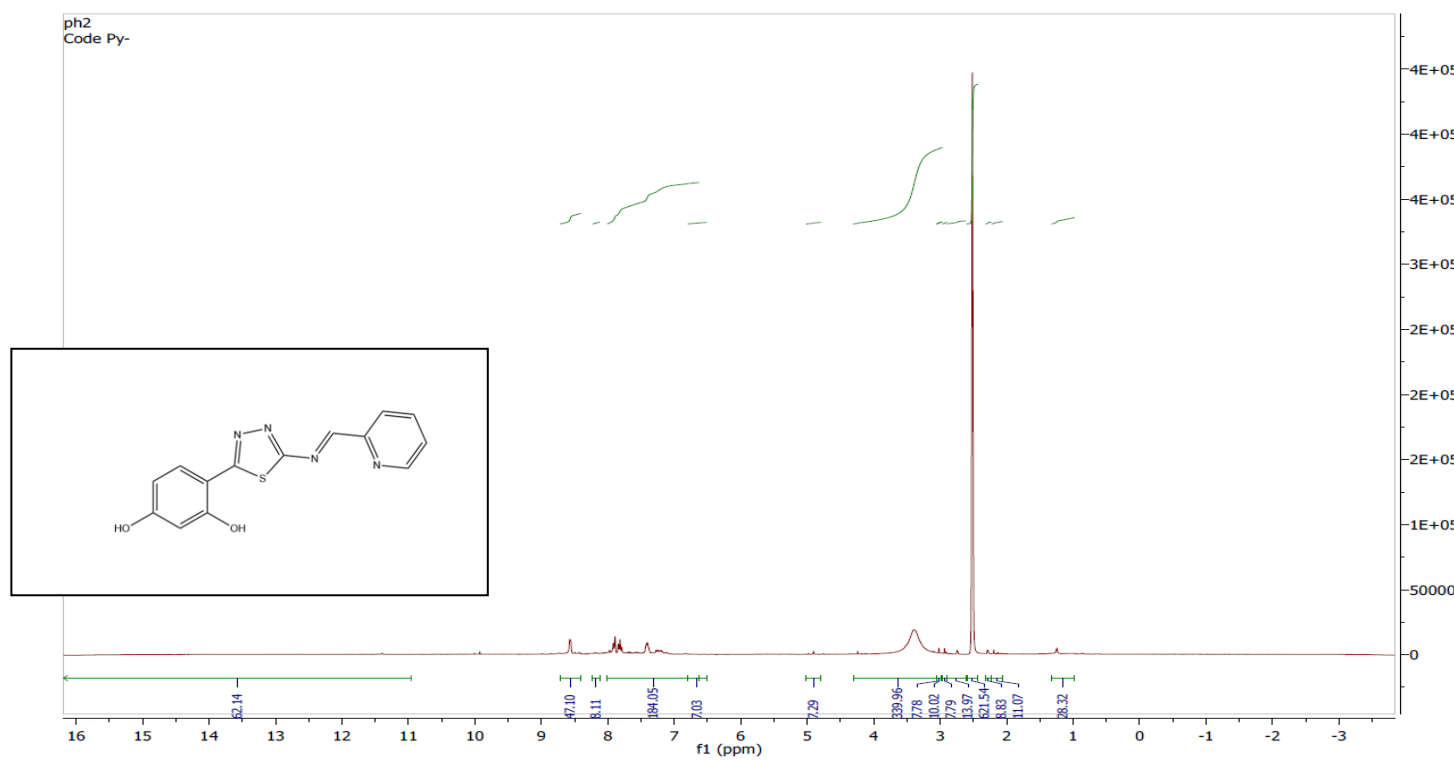


Fig. S10. ¹H NMR of Compound (py).

ph2.561.fid
Code T3-

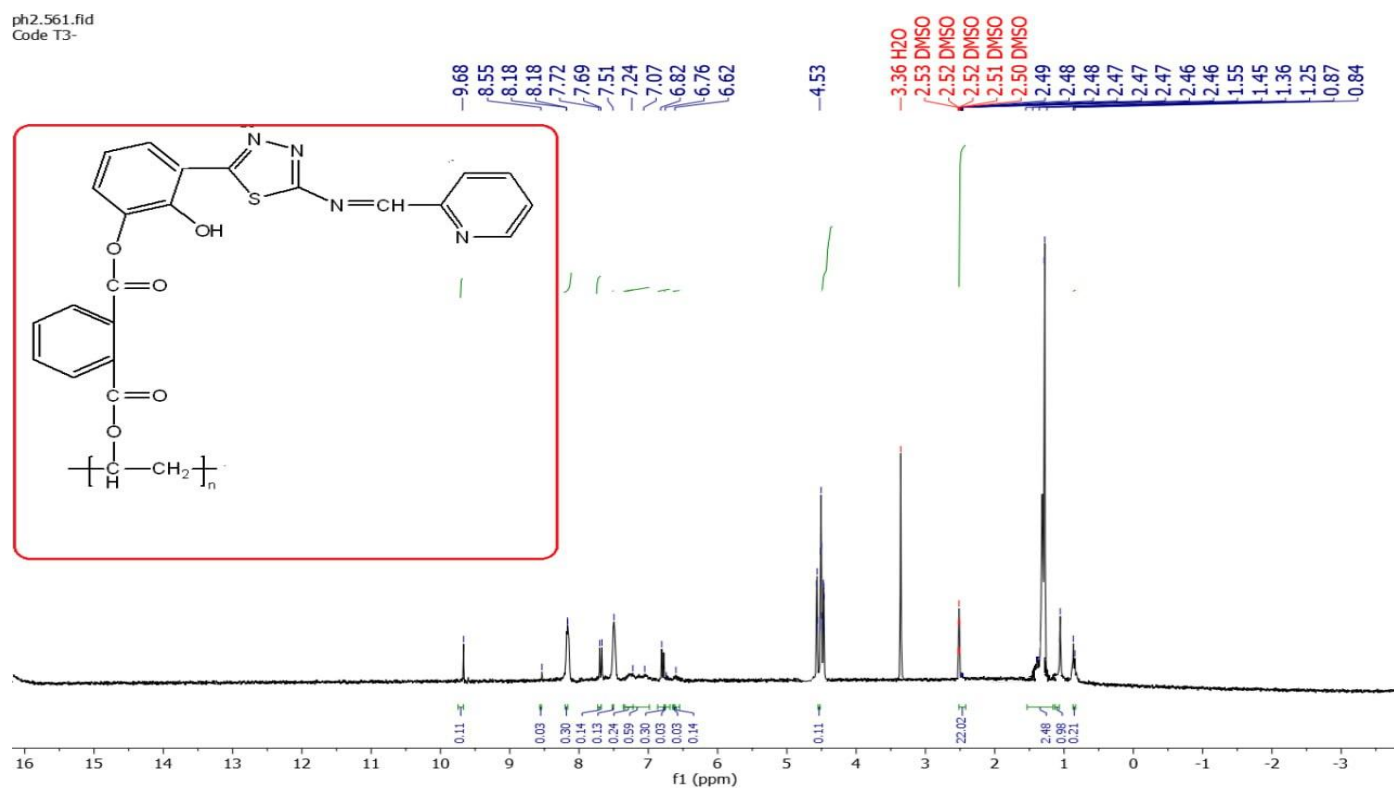


Fig. S11. ¹H NMR of Compound (T3).

ph2.558.fid
Code T4-

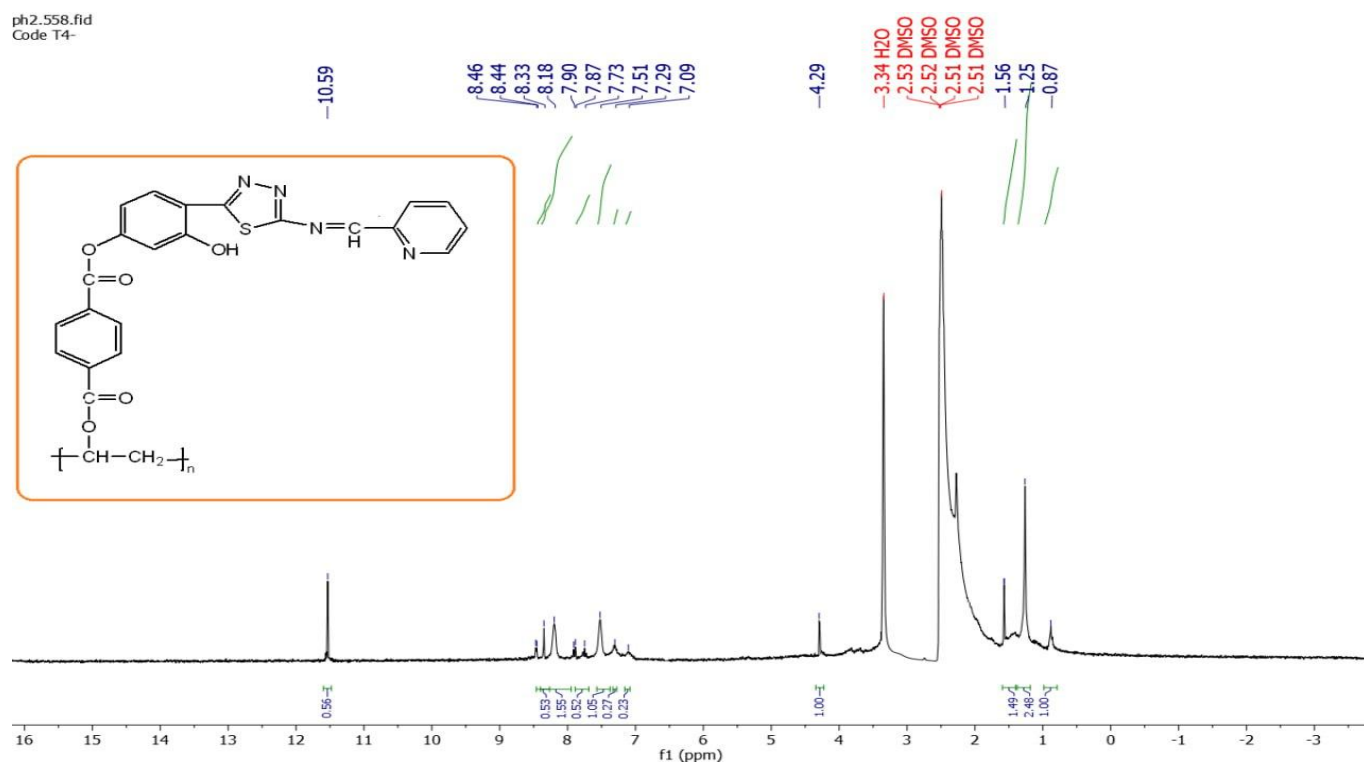


Fig. S12. ^1H NMR of Compound (T4).

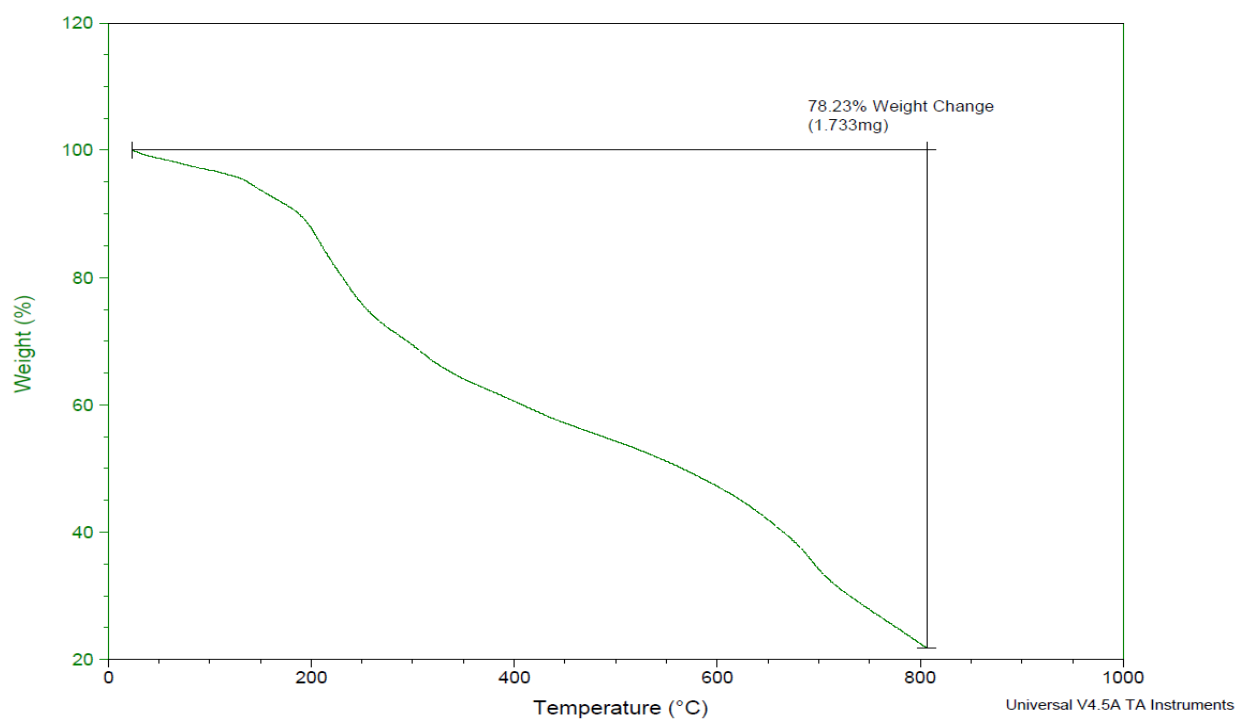


Fig. S13.TGA for prepared polymer T1.

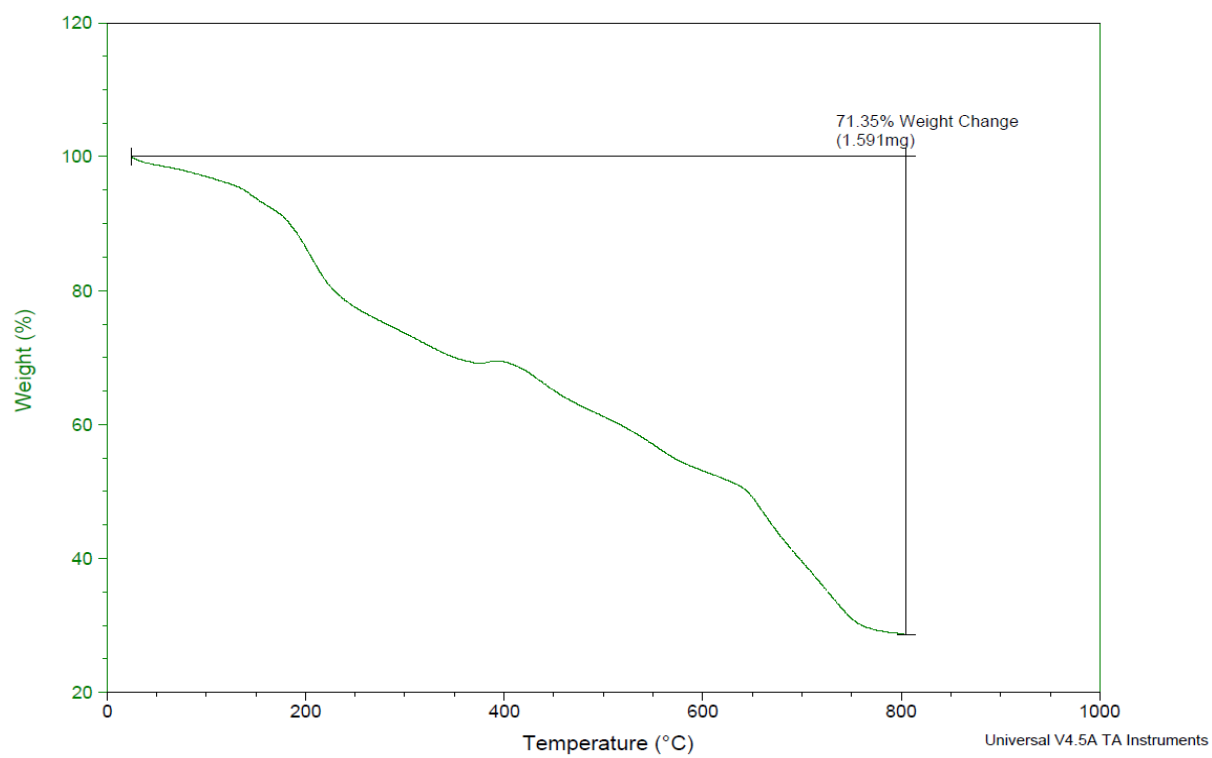


Fig. S14.TGA for prepared polymer T2.

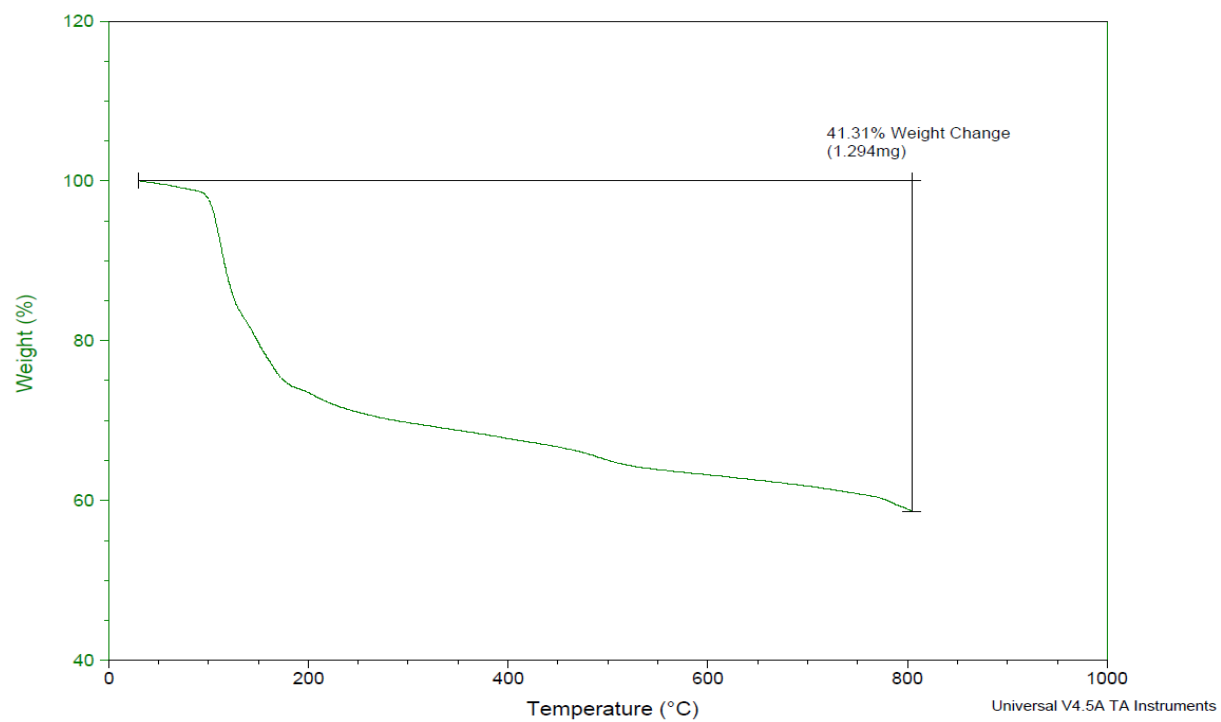


Fig. S15.TGA for prepared polymer T3.

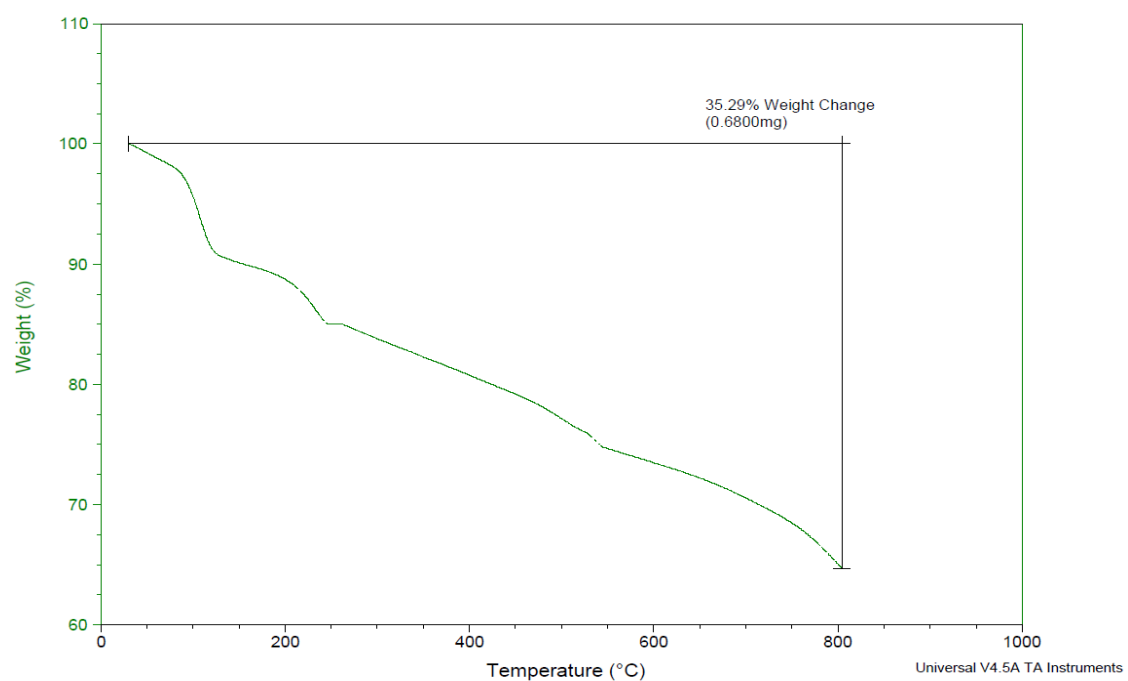


Fig. S16.TGA for prepared polymer T4.

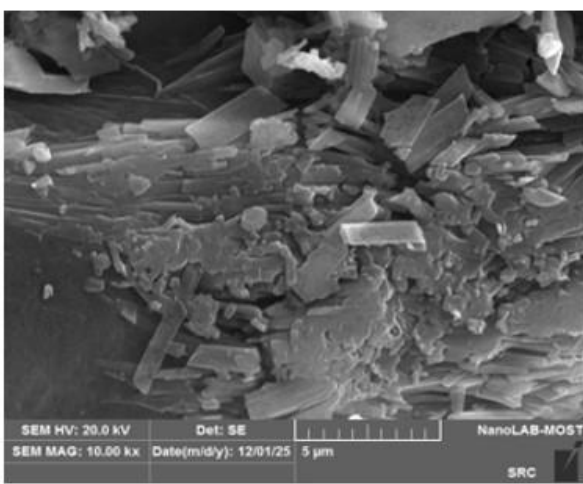
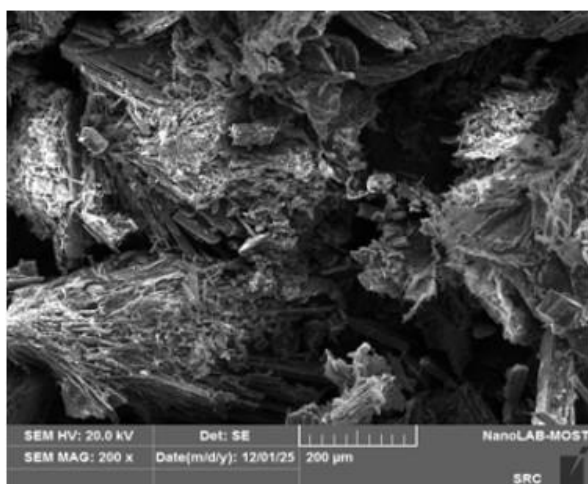
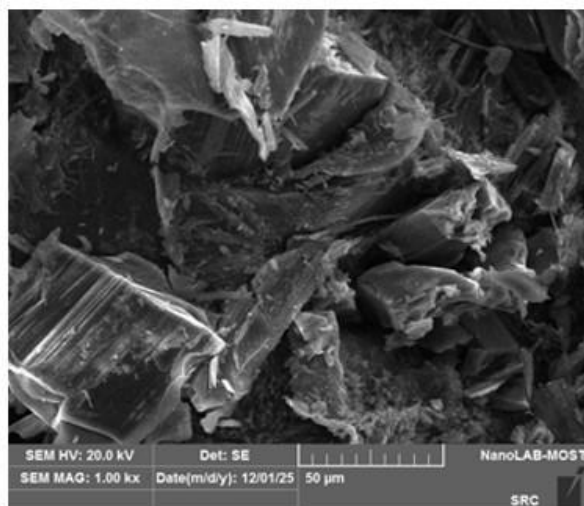
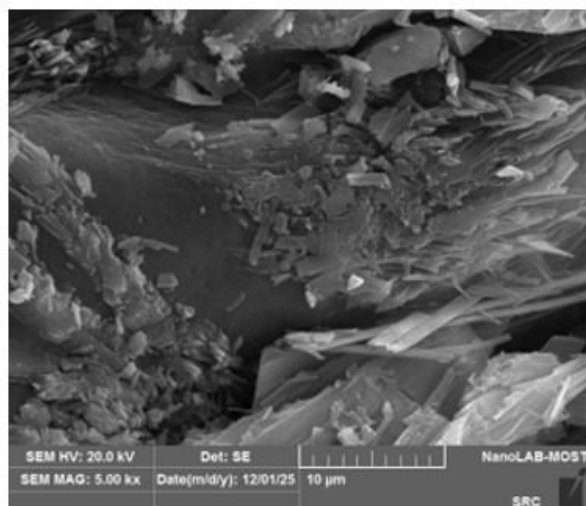


Fig. S17.SEM of Compound T3.

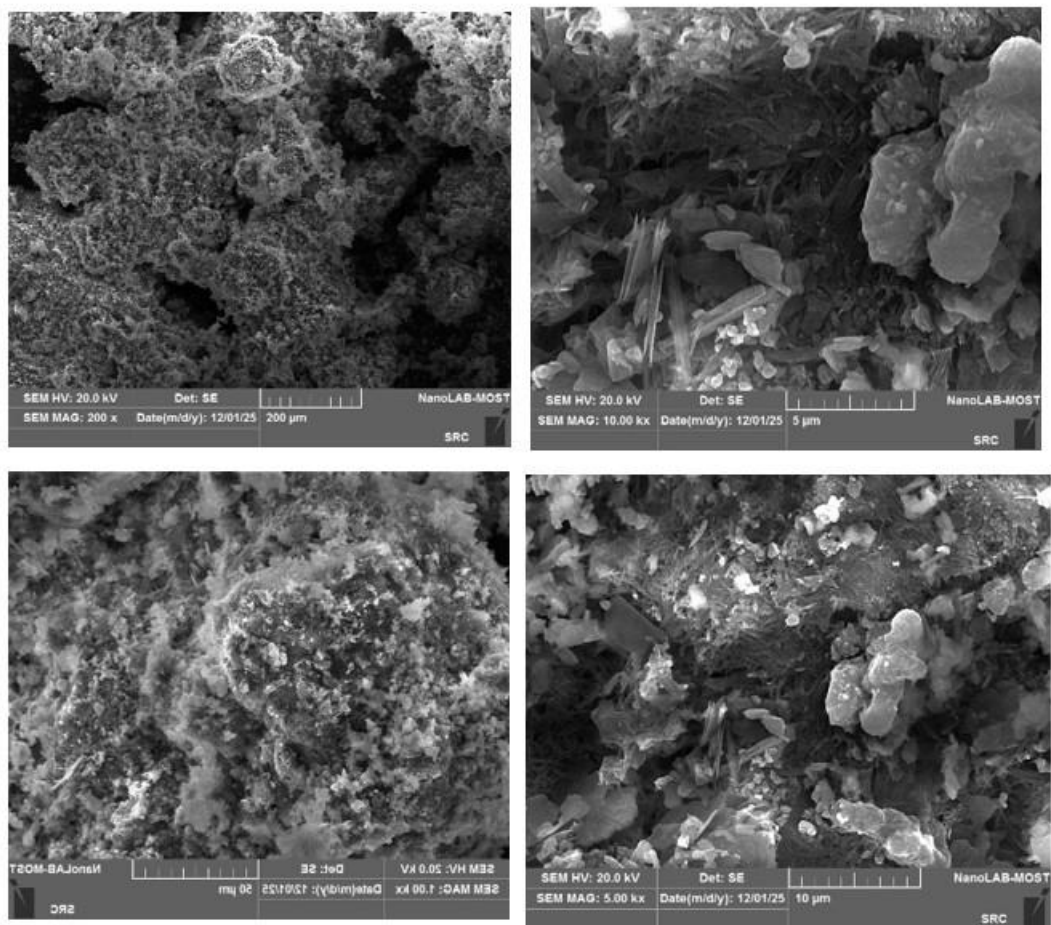


Fig. S18.SEM of Compound T4.

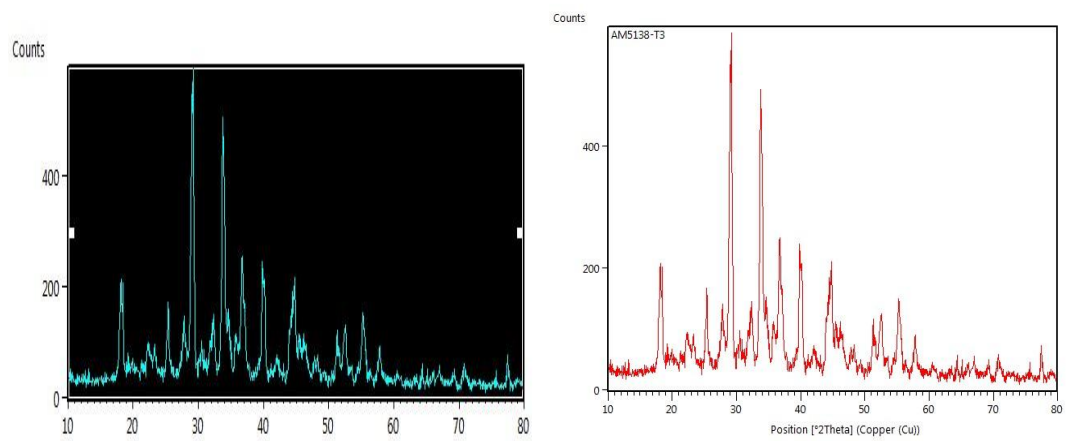


Fig. S19.XRD of Compound polymer T3.

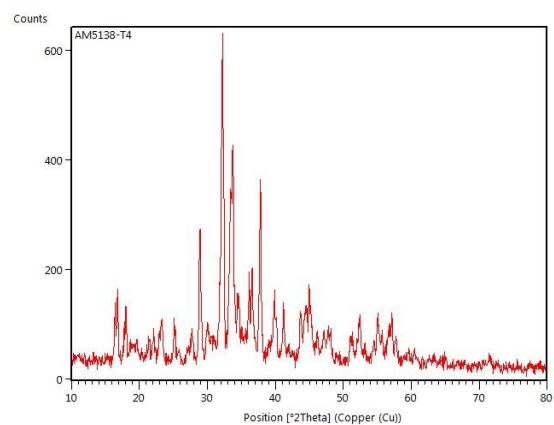
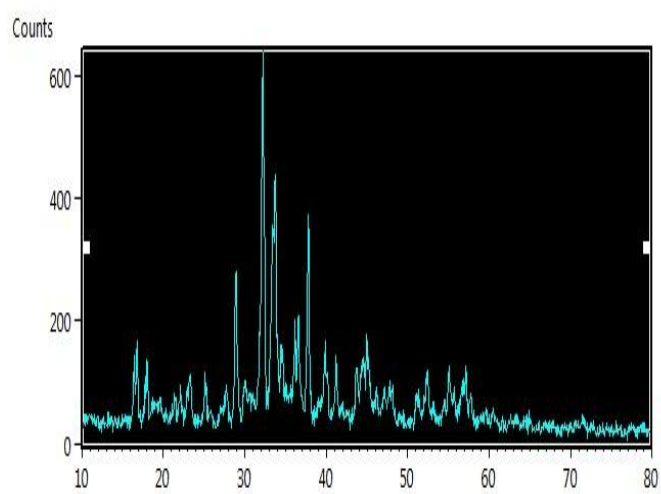


Fig. S20.XRD of Compound polymer T4.