

### Supplementary materials

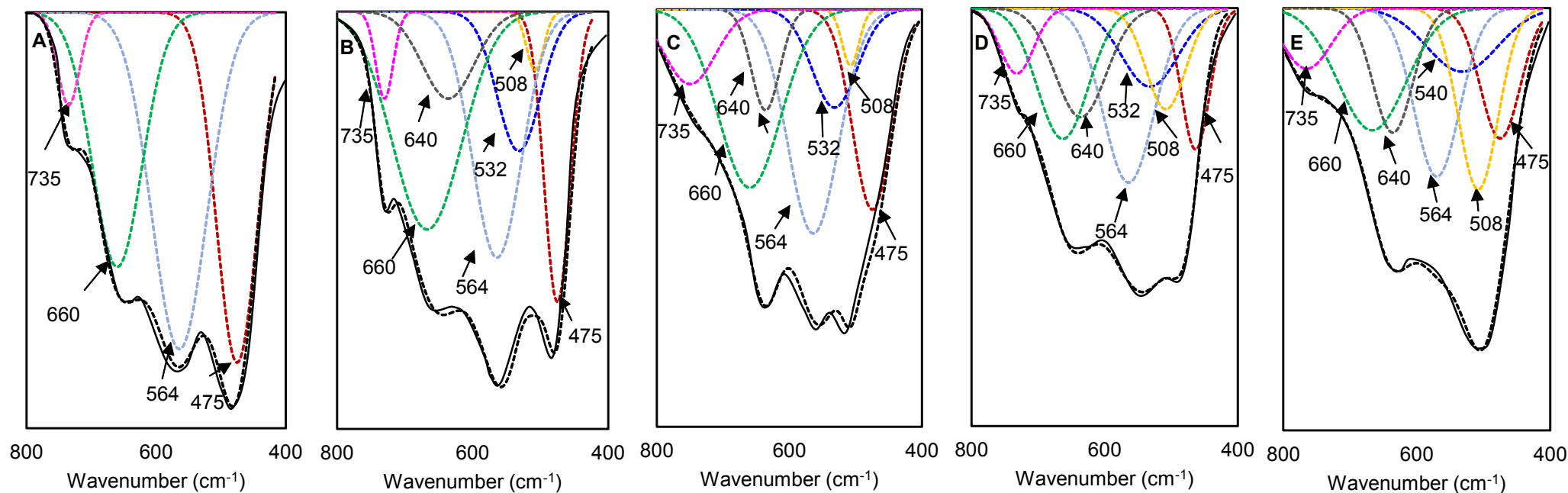


Fig S1 Gaussian curve fitting of FTIR deconvolution peak in the 800-400 cm<sup>-1</sup> region of (A) AT, (B) 5 CAT, (C) 10 CAT, (D) 15 CAT, and (E) 20 CAT.

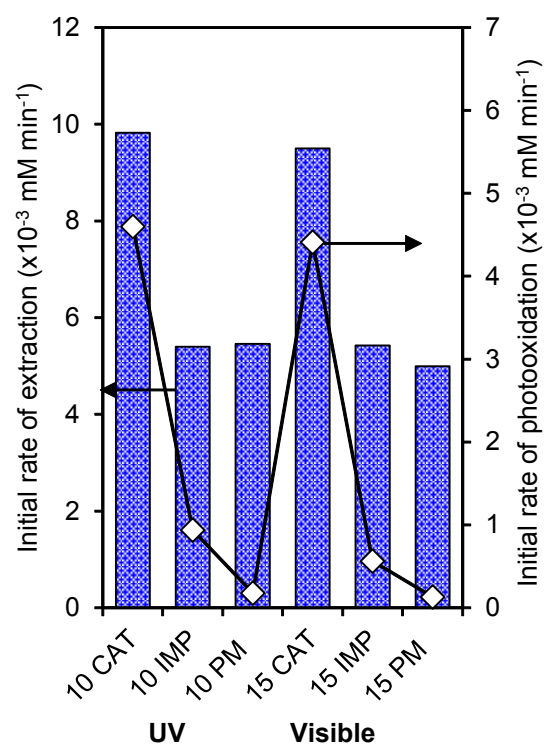


Fig. S2 Effect of different catalysts on sulfur removal under UV and visible region.