Supporting Information

Direct aerobic liquid phase epoxidation of propylene catalyzed by Mn(III) porphyrin under mild conditions: Evidence for the existence of both peroxide and Mn(IV)-oxo species from *in situ* characterizations

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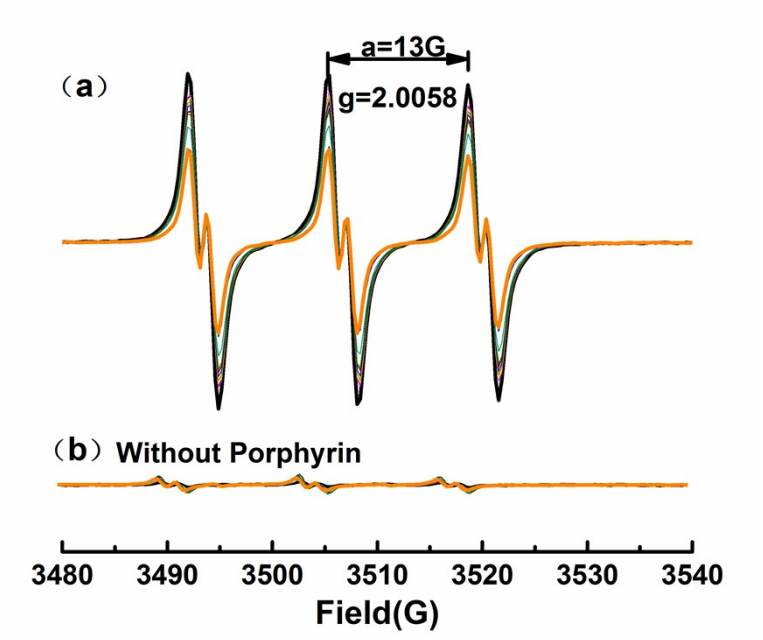

Fig. S1 ESR spectrum of reaction solution. (a) 10mM Benzaldehyde + 1uM MnTPPCl + PBN+ O_2; (b) 10mM Benzaldehyde + PBN+ O_2

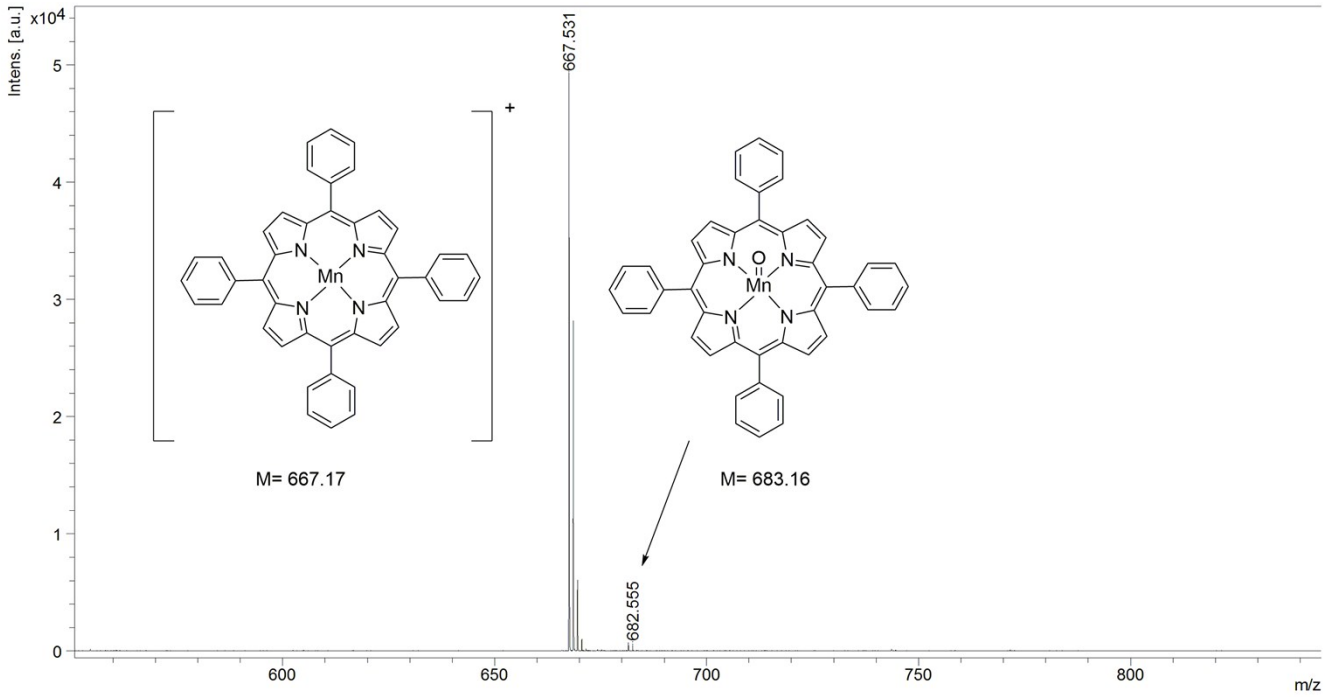

Fig. S2 MS spectrum of the reaction sample. Reaction condition: MnTPPCl, 1×10^{-2} mol L^{-1}; Solvent, ethyl acetate, 40 mL; BA, 10 mM,

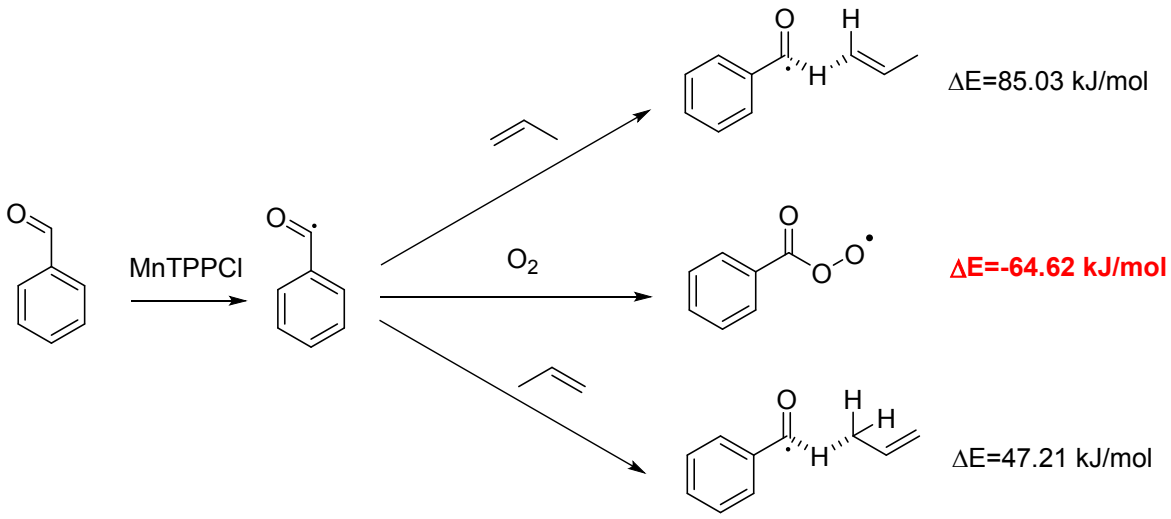

Fig. S3 Plausible reaction for benzoic radical and propylene

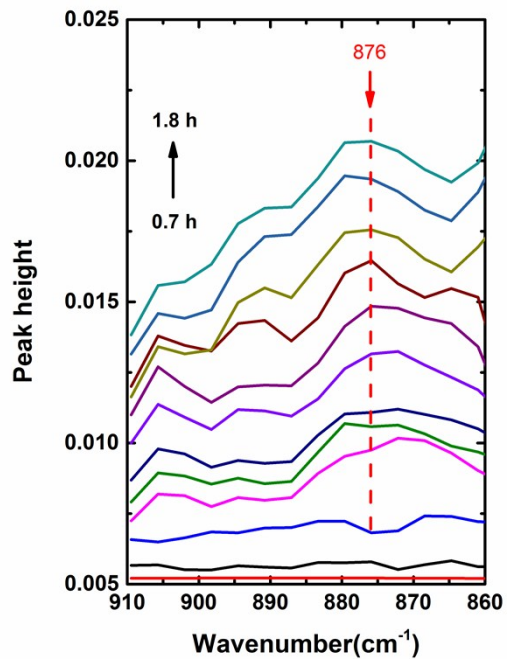

Fig. S4 Spectrums of the reaction solution by *in situ* FT-IR

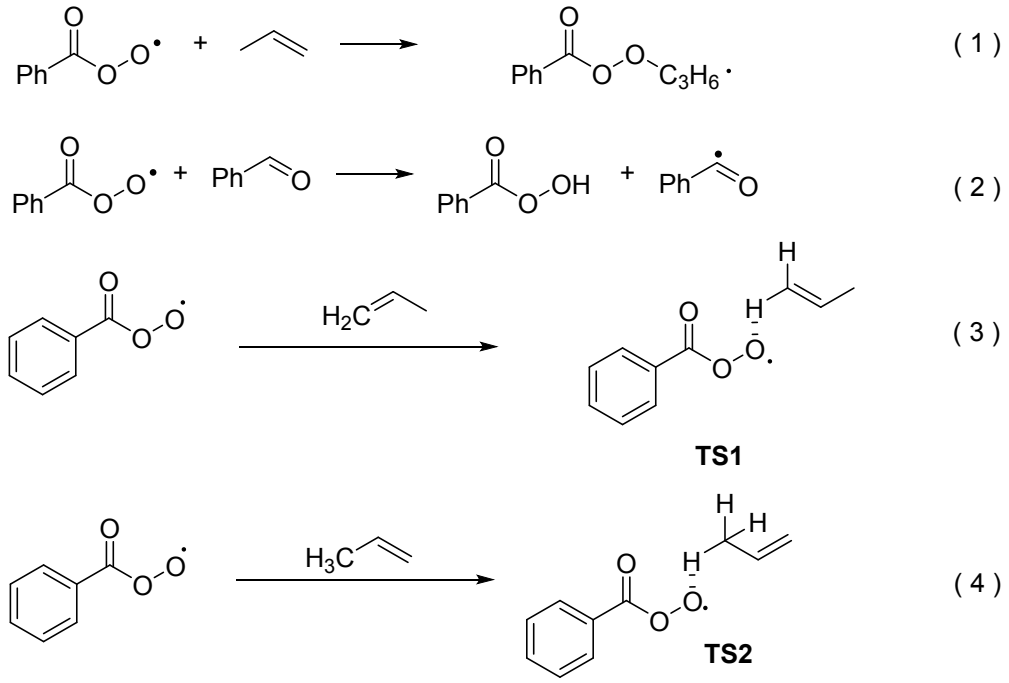

Fig. S5 Competition between benzaldehyde and propylene when react with benzoyl peroxide radical

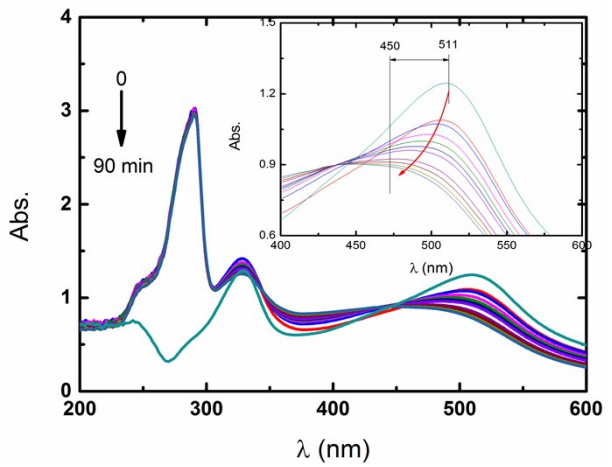

Fig. S6 UV spectrum of DPPH after add reaction solution. DPPH: 0.1 M (acetonitrile), reaction solution/DPPH: 1:50