Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

Highly catalytic active micro/meso-porous Ti-MCM-36 prepared by grafting method

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Supporting Information

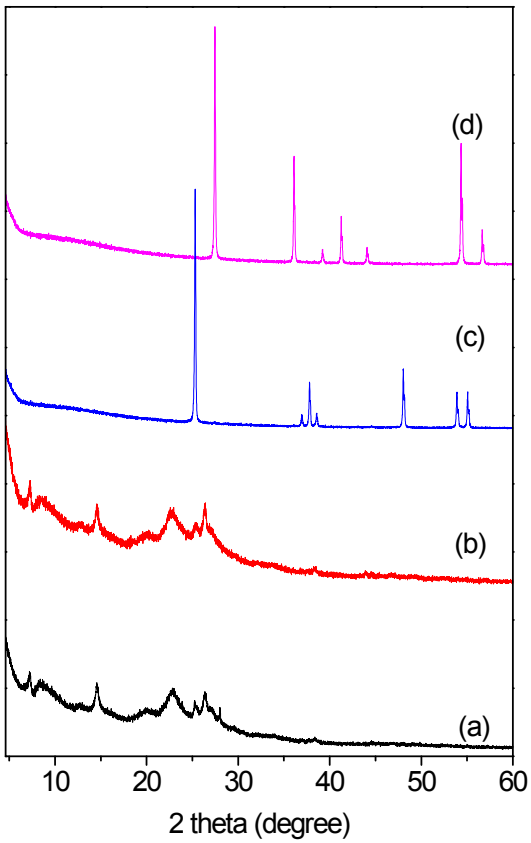

Fig. S1 XRD patterns of (a) MCM-36, (b) 50Ti(E)-MCM-36(tol) and (c) TiO_2 anatase and (d) TiO_2 rutile

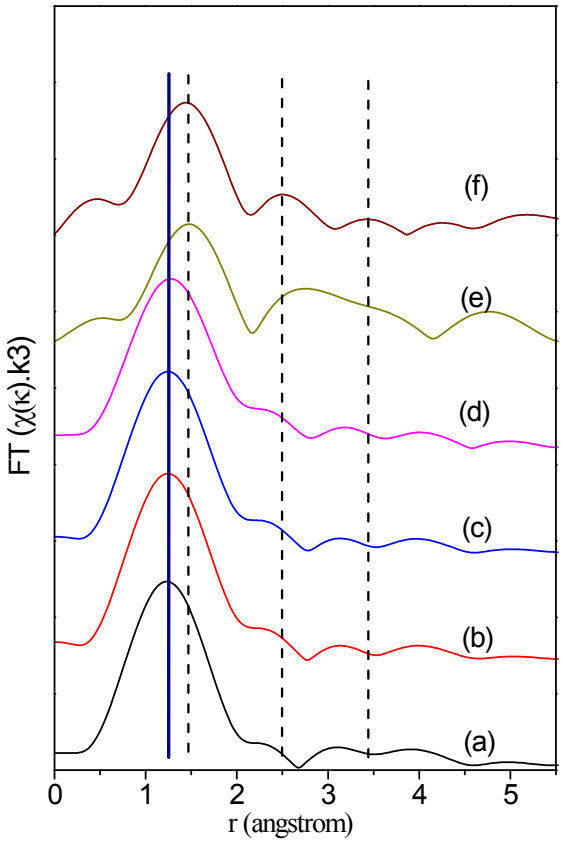

Fig. S2 Fourier transform k^3-weighted Ti *K*-edge EXAFS spectra in R-space of (a) Ti(E)-MCM-36, (b) Ti(P)-MCM-36, (c) Ti(EB)-MCM-36, (d) Ti-YNU-1, (e) rutile and (f) anatase TiO_2.

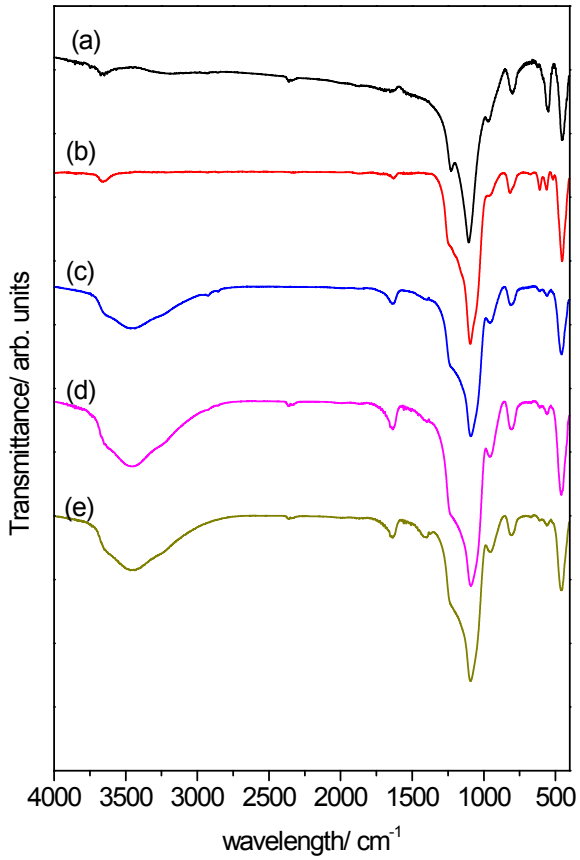

Fig. S3 FT-IR spectra of (a) TS-1, (b) Ti-YNU-1, (c) Ti-MCM-36, (d) Ti-MCM-36-EtOH and (e) Ti-MCM-36-Tol

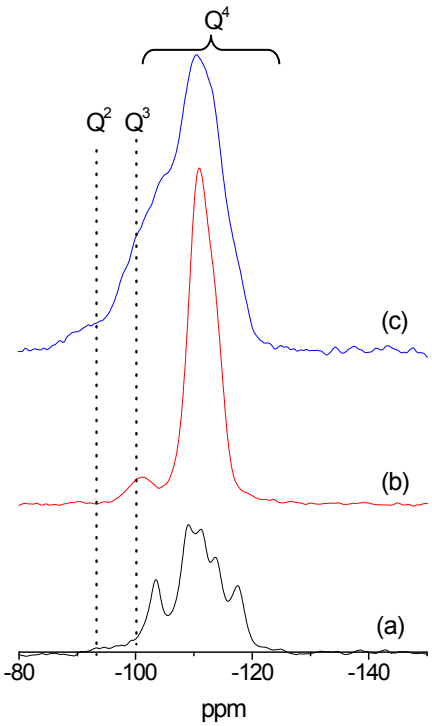

Fig. S4 ^{29}Si NMR spectra of (a) Ti-YNU-1, (b) TS-1 and (c) 50Ti(E)-MCM-36

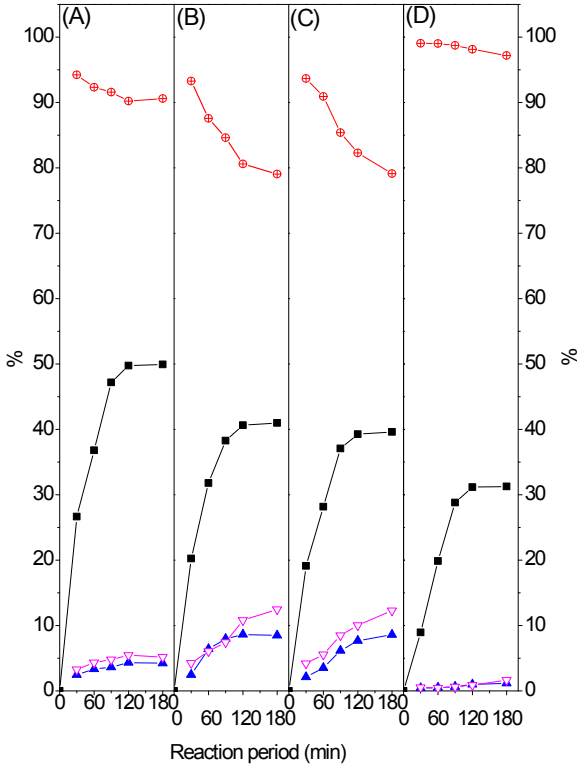

Fig. S5 Cyclohexene epoxidation over various Ti-catalysts: (A) 50T(E)-MCM-36, (B) 50T(P)-MCM-36, (C) 50T(B)-MCM-36, and (D) Ti-YNU-1: (■) conversion, (⊕) epoxide selectivity, (▲) 2-cyclohexene-1-ol and cyclohexene-2-one selectivities and (▽) 1,2-cyclohexanediol selectivity

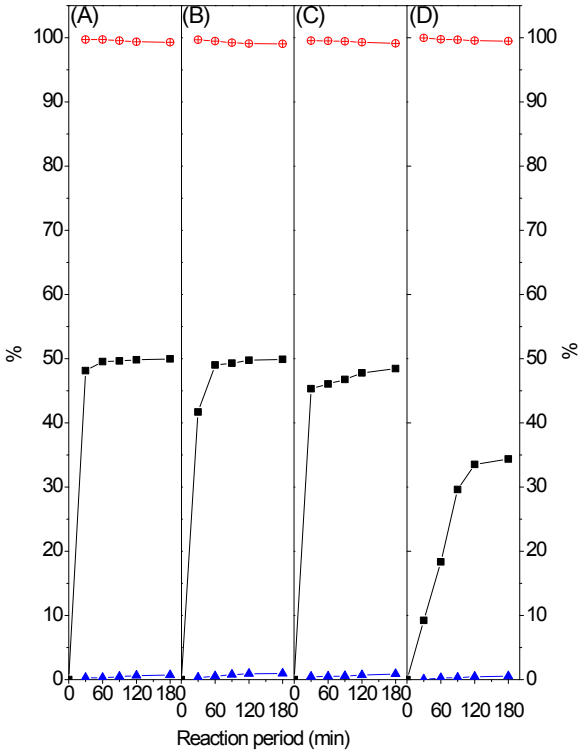

Fig. S6 Cyclooctene epoxidation over various Ti-catalysts: (A) 50T(E)-MCM-36, (B) 50T(P)-MCM-36, (C) 50T(B)-MCM-36and (D) Ti-YNU-1: (■) conversion, (⊕) epoxide selectivity, (▲) diol selectivity.

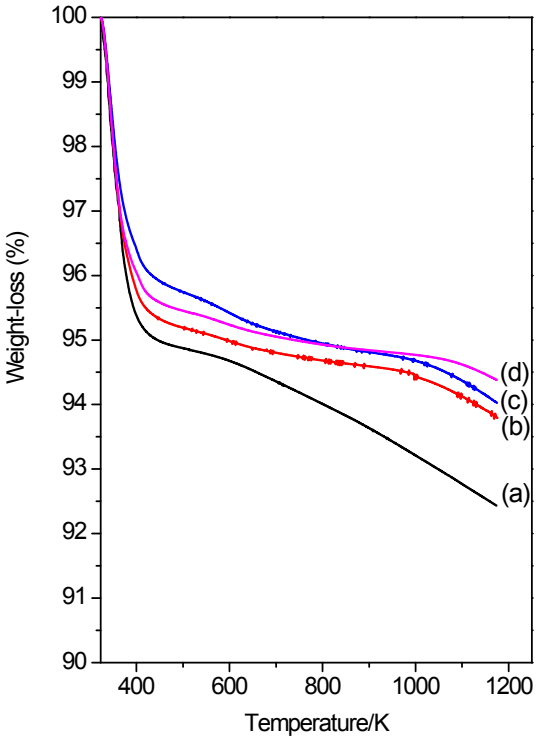

Fig. S7 Thermogravimetric analysis (TGA) curves of (a) fresh 50Ti-MCM-36 catalyst, and those after regeneration for (b) 1, (c) 2, and (d) 3 times.