Supporting Information

Biophenol-Mediated Solvent-free Synthesis of Titanium Silicalite-1 to Improve the Acidity Character of Framework Ti toward Catalysis Application

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Supporting Information contains 4 pages, 4 Figures, 1 Table.

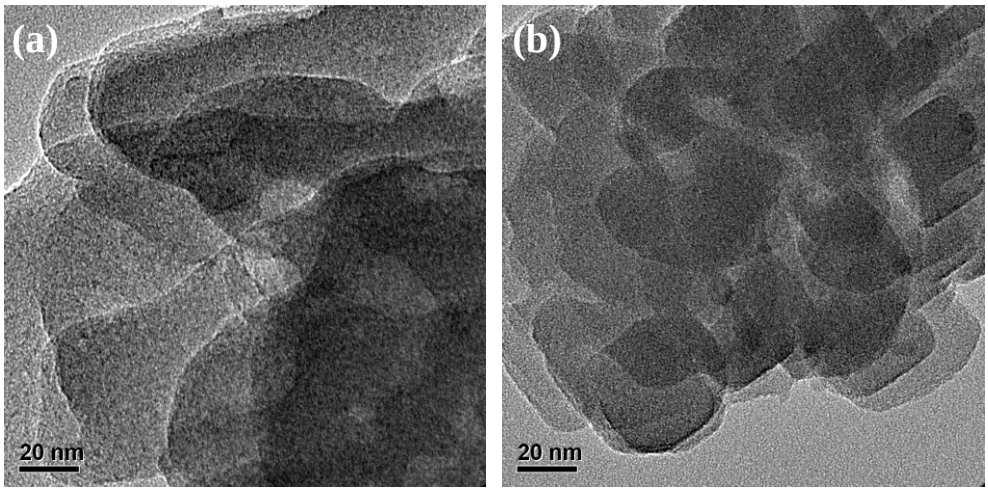

Fig. S1 HR-TEM images of (a) TS-1 and (b) bio-TS-1.

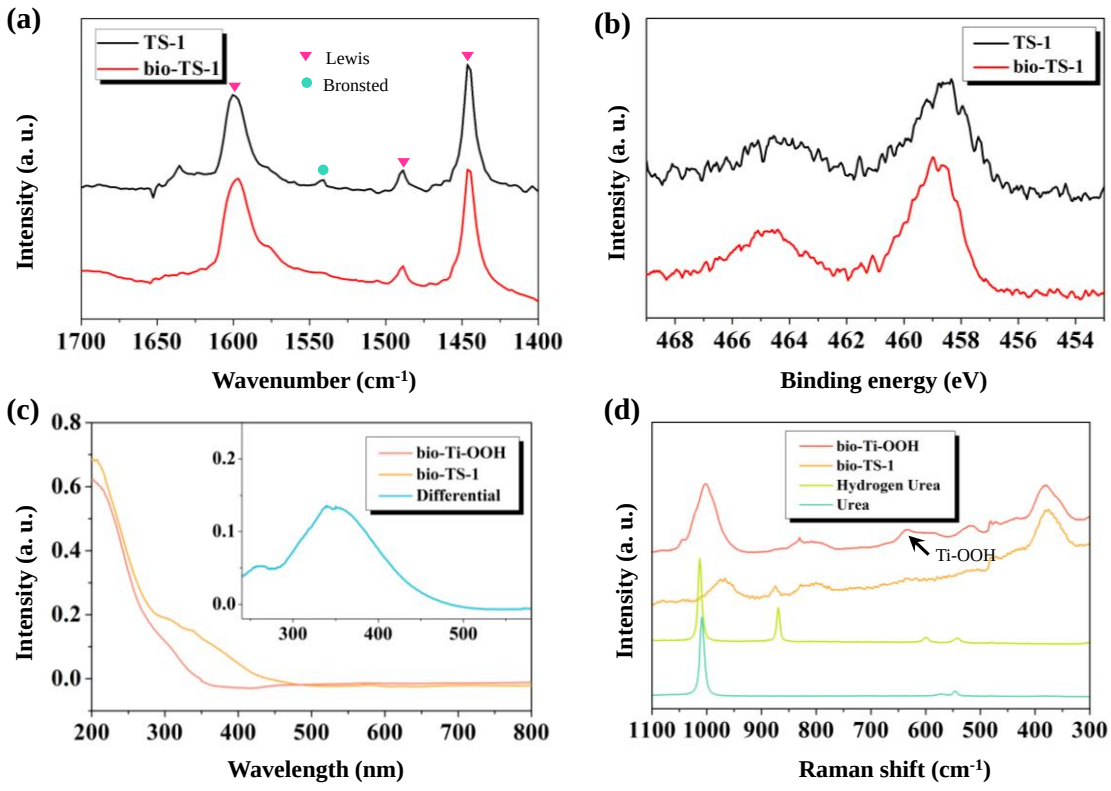

Figure S2. (a) pyridine absorption IR spectra and (b) XPS Ti 2p core-level spectra of bio-TS-1 and TS-1; (c) DR UV spectra and (d) Raman spectra of bio-TS-1 reacting with HOOH.

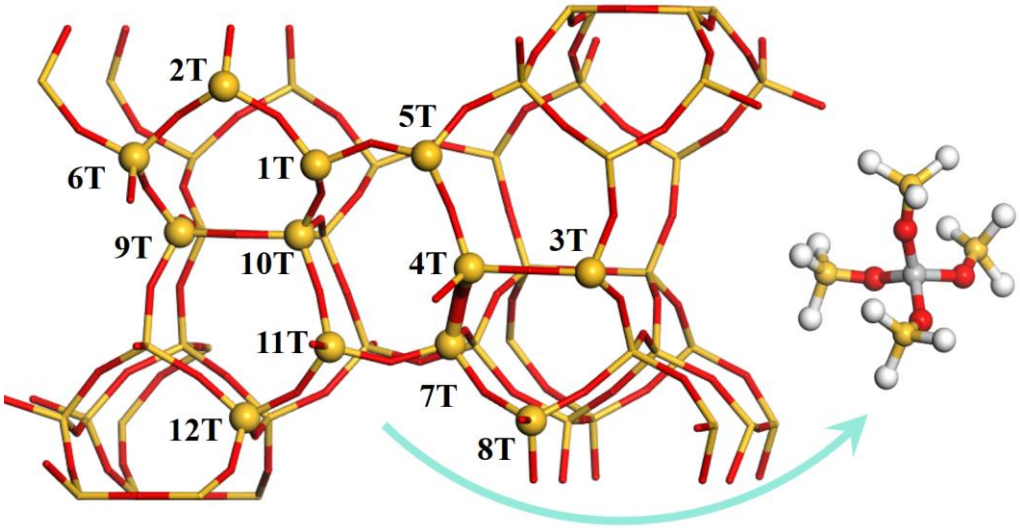

Figure S3. MFI framework in wire-mesh format with 12 crystallographically independent T sites as labeled in ball format (straight view). Mono-substitution 5T tetrahedron model as extracted from the framework. Color mode: Ti atom: grey ball, Si atoms: yellow balls and wires, O atoms: red balls and wires, H atoms: white balls.

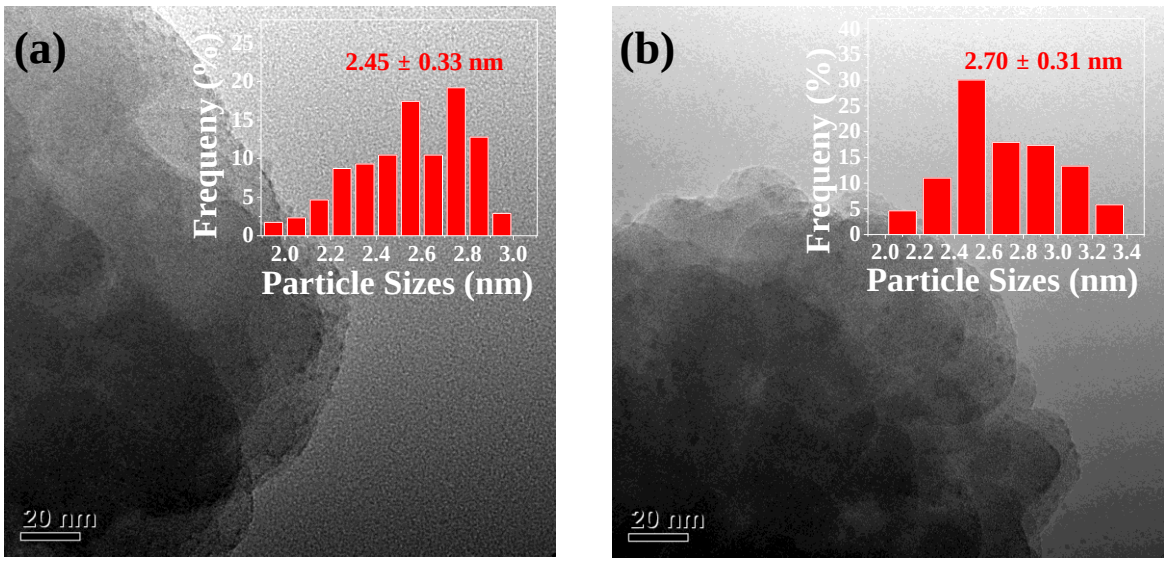

Figure S4. HR-TEM images of (a) Au/ TS-1 and (b) Au/bio-TS-1 (inset: size-distribution of Au NPs; Au loading 0.5wt%).

Table Textural properties of bio-TS-1 and TS-1

Sample	S_{BET}[a] m^2/g	S_{micro}[b] m^2/g	S_{ext}[b] m^2/g	V_{total}[a] cm^3/g	V_{meso}[c] cm^3/g	V_{micro}[b] cm^3/g
bio-TS-1	453	194	259	0.27	0.13	0.083
TS-1	440	202	238	0.25	0.11	0.086

[a] S_{BET} was calculated using BET method. V_{total} was evaluated from the adsorption isotherm at relative pressure about 0.99.
[b] S_{ext}, S_{micro} and V_{micro} were calculated using t-plot method.
[b] V_{Meso} were calculated using BJH method (from adsorption branch).