# Silica supported Sn catalysts with tetrahedral Sn sites for selective isomerization of glucose to fructose

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Electronic Supporting information

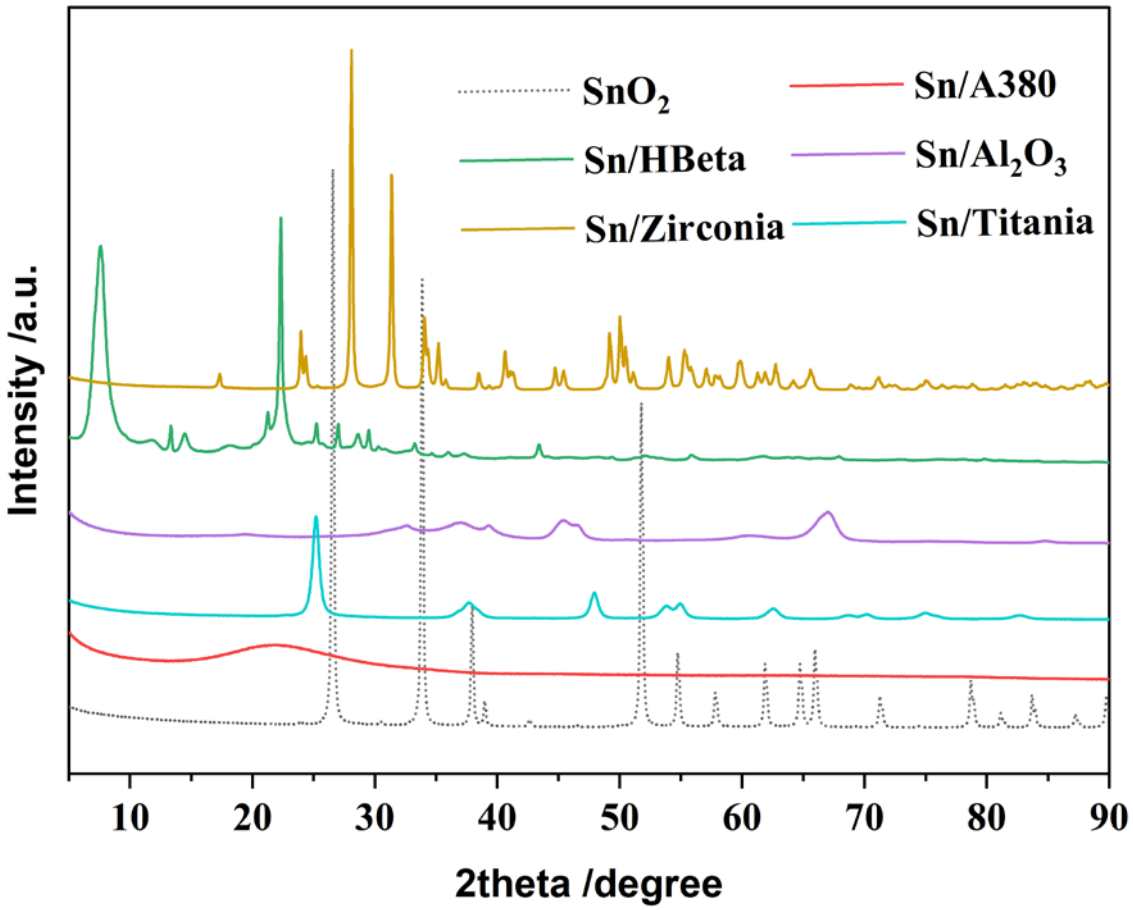


**Fig S1.** XRD of 1 wt % Sn on different supports. The intensity of $SnO_2$ is enhanced 1.5 times for comparison.

Table S1: Surface area of catalysts

| Sample | Surface Area ($m^2$ $g^{-1}$) |
|---|---|
| Sn/Alumina | 166 |
| Sn/HBETA150 | 459 |
| Sn/SBA15 | 851 |
| Sn/Titania | 119 |
| Sn/Zirconia | 5.2 |
| Sn/A380 | 300 |

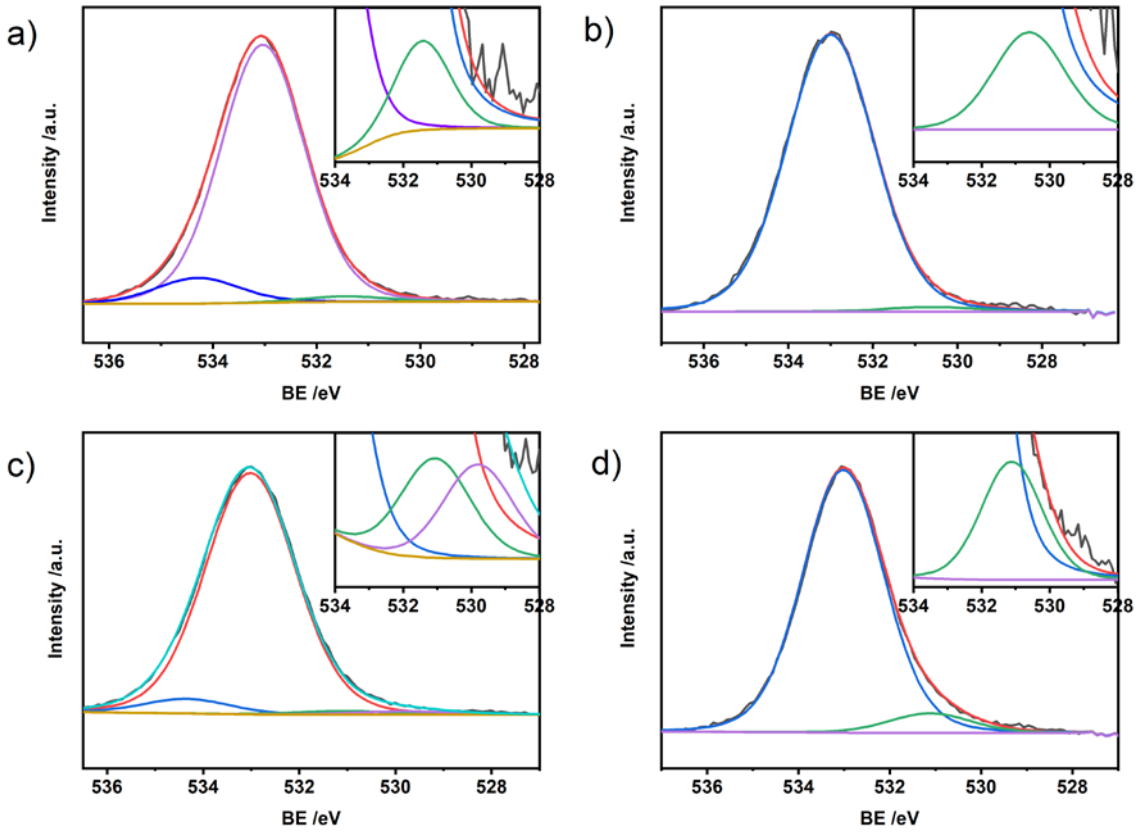


**Fig S2.** O1s XPS spectrum of a) Sn/SBA15, b) Sn/A380, c) 3Sn/SBA15, d) Sn/HBeta150

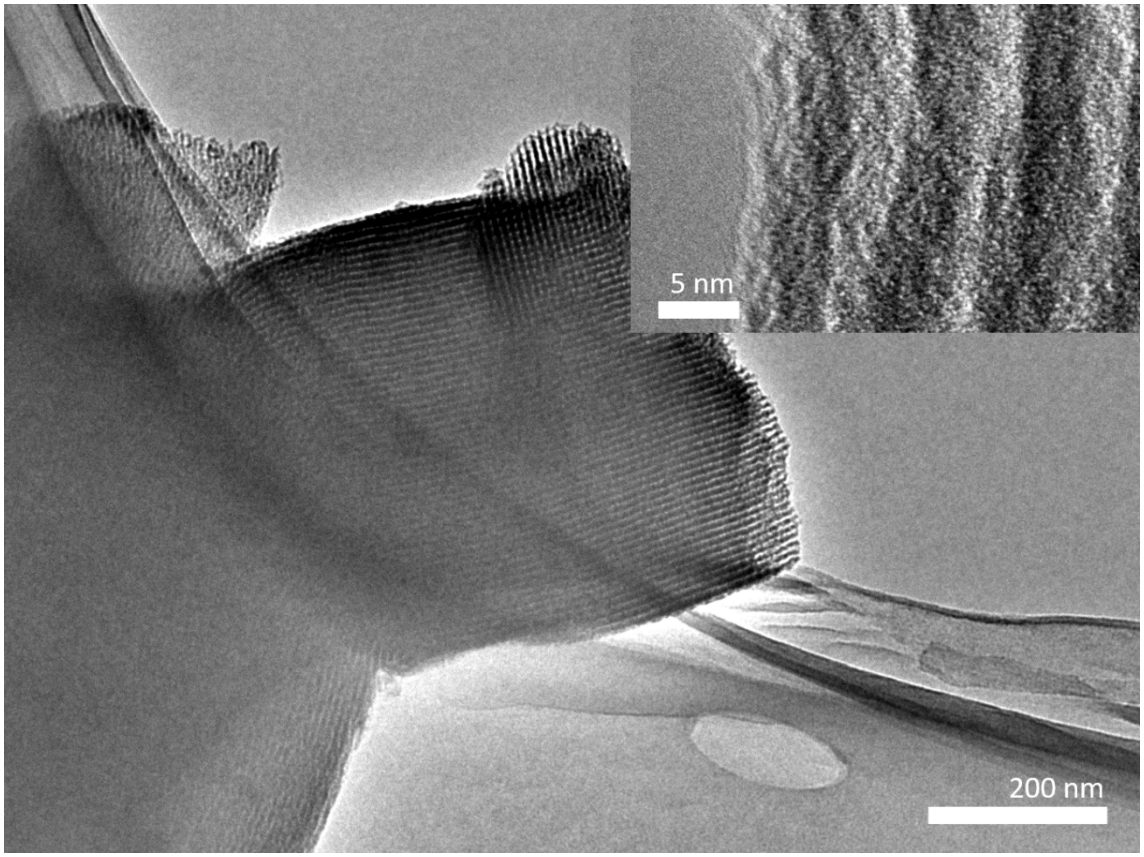


**Fig S3.** HR-TEM image of Sn/SBA15 catalyst with 1 wt% Sn loading.

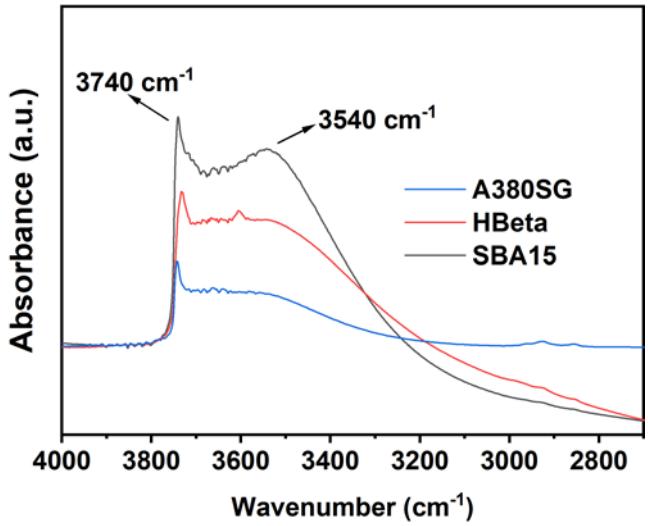


**Fig S4.** FTIR spectra of SBA15, HBeta and A380 supports. The peak at 3740 cm-1 corresponds the surface silanol (Si-OH) groups and the broad band around 3540 cm-1 corresponds to hydrogen bonded silanol groups along with some contribution from adsorbed water molecules. SBA15 shows highest peak intensity for silanol groups and hence it contains the greatest surface OH density.

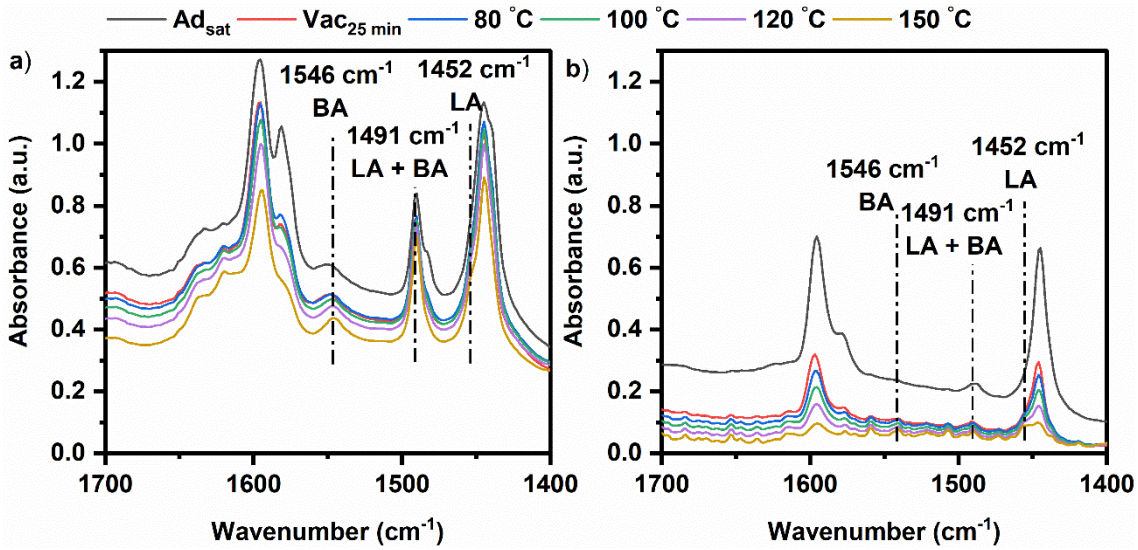


**Fig S5.** Pyridine adsorption FTIR spectra of a) Sn/HBeta150, b) Sn/A380. Intensity of all the spectra are subtracted from that of corresponding samples before adsorption. The spectra were recorded at saturation adsorption condition ($Ad_{sat}$), after 25 min of evacuation at 0.03 torr ($Vac_{25\ min}$) and after desorption at various temperatures.

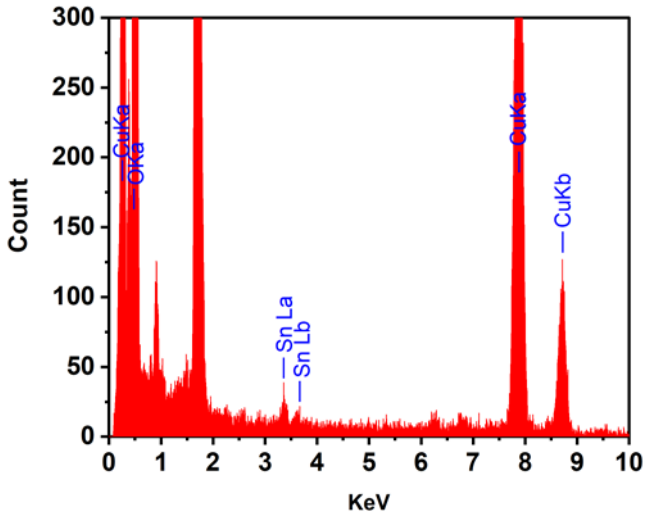


**Fig S6.** Corresponding EDX spectra of region shown in Fig 6 of the manuscript.