

Supporting Information

for

Gallium and tin exchanged Y zeolites for glucose isomerisation and 5-Hydroxymethyl furfural production

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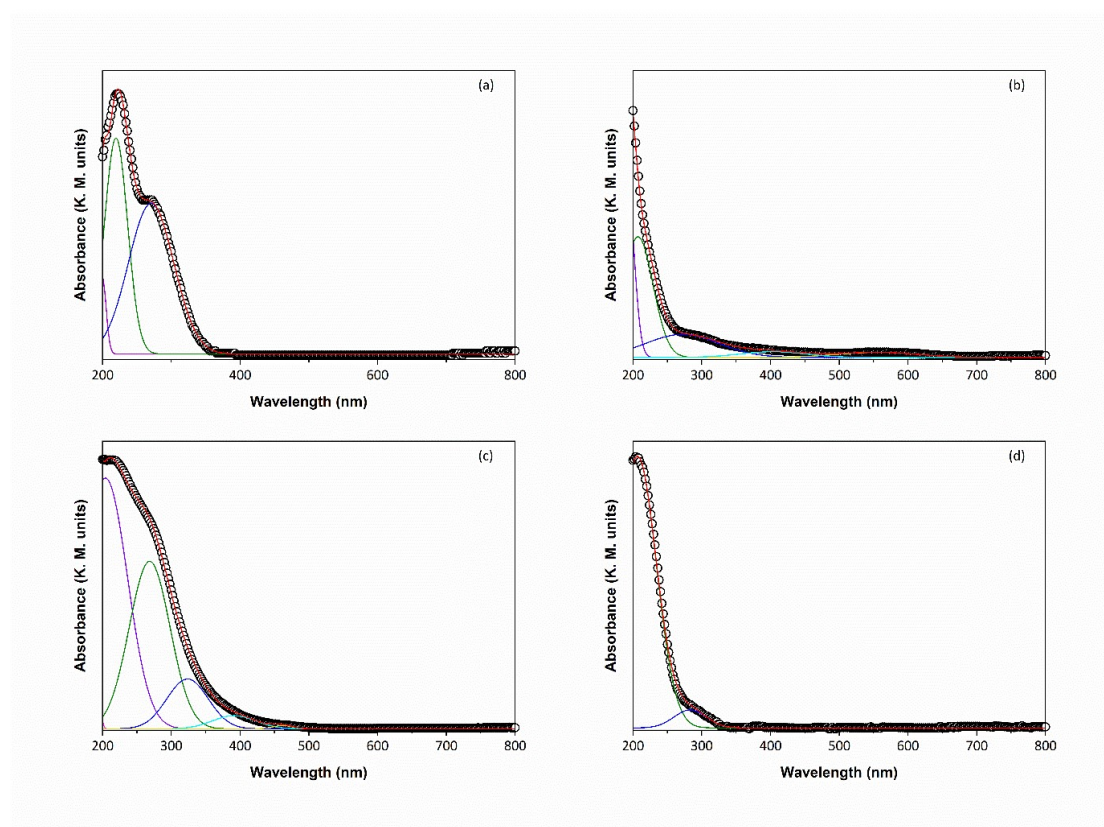


Figure S1. Deconvolution and fitting of UV-Vis DRS of catalysts a) H-Y, b) DeAl-H-Y c) Sn-deAl-H-Y d) Ga-deAl-H-Y. Circles: measured data points, red line: fitted curve.

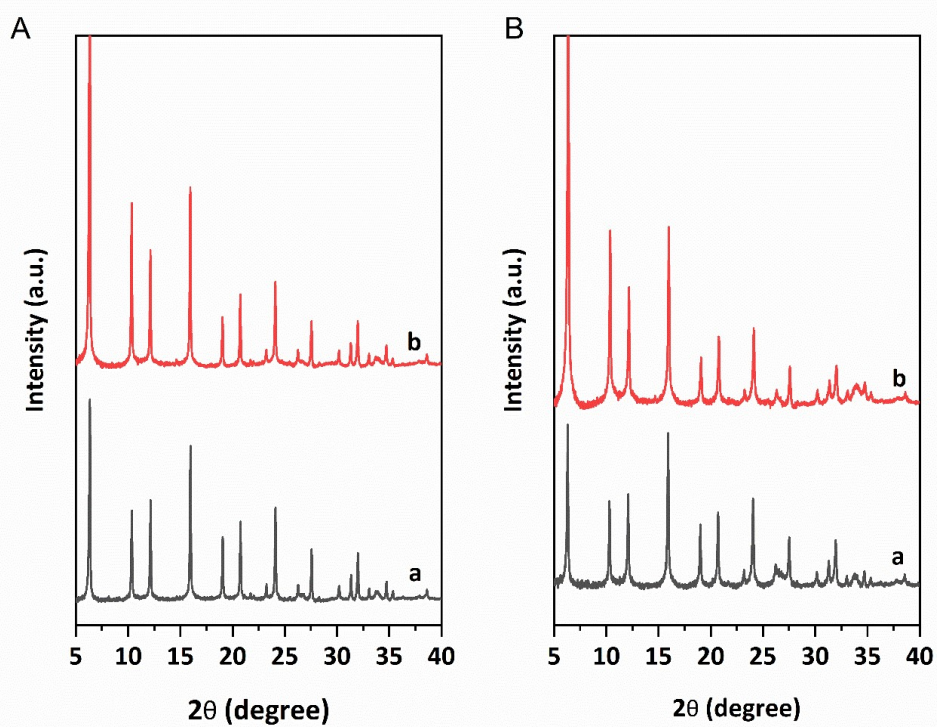


Figure S2. Powder XRD patterns of Sn-deAl-HY after 1st (A) and 4th (B) reaction cycles in water. The XRD spectra of catalysts a) before and b) after the reactivation of the are given.

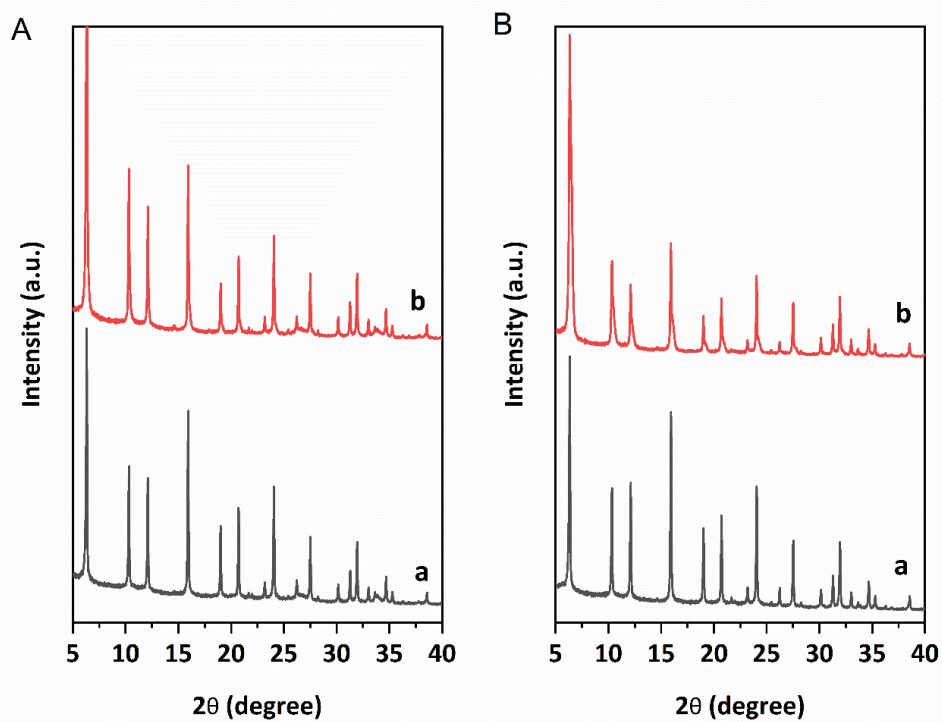


Figure S3. Powder XRD patterns of A. Sn-deAl-HY and B. Ga-deAl-HY in DMSO. The XRD spectra of catalysts after 2nd reaction cycle (a) and after the reaction of the reactivated catalyst (b) are given.

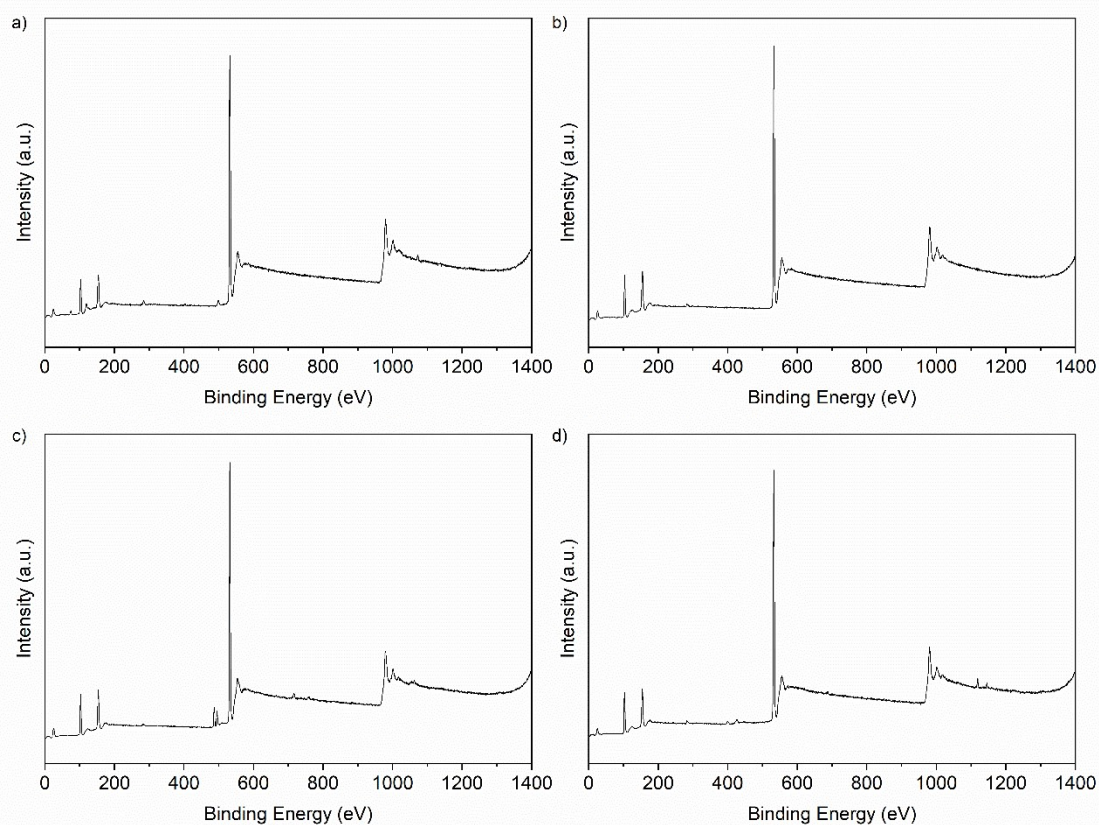


Figure S4. XPS survey plots of a) H-Y, b) DeAl-H-Y c) Sn-deAl-H-Y d) Ga-deAl-H-Y.

Supplementary table.

Table S1. Atomic content of the catalysts obtained from XPS.

| Catalyst | C | O | Si | Al | Ga | Sn | Na | Si/Al | Si/Sn | Si/Ga |
|------------|------|-------|-------|------|------|------|------|--------|-------|-------|
| HY | 3.47 | 64.07 | 26.48 | 4.99 | 0 | 0 | 0.98 | 5.31 | na | na |
| deAl-HY | 2.27 | 65.16 | 32.57 | 0 | 0 | 0 | 0 | na | na | na |
| Sn-deAl-HY | 1.73 | 64.82 | 32.39 | 0 | 0 | 1.06 | 0 | na | 30.56 | na |
| Ga-deAl-HY | 2.69 | 64.01 | 32.43 | 0 | 0.75 | 0 | 0 | 270.25 | na | 43.24 |