Electronic Supplementary Information (ESI)

Selective dehydrogenation of bioethanol to acetaldehyde over basic USY zeolites

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Table S1. Characterisation of the acidity of MgO, Ca-HAP and selected zeolite samples.[a]

Catalyst	$C_{Brønsted}$ (μmol g^{-1})	C_{Lewis} (μmol g^{-1})
MgO	0.0	0.0
Ca-HAP	0.0	1.5
USY	0.0	7.1
NaUSY-0.1	0.0	0.0

[a] FTIR spectroscopy of adsorbed pyridine.

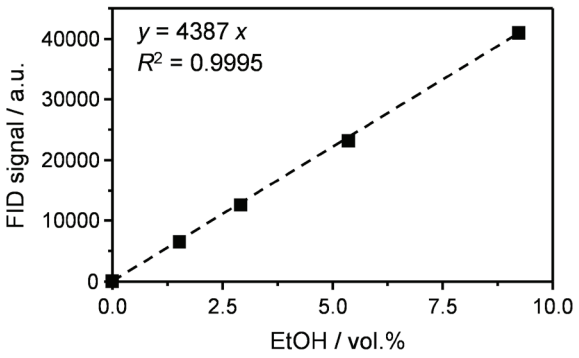

Figure S1. Calibration curve measured for the quantification of ethanol by GC analysis.

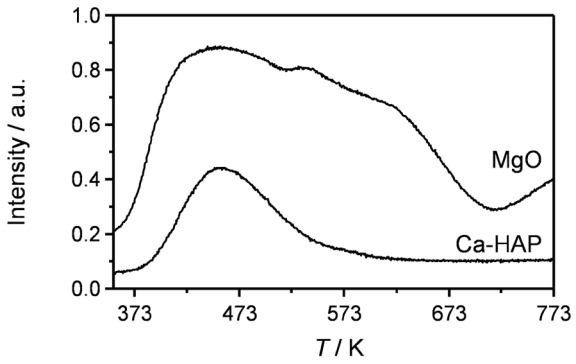

Figure S2. CO_2 (m/z = 44) signal during the CO_2-TPD of MgO and Ca-HAP.

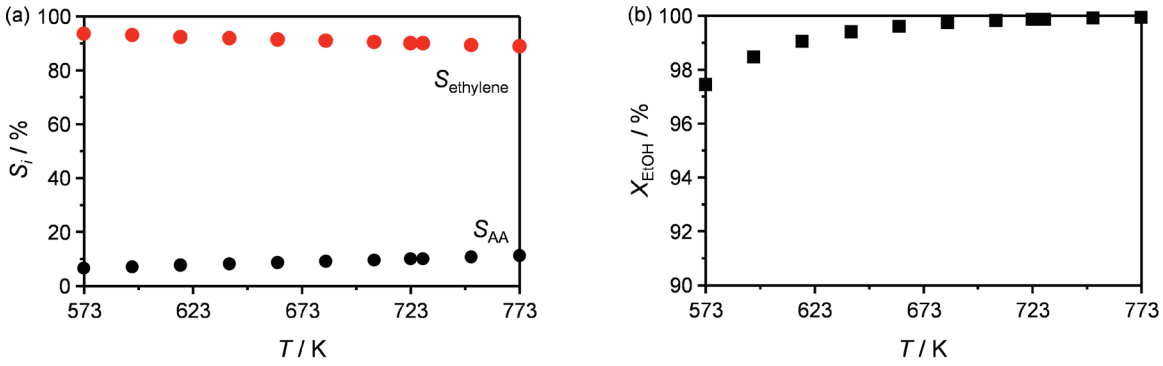

Figure S3. (a) Equilibrium selectivity to AA and ethylene of the parallel dehydration and dehydrogenation and (b) conversion of the dehydrogenation of ethanol calculated with the software Aspen Plus® V8.0 using the RGIBBS unit. The feed composition was set as 5 vol.% EtOH/He and the pressure at 1 bar.