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## **Supporting Information**

Scheme S1 mechanism for the conversion of ethanol to butadiene

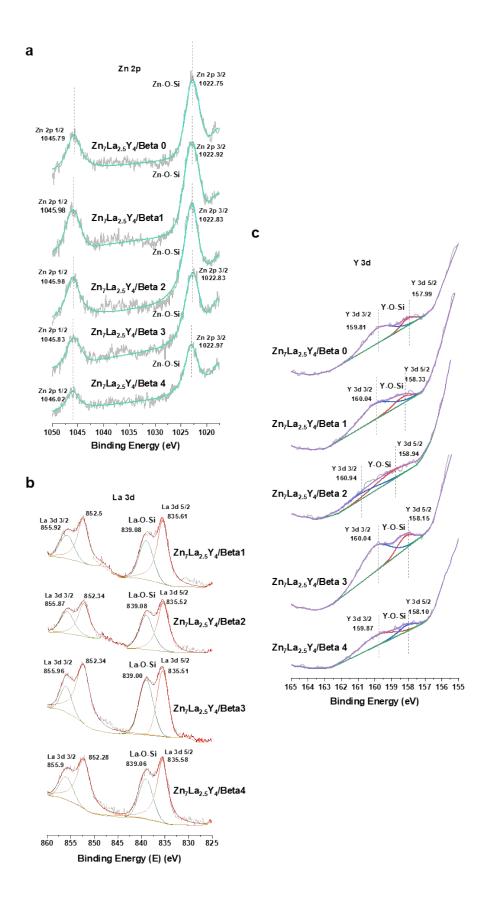


Fig. S1 the XP spectra of all ZnLaY/Beta catalysts