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## **Supporting Information**

## Zn-substituted heteropoly acid as efficient catalysts for the addition-esterification of 1-hexene

## Figures:

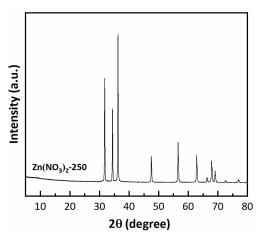


Fig. S1 XRD pattern of Zn(NO<sub>3</sub>)<sub>2</sub>-250<sup>sa</sup>

 $<sup>^{</sup>sa}$  Zn(NO<sub>3</sub>)<sub>2</sub> was calcined at 250 ° C for 4 h and labeled as Zn(NO<sub>3</sub>)<sub>2</sub>-250.

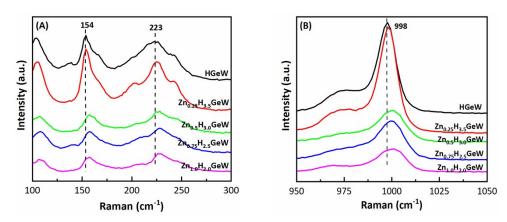


Fig. S2 Raman spectra of Zn-substituted germanium tungstic acid catalysts (A: 100-300 cm<sup>-1</sup>; B: 950-1050 cm<sup>-1</sup>)

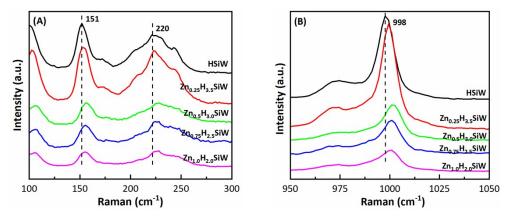


Fig. S3 Raman spectra of Zn-substituted silicotungstic acid catalysts (A:  $100-300~cm^{-1}$ ; B:  $950-1050~cm^{-1}$ )