

## Supporting Information

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

Figures:

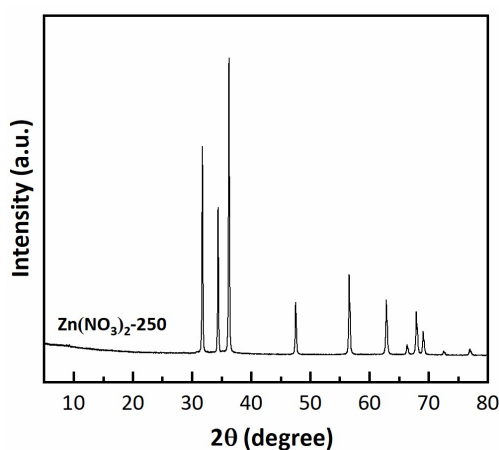


Fig. S1 XRD pattern of Zn(NO<sub>3</sub>)<sub>2</sub>-250<sup>sa</sup>

<sup>sa</sup> 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.

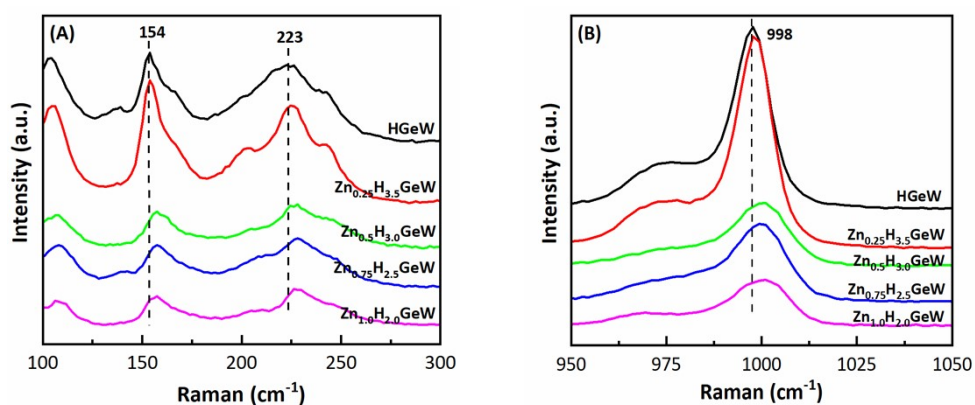


Fig. S2 Raman spectra of Zn-substituted germanium tungstic acid catalysts  
(A: 100-300 cm<sup>-1</sup>; B: 950-1050 cm<sup>-1</sup>)

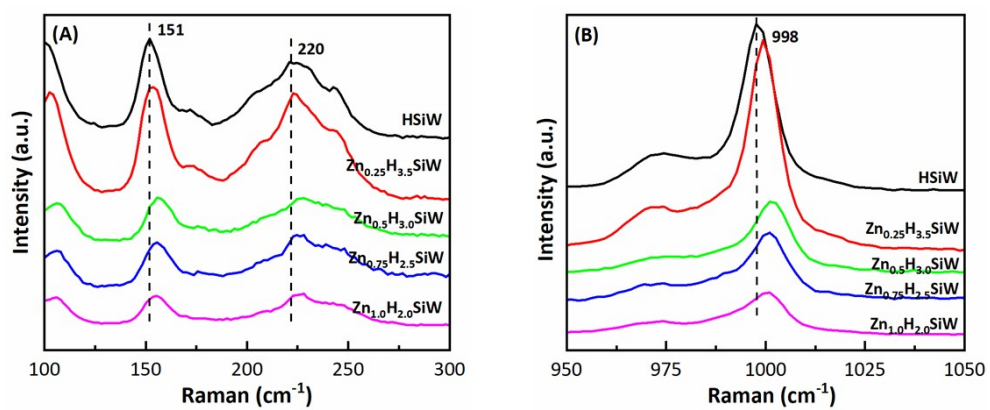


Fig. S3 Raman spectra of Zn-substituted silicotungstic acid catalysts  
(A: 100-300 cm<sup>-1</sup>; B: 950-1050 cm<sup>-1</sup>)