Effective Conversion of Biomass-Derived Ethyl Levulinate into

γ-Valerolactone over Commercial Zeolite Supported Pt

Catalysts

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Fig. S1 XPS spectra in the Pt 4f region for 1%Pt/SAPO-34 and 1%Pt/MOR



Fig. S2 XPS spectra in the Pt 4f region for 1%Pt/SAPO-34 and 1%Pt/MOR



Fig. S3 XPS spectra in the Pt 4f region for 1%Pt/HY and 1%Pt/USY



Fig. S4 $\rm NH_3\text{-}TPD$ for all zeolite supported catalysts from 80 to 550 $^{\circ}\rm C$



Fig. S5 size distribution of 1%Pt/MCM-22



Fig. S6 size distribution of 1%Pt/MCM-41



Fig. S7 size distribution of 1%Pt/ZSM-35



Fig. S8 size distribution of 1%Pt/ZSM-5



Fig. S9 size distribution of 1%Pt/HY



Fig. S10 size distribution of 1%Pt/USY



Fig. S11 size distribution of 1%Pt/MOR



Fig. S12 size distribution of 1%Pt/SAPO-34



Fig. S13 clear TEM image of 1%Pt/MCM-22







Fig. S15 clear TEM image of 1%Pt/SAPO-34



Fig. S16 clear TEM image of 1%Pt/ZSM-35



Fig. S17 clear TEM image of 1%Pt/ZSM-5



Fig. S18 clear TEM image of 1%Pt/HY



Fig. S19 clear TEM image of 1%Pt/USY



Fig. S20 clear TEM image of 1%Pt/MOR



Fig. S21 BJH pore size distribution of 1%Pt/MCM-22



Fig. S22 BJH pore size distribution of 1%Pt/MCM-41



Fig. S23 BJH pore size distribution of 1%Pt/SAPO-34



Fig. S24 BJH pore size distribution of 1%Pt/ZSM-35



Fig. S25 BJH pore size distribution of 1%Pt/ZSM-5



Fig. S26 BJH pore size distribution of 1%Pt/HY



Fig. S27 BJH pore size distribution of 1%Pt/USY



Fig. S28 BJH pore size distribution of 1%Pt/MOR



Fig. S29 Comparison of fresh and used 1%Pt/ZSM-35 XRD pattern from 10 to 40 degree



Fig. S30 Comparison of fresh and used 1%Pt/ZSM-35 XRD pattern from 30 to 70 degree



Fig. S31 Comparison of fresh and used 1%Pt/ZSM-35 XPS pattern



Fig. S32 TEM image of used 1%Pt/ZSM-35