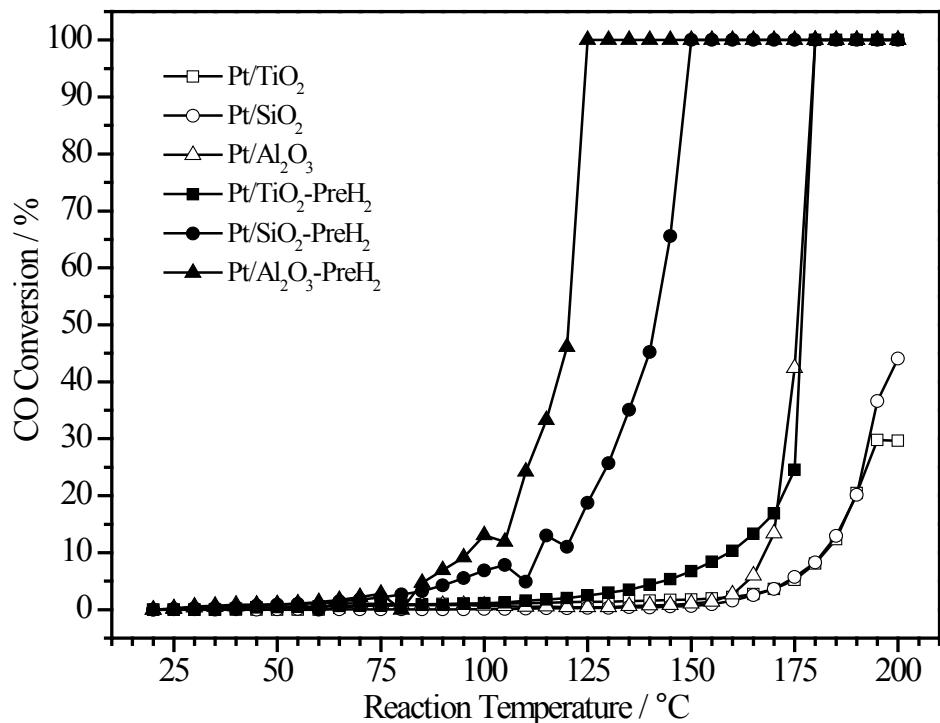
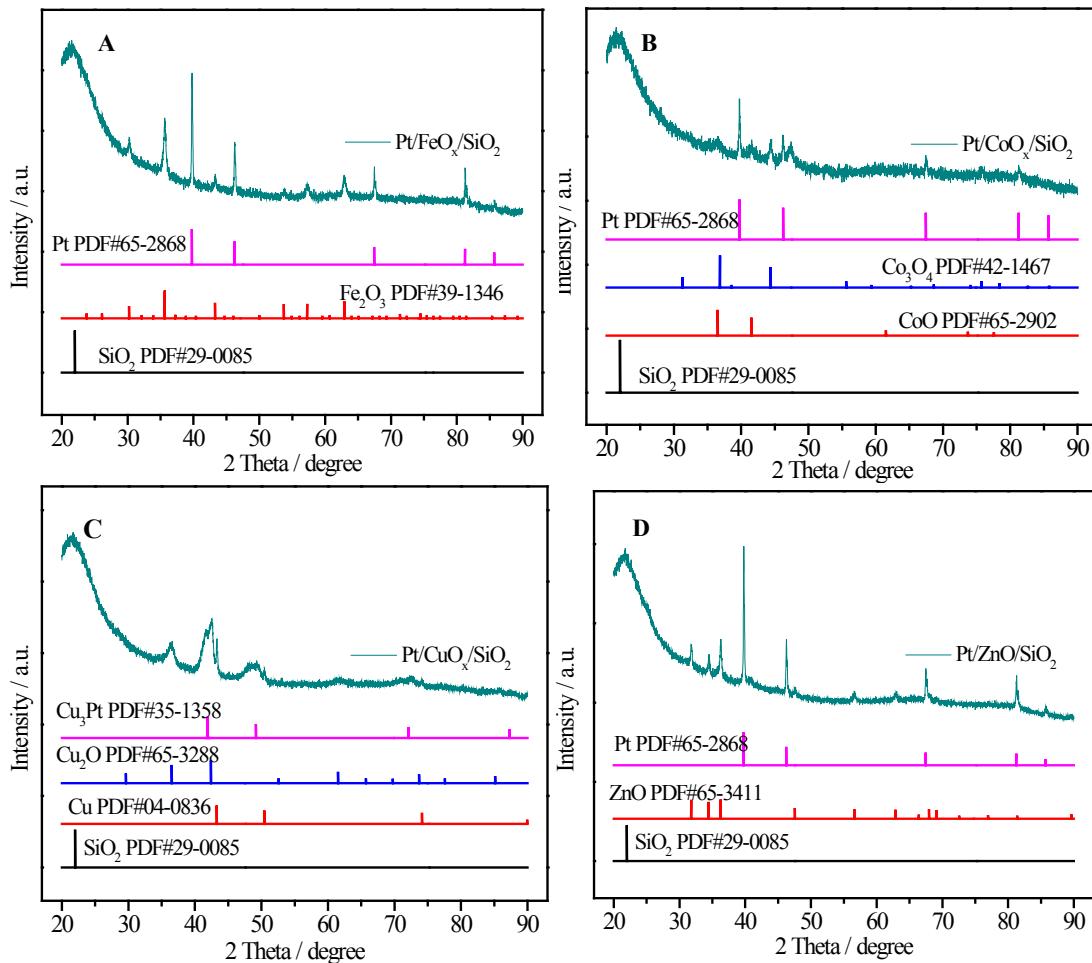


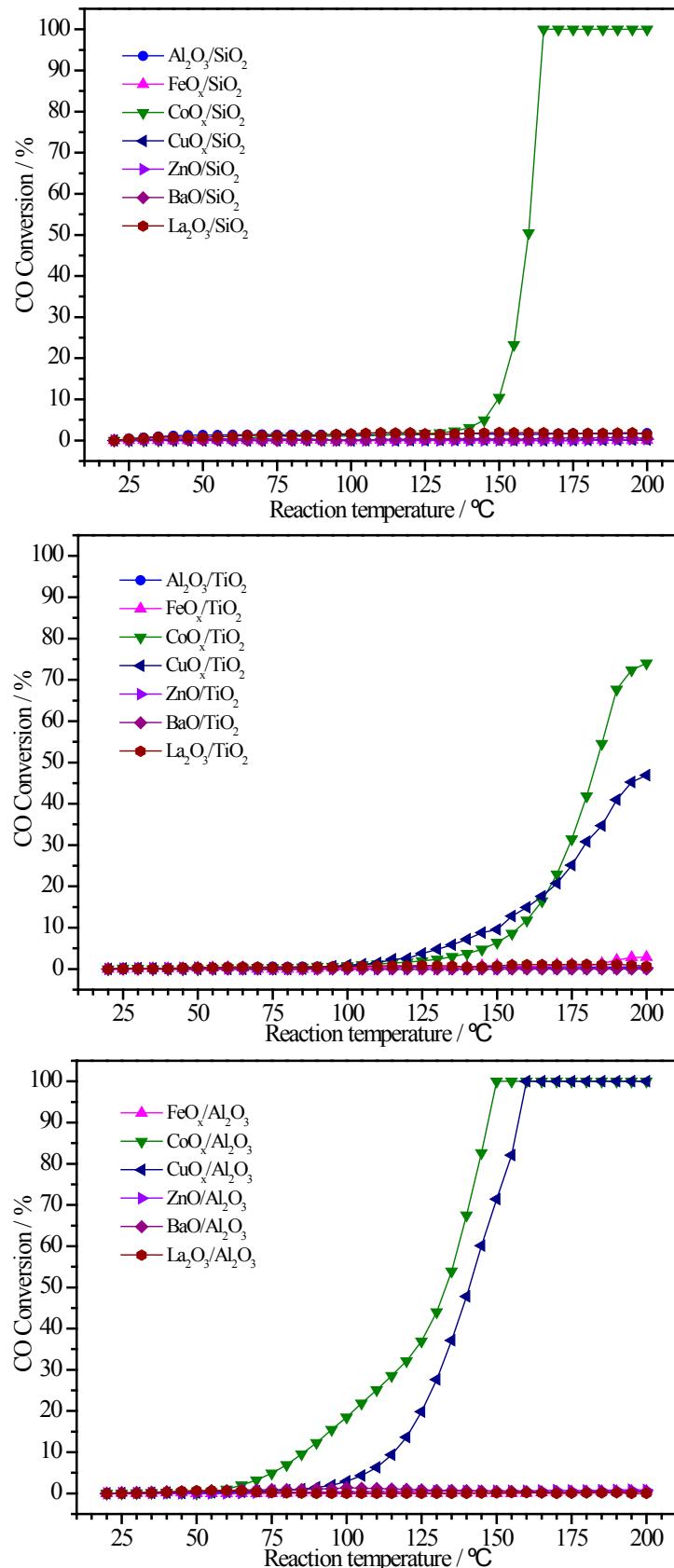
## Supplementary Information



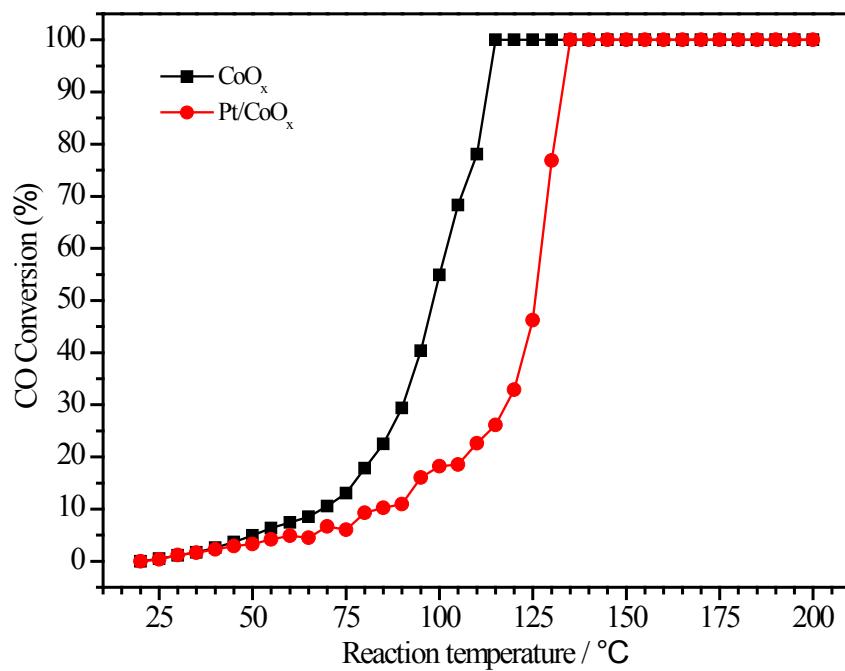
**Figure S1.** CO conversions on Pt/SiO<sub>2</sub>, Pt/TiO<sub>2</sub> and Pt/Al<sub>2</sub>O<sub>3</sub> catalysts with/without being pretreated in 4% H<sub>2</sub>/He.



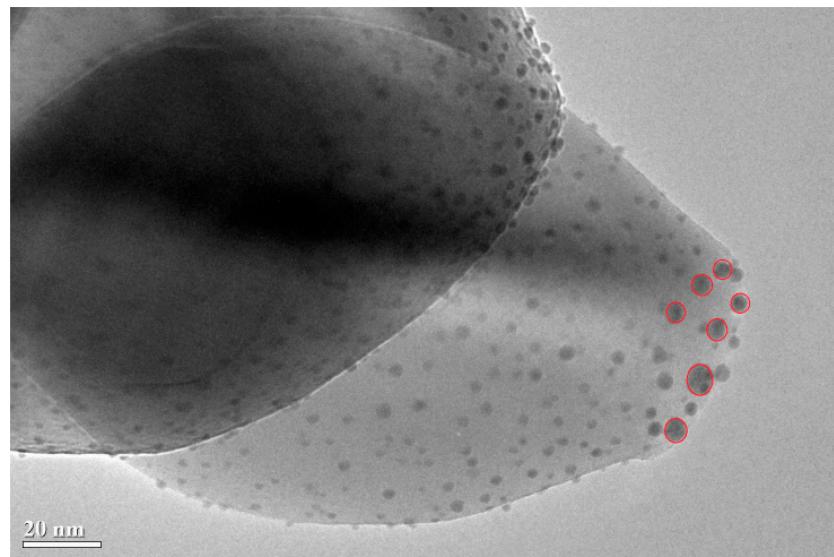
**Figure S2.** XRD patterns of several spent Pt catalysts.



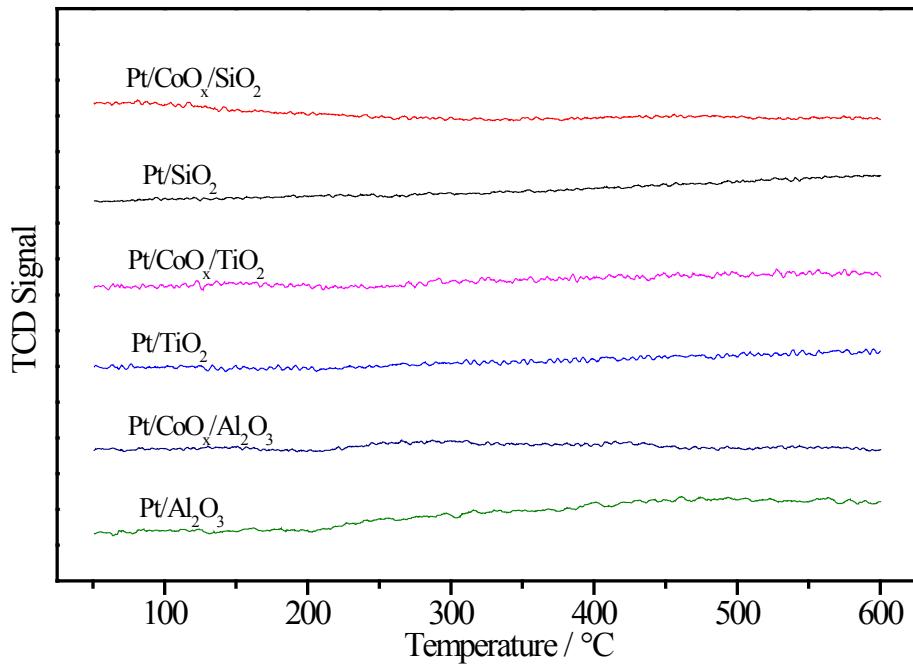
**Figure S3.** CO conversions on  $\text{MO}_x/\text{SiO}_2$ ,  $\text{MO}_x/\text{TiO}_2$ , and  $\text{MO}_x/\text{Al}_2\text{O}_3$  (modified supports) as a function of reaction temperature.



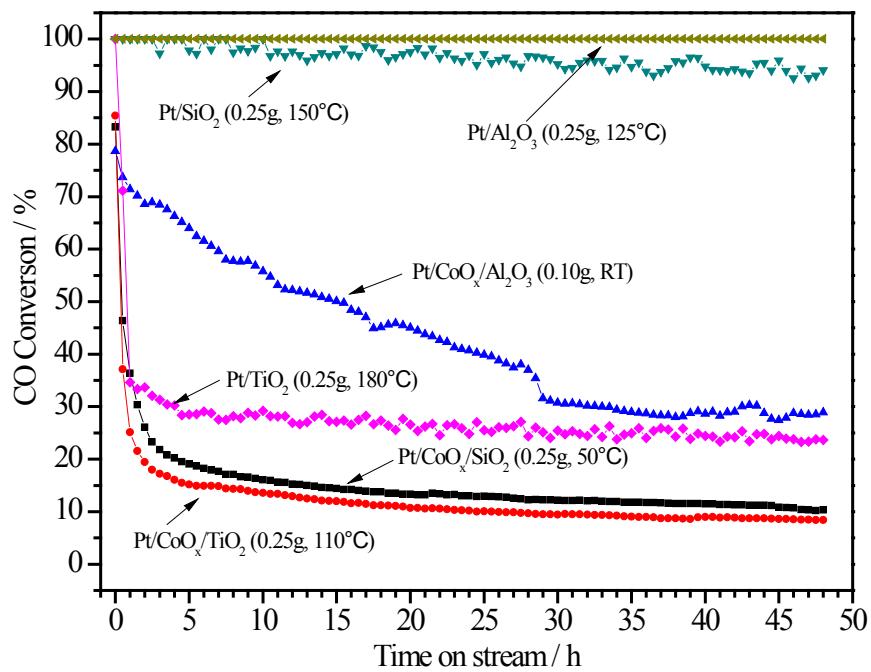
**Figure S4.** CO conversion on  $\text{Pt}/\text{CoO}_x$  and  $\text{CoO}_x$  catalysts as a function of reaction temperature.



**Figure S5.** Additional TEM image of the spent  $\text{Pt}/\text{CoO}_x/\text{Al}_2\text{O}_3$ .



**Figure S6.** CO<sub>2</sub>-TPD profiles of Pt/CoO<sub>x</sub>/SiO<sub>2</sub>, Pt/CoO<sub>x</sub>/TiO<sub>2</sub>, Pt/CoO<sub>x</sub>/Al<sub>2</sub>O<sub>3</sub> and the corresponding supports.



**Figure S7.** CO conversions on Pt catalysts as a function of reaction time. All these catalysts were