Supporting Information for:

States and Function of Potassium Carbonate Species in the Poly-Titanate Nanobelt Supported Catalysts Used for Efficient NOx Storage and Reduction

Yuxia Zhang, Ming Meng *, Fangfang Dai, Tong Ding, Rui You

(Tianjin Synergic Innovation Center for Chemistry and Chemical Engineering, Tianjin Key Laboratory of Applied Catalysis Science and Engineering, School of Chemical Engineering & Technology, Tianjin University, Tianjin 300072, P. R. China)

* Corresponding author

TEL/FAX: +86-(0)22-2789-2275

E-mail: mengm@tju.edu.cn

Supporting Figure Captions

Fig.S1 (a) XRD pattern and (b) TEM image of the poly-titanate support $K_2Ti_8O_{17}$

Fig.S2 NOx storage curves of the regenerated catalysts Pt-*x*K_2CO_3/$K_2Ti_8O_{17}$:

(a) Pt-5%K_2CO_3/ $K_2Ti_8O_{17}$, (b) Pt-15%K_2CO_3/ $K_2Ti_8O_{17}$, (c) Pt-20%K_2CO_3/$K_2Ti_8O_{17}$,

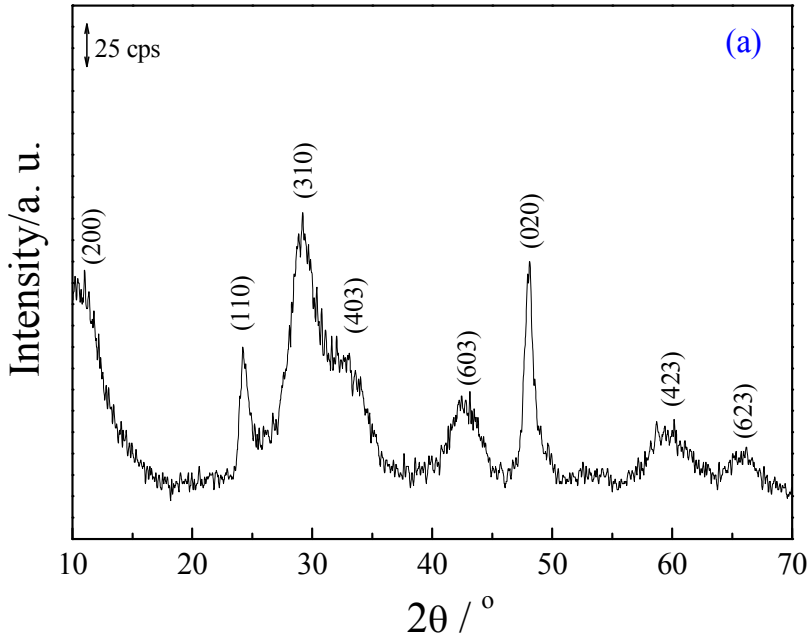
(d) Pt-25%K_2CO_3/$K_2Ti_8O_{17}$, (e) Pt-30%K_2CO_3/ $K_2Ti_8O_{17}$

Fig.S3 FT-IR spectra of the fresh catalysts Pt-*x*K_2CO_3/$K_2Ti_8O_{17}$:

(a) Pt-5%K_2CO_3/ $K_2Ti_8O_{17}$, (b) Pt-15%K_2CO_3/ $K_2Ti_8O_{17}$, (c) Pt-20%K_2CO_3/$K_2Ti_8O_{17}$,

(d) Pt-25%K_2CO_3/$K_2Ti_8O_{17}$, (e) Pt-30%K_2CO_3/ $K_2Ti_8O_{17}$

Figure S1


25 cps
(a)
Intensity/a. u.
(200)
(110)
(310)
(403)
(603)
(020)
(423)
(623)
10
20
30
40
50
60
70
2θ / °

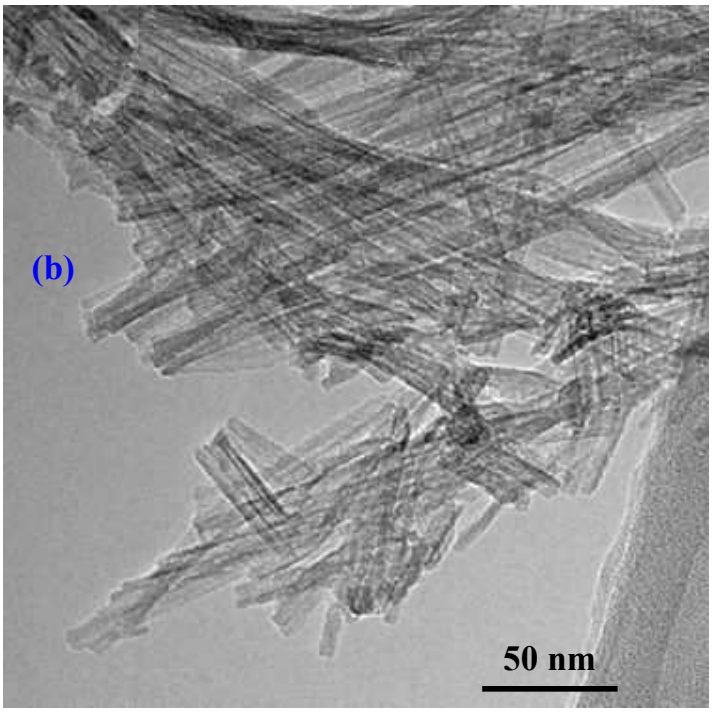

(b)
50 nm

Figure S2

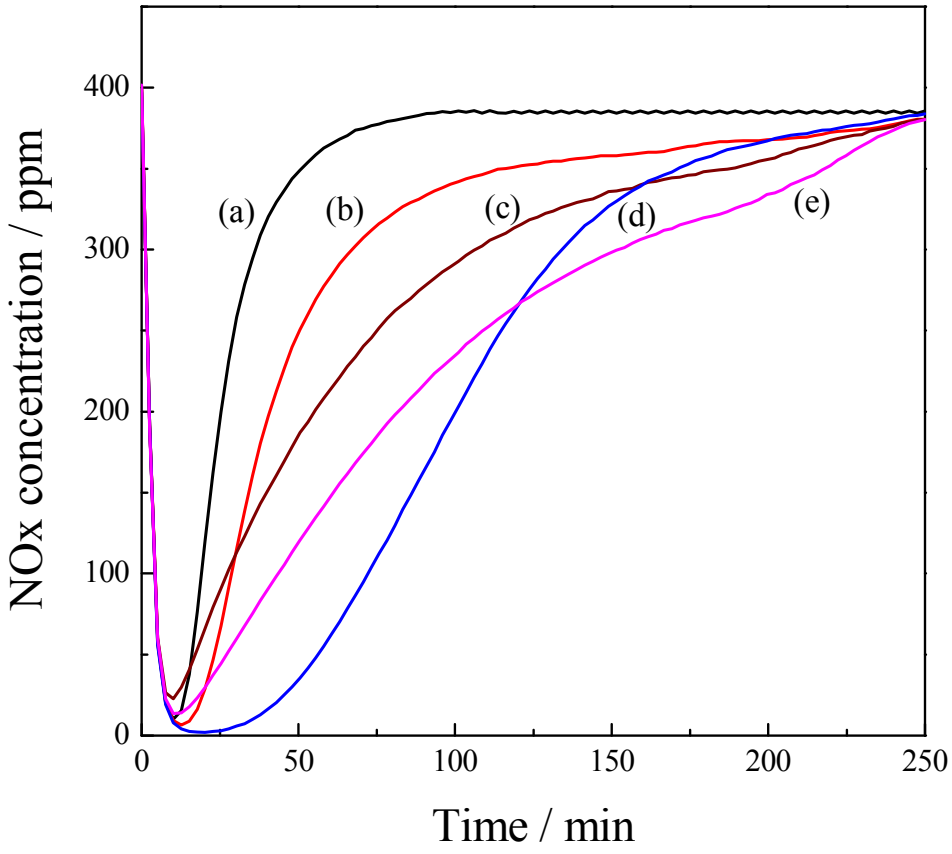
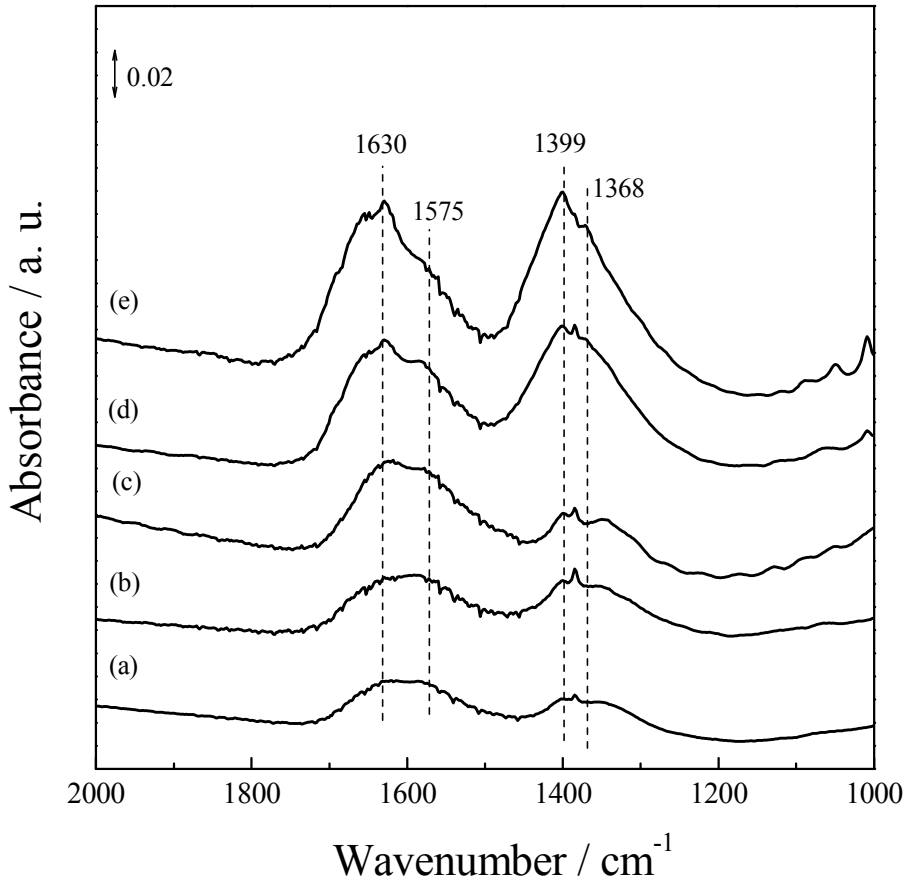

NOx concentration / ppm
Time / min
(a)
(b)
(c)
(d)
(e)
0
100
200
300
400
0
50
100
150
200
250

Figure S3


0.02
1630
1399
1368
1575
(e)
(d)
(c)
(b)
(a)
Absorbance / a. u.
2000
1800
1600
1400
1200
1000
Wavenumber / cm-1