Supplementary Information for ***Acta Phys. -Chim. Sin.*** **2013**, *29* (3): 460-466
doi: 10.3866/PKU.WHXB201301071

β-环糊精诱导的三氧化钼水溶性的增加

邵志成　　宋乐新*　　滕　越　　党　政　　夏　娟
(中国科学技术大学化学系, 合肥 230026)

Increased Water Solubility of Molybdenum Trioxide Induced by β-Cyclodextrin

SHAO Zhi-Cheng　SONG Le-Xin*　TENG Yue　DANG Zheng　XIA Juan
(*Department of Chemistry, University of Science and Technology of China, Hefei 230026, P. R. China*)

*Corresponding author.　Email: solexin@ustc.edu.cn; Tel: +86-551-63492002.

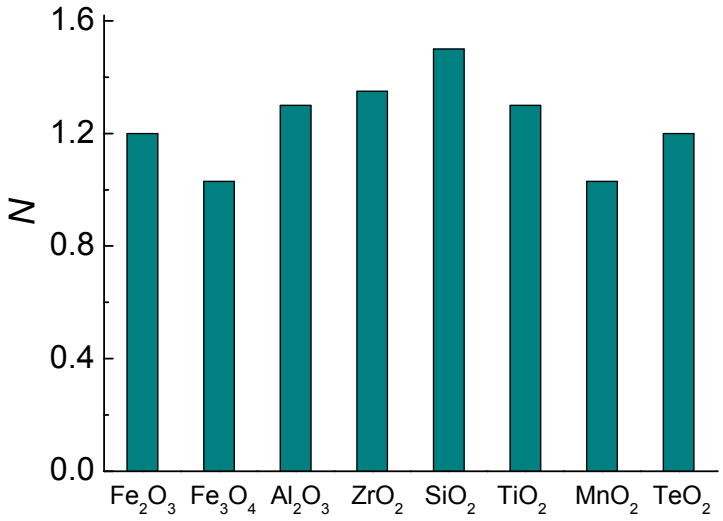

Fig.S1 Mass ratios (*N*) of metal oxides dissolved in aqueous solution of β-CD (2×10^{-3} mol·L^{-1}, 50 mL) to those dissolved in deionized distilled water (50 mL) at 333 K

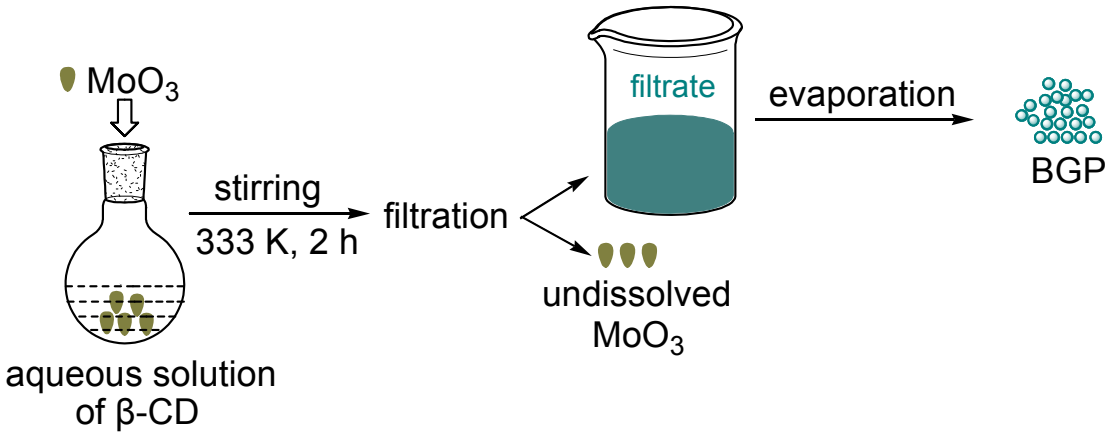

Fig.S2 An illustration for the preparation of BGP

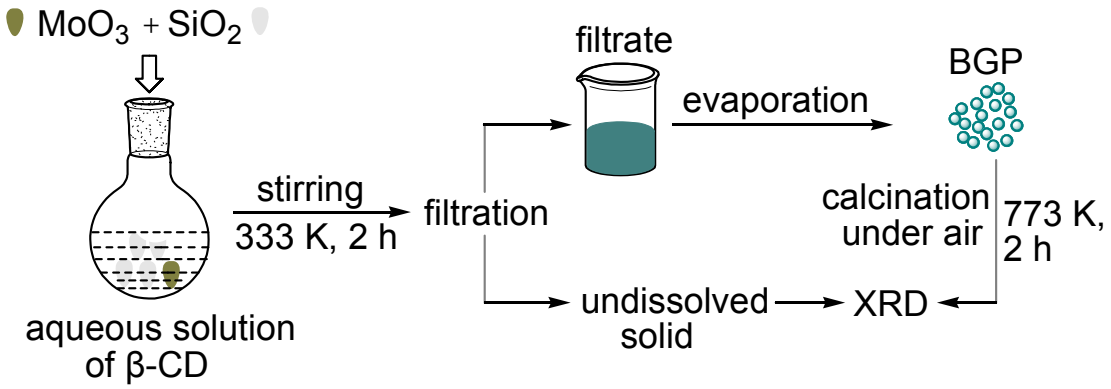

Fig.S3 An illustration for the purification experiment

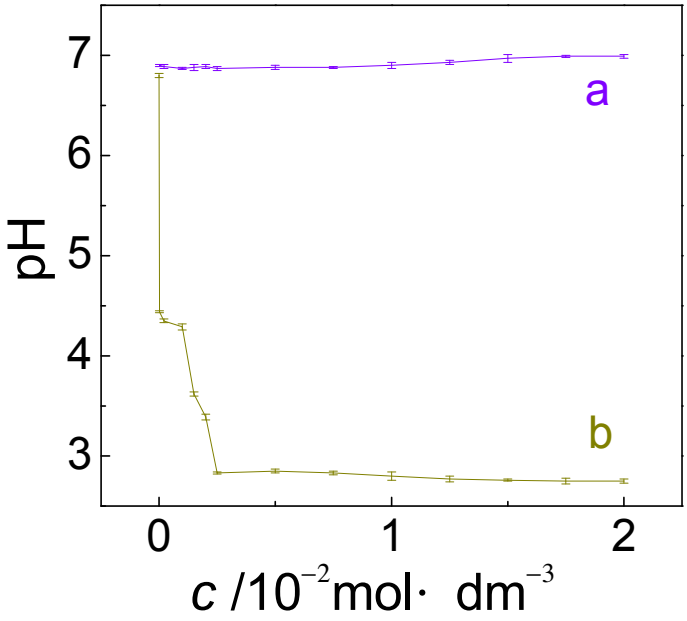

Fig.S4 The variation of pH with the increase of the concentration of β-CD: in the absence (a) and presence (b) of MoO_3 (144 mg, 1 mmol)

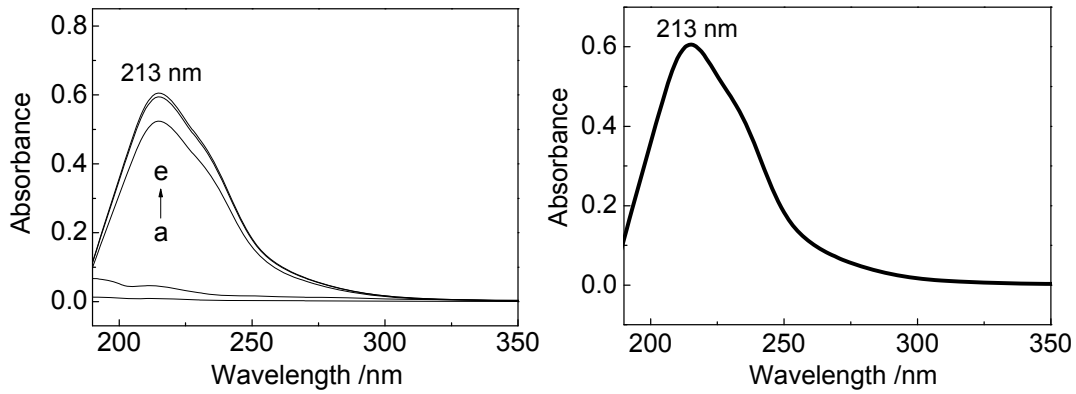

Fig.S5 Left: UV-Vis spectra of (a) an aqueous solution saturated with MoO_3, (b) the aqueous solution of glucose and the filtrates (c~e) after the reactions of MoO_3 with glucose at 298 K

The concentrations of glucose from c to e are 0.2, 2.0 and 4.0 × 10^{-2} mol·L^{-1}. Right: UV-Vis spectra of the filtrate after the reaction of MoO_3 with maltose at 298 K.

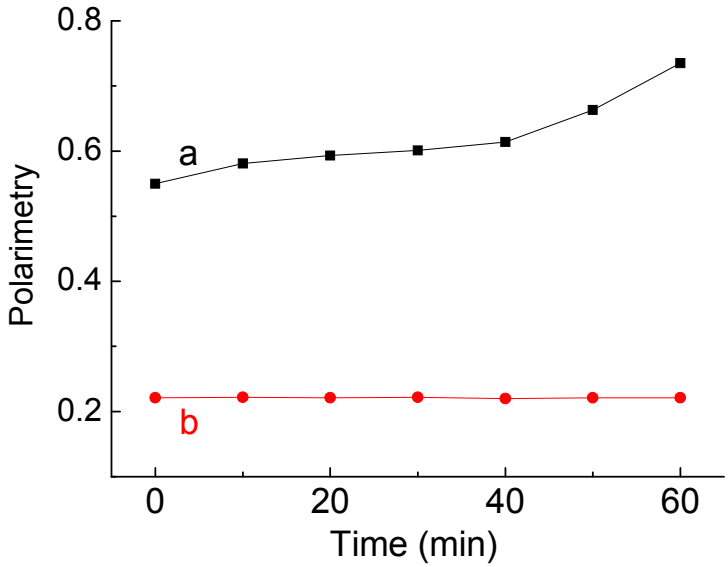

Fig.S6 Polarimetries of solutions of (a) β-CD (pH=3) and (b) the bluish product at different time intervals

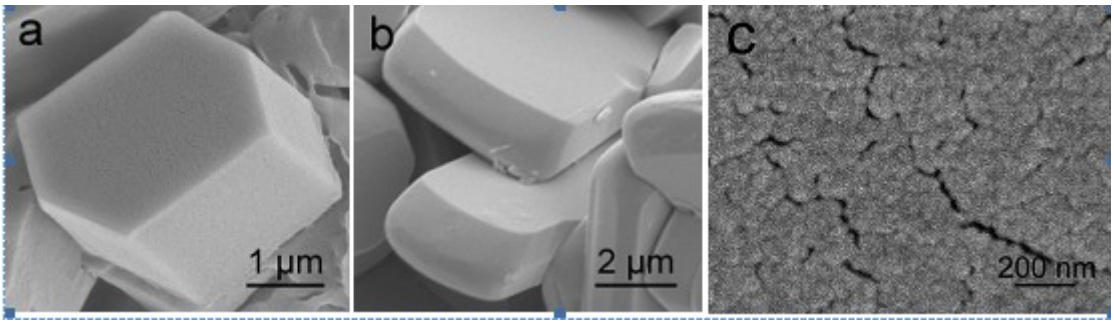

Fig.S7 FE-SEM images of (a) β-CD, (b) MoO_3 and (c) BGP

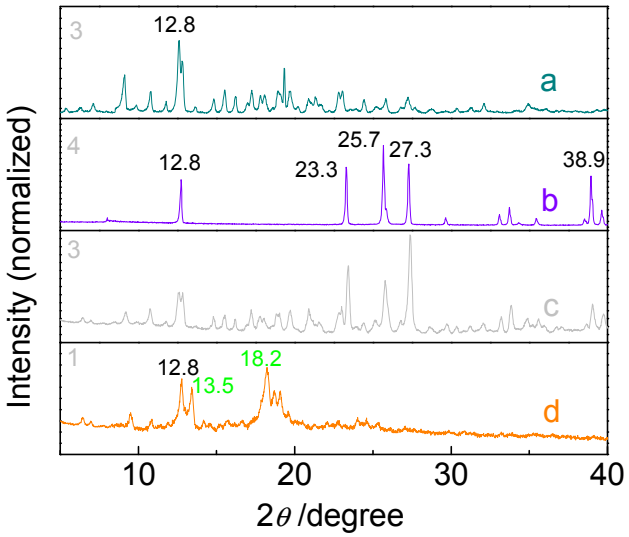

Fig.S8 XRD patterns of (a) β-CD, (b) MoO_3, (c) the mixture of β-CD with MoO_3 and (d) BGP. Relative signal intensity was normalized to the intensity of the peak at 18.2° in curve d

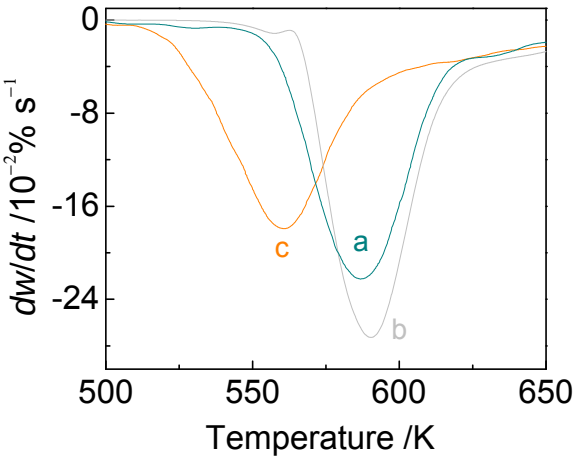

Fig.S9 DTG profiles of (a) β-CD, (b) the mixture of β-CD with MoO_3 and (c) BGP

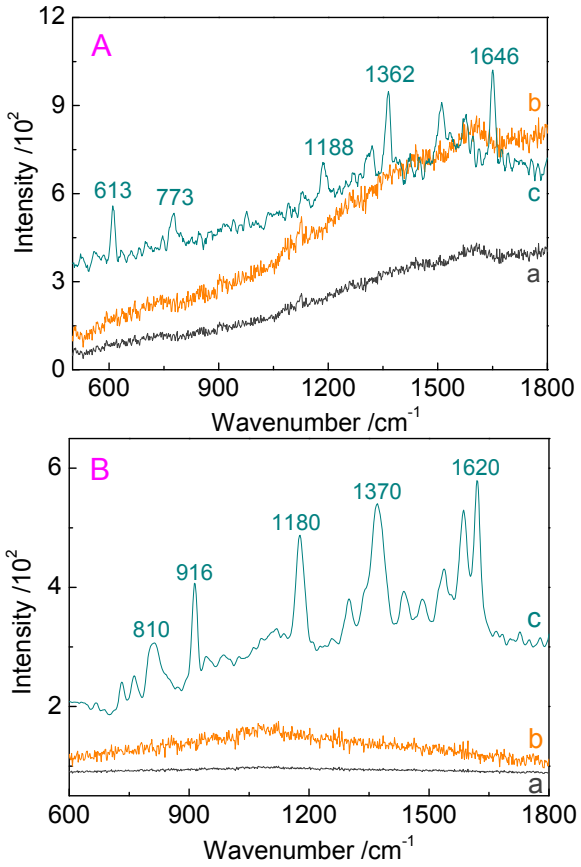

Fig.S10 SERS spectra of (A) R6G and (B) CV on silica substrate (a), β-CD (b) and BGP (c)

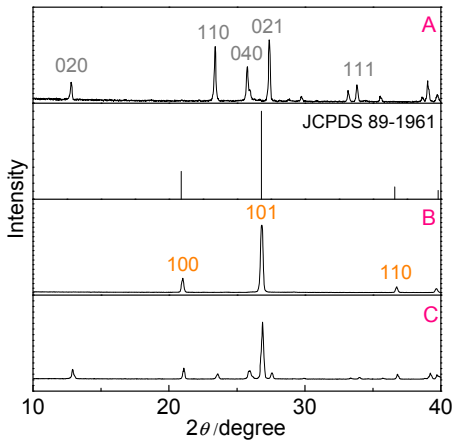

Fig.S11 XRD patterns of the sintering product (A), the undissolved solid with the use of aqueous solution of β-CD (B) and deionized distilled water (C)