

## CuWO<sub>4</sub> 促进金红石 TiO<sub>2</sub> 光催化降解苯酚及其可能机理

罗邦德 熊贤强 许宜铭\*

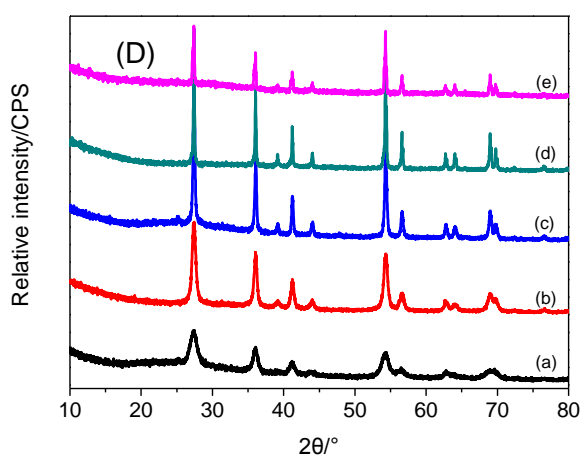
(浙江大学化学系, 硅材料国家重点实验室, 杭州 310027)

## Improved Photocatalytic Activity for Phenol Degradation of Rutile TiO<sub>2</sub> on the Addition of CuWO<sub>4</sub> and Possible Mechanism

LUO Bang-De XIONG Xian-Qiang XU Yi-Ming\*

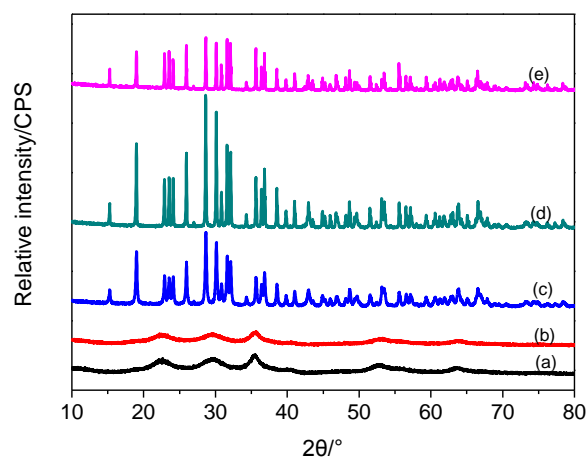
(State Key Laboratory of Silicon, Department of Chemistry, Zhejiang University, Hangzhou 310027, P. R. China)

\*Corresponding author. Email: xuym@zju.edu.cn; Tel: +86-571-87952410.



**Fig.S1 XRD patterns of sRT sintered at different temperatures for 3 h**

(a) 150 °C; (b) 400 °C; (c) 600 °C; (d) 800 °C; (e) 1000 °C



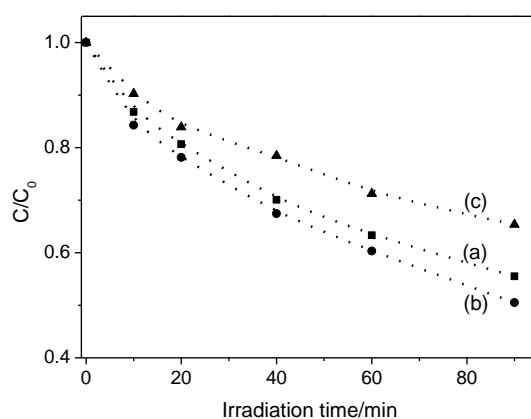
**Fig.S2 XRD patterns of CuWO<sub>4</sub> sintered at different temperatures for 3 h**

(a) 85 °C; (b) 300 °C; (c) 500 °C; (d) 600 °C; (e) 800 °C

**Table S1 BET specific surface area ( $A_{sp}$ ) of sRT and CuWO<sub>4</sub> at different  $T_s$ <sup>a</sup>**

$T_s/^\circ\text{C}$	150	400	600	800	1000
$A_{sp}(\text{sRT})/(\text{m}^2\cdot\text{g}^{-1})$	107.6	35.8	12.6	5.2	0.2
$T_s/^\circ\text{C}$	85	300	500	600	800
$A_{sp}(\text{CuWO}_4)/(\text{m}^2\cdot\text{g}^{-1})$	101.8	66.7	6.7	—	—

<sup>a</sup>All of the specimens were heated at given  $T_s$  for 3 h.  $A_{sp}$  was determined by N<sub>2</sub> adsorption.



**Fig.S3 Photocatalytic degradation of phenol ( $0.43 \text{ mmol}\cdot\text{L}^{-1}$ ) in an air-saturated aqueous suspension containing  $1.0 \text{ g L}^{-1}$  sRT and  $161 \mu\text{mol}\cdot\text{L}^{-1}$  CuWO<sub>4</sub>**

(a) CuWO<sub>4</sub> (500 °C) was directly added into the suspension of sRT (600 °C). The photoreaction was performed under a fast stirring; (b) CuWO<sub>4</sub> (500 °C) and sRT (600 °C) were mixed together in 50 mL of isopropanol. Then the suspension was dried at 90 °C, followed by sintering in air at 450 °C for 0.5 h. The photoreaction was performed under a fast stirring; (c) CuWO<sub>4</sub> (500 °C) was directly added into the suspension of sRT (600 °C). The photoreaction was performed under a slow stirring.