Support Information Sulfur doped MoO₂ hollow nanospheres as a highly sensitive SERS substrate for multiple detections of organic pollutants Xiaoyu Zhou^{a‡}, Xiaoli Zhao^{b‡}, Shuo Gu^a, Fazhi Xie^a, Xiufang Wang^{a*} and Zhi Tang^{b*}

^aSchool of Materials and Chemical Engineering, Anhui Jianzhu University, Hefei Anhui, 230601, China. ^bState Key Laboratory of Environmental Criteria and Risk Assessment, Chinese Research Academy of Environmental Sciences, Beijing 100012, China.

* Correspondence: E-mail: wxfrye159@sina.com, tzwork@hotmail.com



Fig. S1. SEM images of the (a-b) S-MoO₂(1 wt%) (c-d) and S-MoO₂(3 wt%).



Fig. S2. (a) The SERS signals of R6G with different concentrations and (b) Raman intensity of peaks at 612 cm^{-1} for R6G as a function of the concentration on the MoO₂ substrate.



Fig S3. Raman spectra of S-MoO₂ (2 wt%) as an enhancement substrate with different concentrations of (a) MB and (c) RhB.



Fig. S4 The SERS signals of R6G (10^{-5} M) on S-MoO₂ (2 wt%) under different excited light of different wavelengths (532 and 758).



Fig. S5 The SERS mapping and signal intensity distribution at (a) 612 cm^{-1} and (b) 1360 cm⁻¹ of 10^{-5} M R6G.