Supporting Information

Microstructure construction and composition modification of CeO_2 macrospheres with superior performance

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Figure S1. The TG-DSC isotherm of the Ce(COOH)₃ precursor.



Figure S2. The crystal structure of Ce(COOH)₃



Figure S3. FE-SEM image of Ce(COOH)₃: (a) Ce(COOH)₃ synthesized by using formic acid instead of DMF; (b) Ce(COOH)₃ synthesized by using formic acid and dimethylamine instead of DMF.



Figure S4. FE-SEM image of the time--dependent experiments. (a) 1.5hours, (b) 3hours, (c)

12hours.



Figure S5. The N₂ adsorption-desorption isotherms of Ce(COOH)₃ macrospheres



Figure S6. The N₂ adsorption-desorption isotherms of CeO₂ macrospheres



Figure S7. The N₂ adsorption-desorption isotherms of Ce(COOH)₃ hollow macrospheres



Figure S8. The N₂ adsorption-desorption isotherms of CeO₂ hollow macrospheres



Figure S9. Adsorption rate of Cr(VI) on the CeO₂.



Figure S10. The N₂ adsorption-desorption isotherms of Bi/CeO₂ macrospheres



Figue S11 & Table S1. SEM-EDAX analysis of Bi/CeO₂ macrospheres