

Electronic supplementary information

Graphene-like cobalt selenide nanostructures: template-free solvothermal synthesis, characterization and waster water treatment

Jing-Feng Zhao,¹ Ji-Ming Song,^{1*} Cheng-Cheng Liu,¹ Bian-Hua Liu², He-Lin Niu,¹
Chang-Jie Mao,¹ Sheng-Yi Zhang,¹ Yu-Hua Shen¹ and Zhong-Ping Zhang^{2*}

¹ School of Chemistry and Chemical Engineering, Key Laboratory of Functional Inorganic Materials Chemistry of Anhui Province, Anhui University, Hefei, Anhui, 230039, P. R. China.

² Institute of Intelligent Machines, Chinese Academy of Sciences, Hefei, Anhui 230031, P. R. China.

* To whom correspondence should be addressed. E-mail: songjm@ustc.edu.cn; zpzhang@iim.ac.cn.

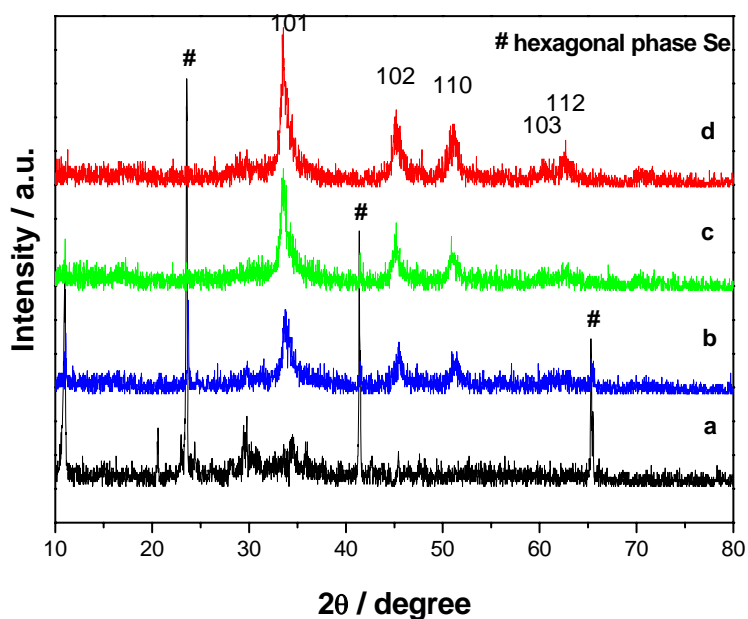


Figure S1 The evolution of the XRD patterns of the $\text{Co}_{0.85}\text{Se}$ nanocrystals obtained at different temperatures for 24h: (a) 140 °C; (b) 160 °C; (c) 180 °C; (d) 200 °C.

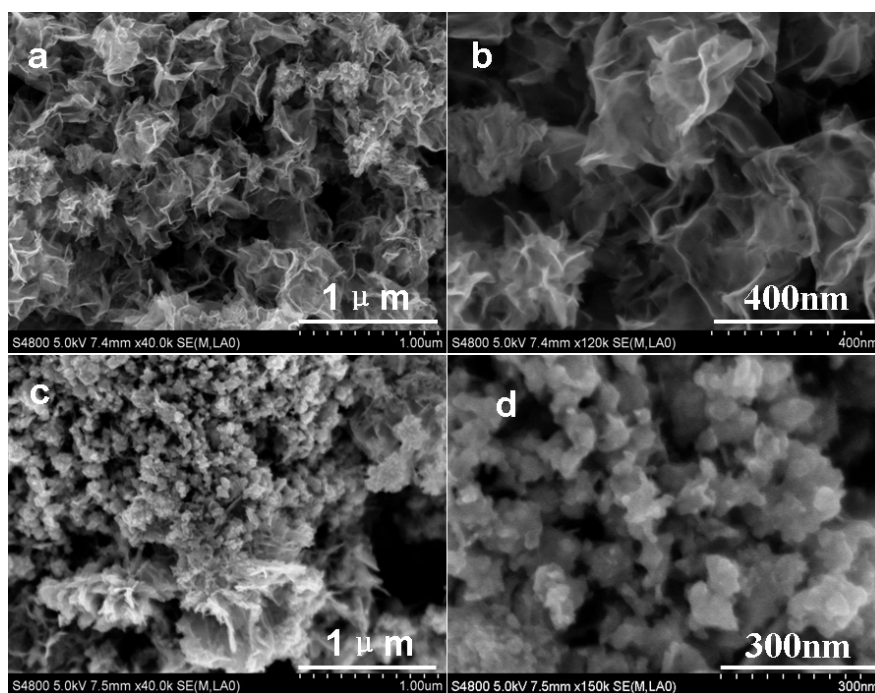


Figure S2 SEM patterns of the $\text{Co}_{0.85}\text{Se}$ nanocrystals obtained at different temperatures for 24h: (a, b) 160 °C; (c, d) 200 °C.

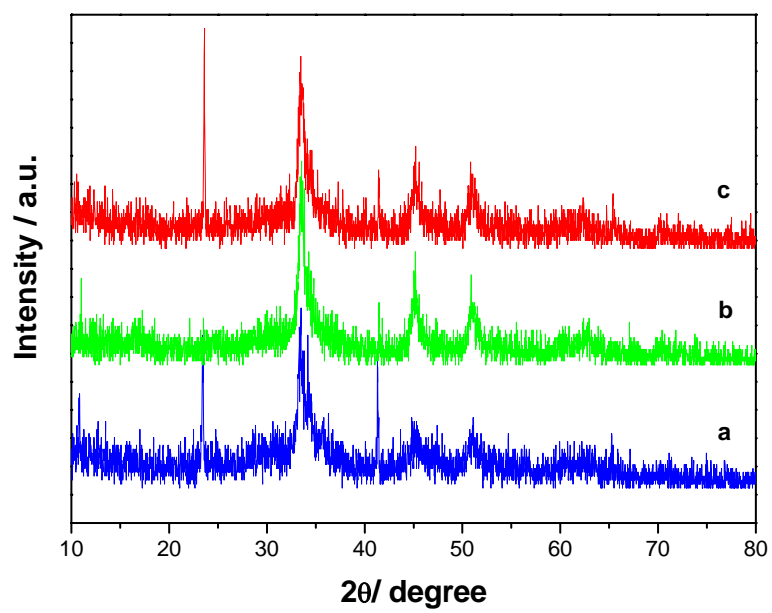


Figure S3 XRD patterns of $\text{Co}_{0.85}\text{Se}$ nanocrystals prepared at 180°C for different reaction time: (a) 12 h; (b) 24 h; (c) 48 h.

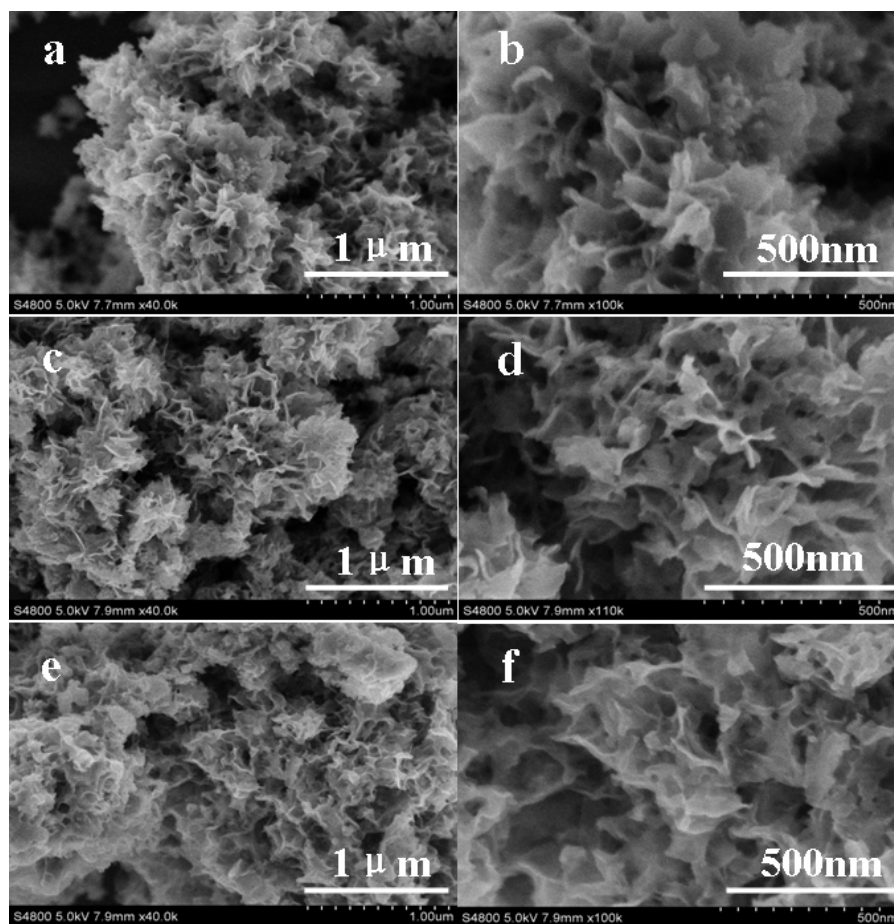


Figure S4 SEM images of Co_{0.85}Se nanostructures prepared at 180 °C, but under different reaction time:(a, b) 12h;
(c, d) 24h; (e, f) 48h.

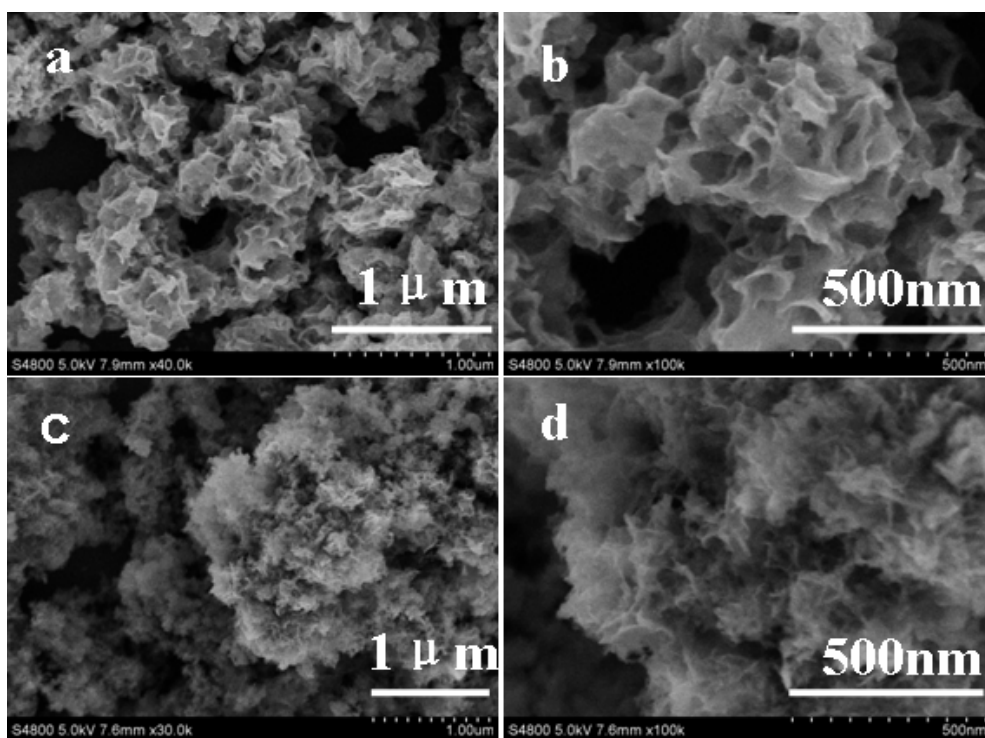


Figure S5 SEM images of $\text{Co}_{0.85}\text{Se}$ nanostructures prepared at different molar ratios of $\text{Co}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$ to Na_2SeO_3 ($n_{\text{Co}}: n_{\text{Se}}$): (a, b) 0.85:1; (c, d) 2:1.