

## Supporting information

### Template free-synthesis of cobalt-iron chalcogenides [Co<sub>0.8</sub>Fe<sub>0.2</sub>L<sub>2</sub>, L = S, Se] and their Robust Bifunctional Electrocatalysis for Water Splitting Reaction and Cr(VI) Reduction

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S1	EDAS of Co <sub>0.8</sub> Fe <sub>0.2</sub> S <sub>2</sub> and Co <sub>0.8</sub> Fe <sub>0.2</sub> Se <sub>2</sub>	2
S2	Solid state UV-Visible DRS spectra of Co <sub>0.8</sub> Fe <sub>0.2</sub> S <sub>2</sub> and Co <sub>0.8</sub> Fe <sub>0.2</sub> Se <sub>2</sub>	2
S3	Peak current Vs Cr(VI) concentration and different scan rates of Co <sub>0.8</sub> Fe <sub>0.2</sub> S <sub>2</sub> and Co <sub>0.8</sub> Fe <sub>0.2</sub> Se <sub>2</sub> materials	3

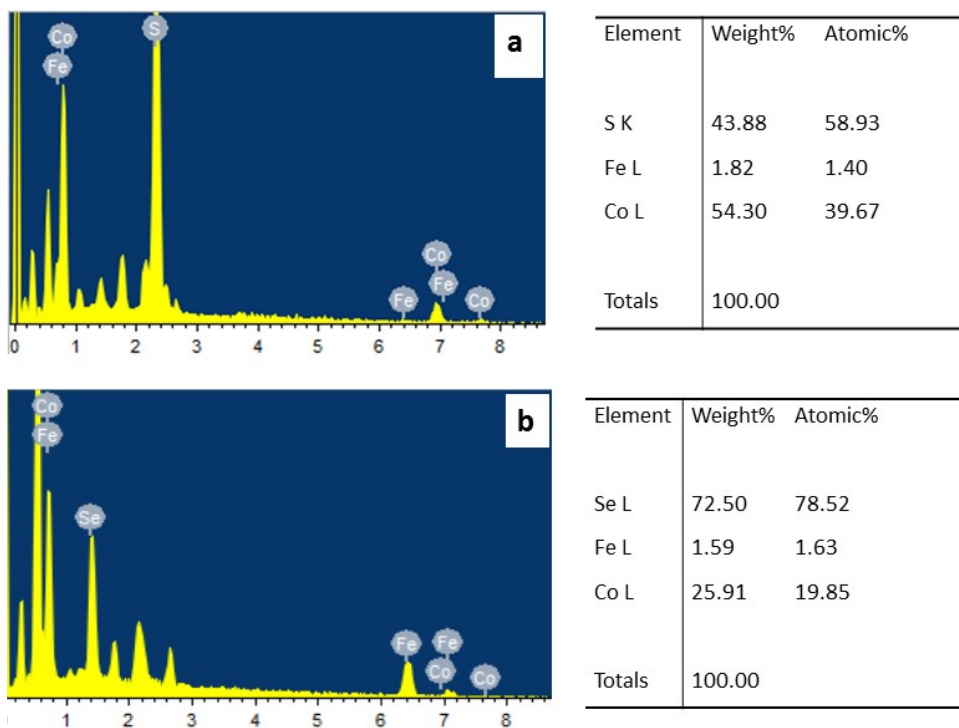


Figure S1. Elemental distribution by EDAS of  $\text{Co}_{0.8}\text{Fe}_{0.2}\text{S}_2$  and  $\text{Co}_{0.8}\text{Fe}_{0.2}\text{Se}_2$  respectively.

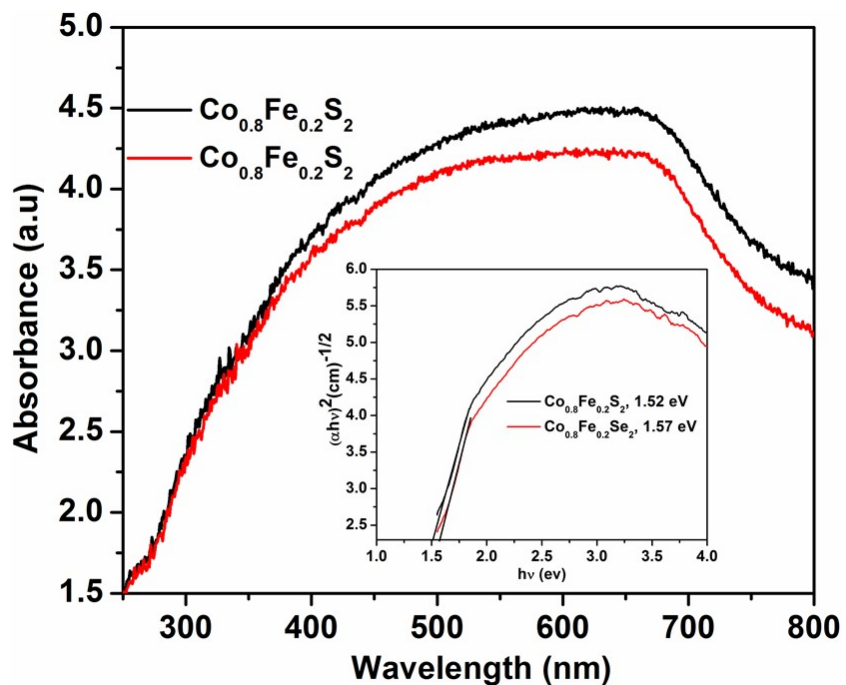


Figure S2. Solid state UV-visible DRS spectra of  $\text{Co}_{0.8}\text{Fe}_{0.2}\text{S}_2$  and  $\text{Co}_{0.8}\text{Fe}_{0.2}\text{Se}_2$  materials. The inset representing the band gap of the materials.

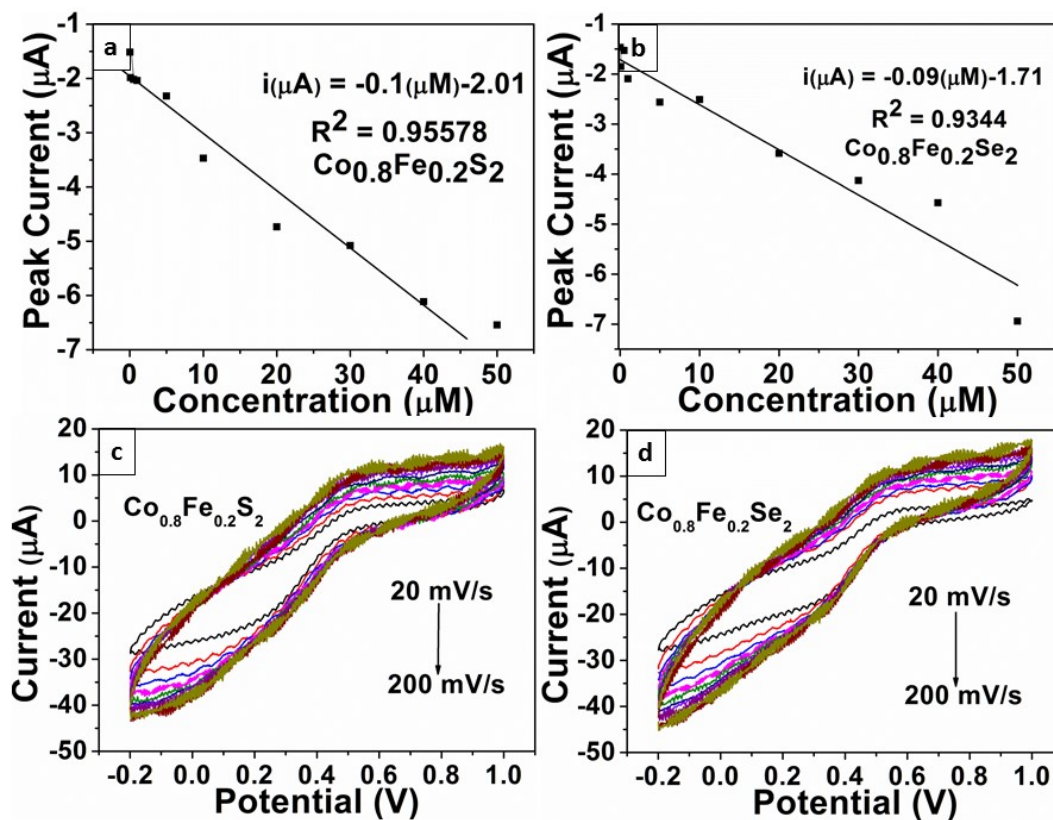


Figure S3. (a, b) Calibration plot of peak current against various Cr(VI) concentrations (c, d) Different scan rates ranging from 20 mV/s to 200 mV/s of  $\text{Co}_{0.8}\text{Fe}_{0.2}\text{S}_2$  and  $\text{Co}_{0.8}\text{Fe}_{0.2}\text{Se}_2$  materials.