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## **Supplementary Materials**

## Improving the electrocatalytic oxygen evolution by in situ

## constructing 1D Co<sub>9</sub>S<sub>8</sub>/Co(OH)F heterointerfaces

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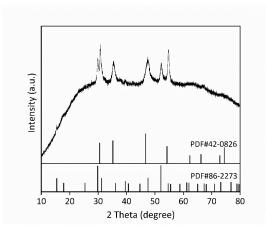
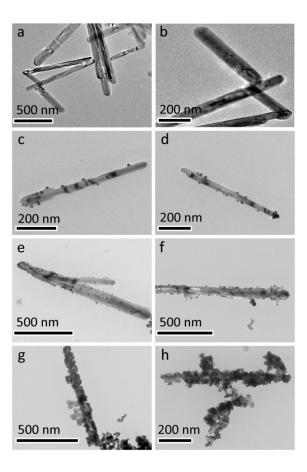


Figure S1. XRD pattern of the obtained  $Co_9S_8/Co_{1-x}S$ .



 $\label{eq:Figure S2} Figure S2. Typical TEM images of Co(OH)F (a, b), Co_9S_8/Co(OH)F-1 (c, d), Co_9S_8/Co(OH)F-2 (e, f), and Co_9S_8/Co_{1:x}S (g, h).$ 

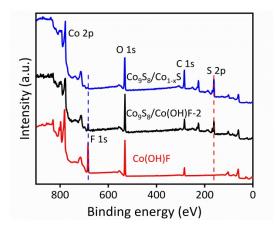


Figure S3. XPS survey pattern of Co(OH)F, Co<sub>9</sub>S<sub>8</sub>/Co(OH)F-2, and Co<sub>9</sub>S<sub>8</sub>/Co<sub>1-x</sub>S.

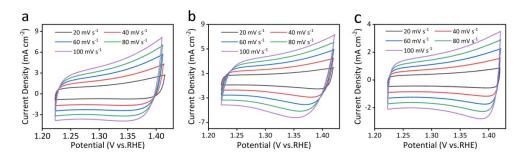


Figure S4. CV curves of Co<sub>9</sub>S<sub>8</sub>/Co(OH)F-2 (a), Co<sub>9</sub>S<sub>8</sub>/Co(OH)F-1 (b), and Co(OH)F (c) performed at different scan rates.