## Supporting Information for

One-pot synthesis of Nanosheet-assembled hierarchical MoSe<sub>2</sub>/CoSe<sub>2</sub>

microcages for the enhanced performance of electrocatalytic hydrogen evolution

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S1. XPS spectra of MC11 composite, (a) full spectrum, (b) Mo 3d spectrum, (c) Co 2p spectrum, and (d) Se 3d spectrum.

S2. EDX spectrum of MC11 composite, showing an atomic ratio of Mo: Co: Se very close to 1: 1: 2.

S3. EDX mapping images of M11, which show a homogeneous distribution of selenium, molybdenum and cobalt throughout the microcage.

S4. Tafel plots of the MoSe<sub>2</sub>/CoSe<sub>2</sub> composite including MC11, MC31 and MC13, respectively.

S5. Nyquist plots of the MoSe<sub>2</sub>/CoSe<sub>2</sub> composite including MC11, MC31 andMC13, respectively. The inset shows the fitted results of the partial circle using simplified Randles equivalent circuit.



Figure S1.



Figure S2.



Figure S3.



Figure S4.



Figure S5.