Supporting Information

Efficient photocatalytic hydrogen production over Eosin Y-sensitized MoS2

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**Fig. S1.** SEM images of MoS$_2$ sample recovered after four runs of H$_2$-evolving reaction.

**Fig. S2.** EDS analyses of the MoS$_2$ samples (a) as-prepared and (b) recovered after four runs of H$_2$-evolving reaction.
Fig. S3. XPS survey spectra of MoS$_2$ samples as-prepared and recovered after after four runs of H$_2$-evolving reaction.

![XPS survey spectra](image)

Fig. S4. UV-vis diffuse reflectance spectra of MoS$_2$ samples as-prepared and recovered after four runs of H$_2$-evolving reaction.

![UV-vis diffuse reflectance spectra](image)

Fig. S5. Fluorescence quenching of EY (0.01 mM) by MoS$_2$ in aqueous TEOA solution (pH = 7.0)