Title: Preparation of 1D cubic Cd$_{0.8}$Zn$_{0.2}$S solid solution nanowires using levelling effect of TGA and improved photocatalytic H$_2$-production activity

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Electronic supporting information (ESI)

Fig. S1 XRD pattern of the as prepared Cd$_{0.8}$Zn$_{0.2}$S solid solution at 180 °C.

Fig. S2 SEM image of the as-prepared Cd$_{0.8}$Zn$_{0.2}$S solid solution at 180 °C.
Fig. S3 Cycle operation of H\textsubscript{2} evolution on the as-prepared 1D Cd\textsubscript{0.8}Zn\textsubscript{0.2}S solid solution nanowires.

Fig. S4 XRD pattern of the 1D Cd\textsubscript{0.8}Zn\textsubscript{0.2}S solid solution nanowires after cycling for 12 h.

Fig. S3 Photocatalytic activities of the Cd\textsubscript{x}Zn\textsubscript{1-x}S with different Cd-Zn ratio, x = 1, 0.8, 0.6, 0.4, 0.2.