Supporting Information

For

Freestanding single layers of non-layered material γ-Ga_2O_3 as an efficient photocatalyst for overall water splitting

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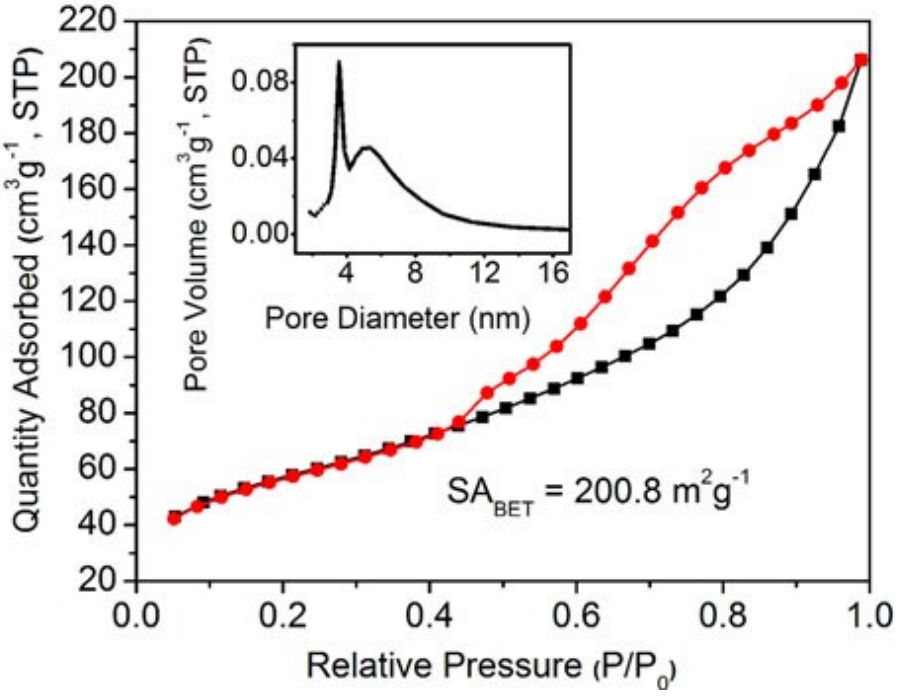

Fig. S1 N_2 adsorption–desorption isotherms of γ-Ga_2O_3 nanosheets.

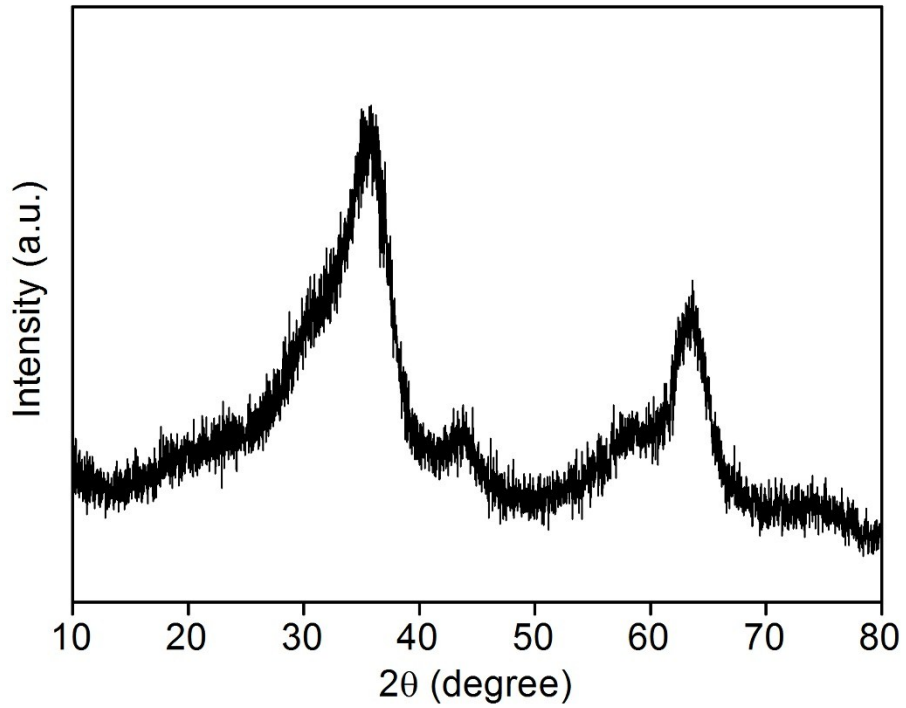

Fig. S2 XRD pattern of bulk γ-Ga_2O_3 prepared according to the literature.

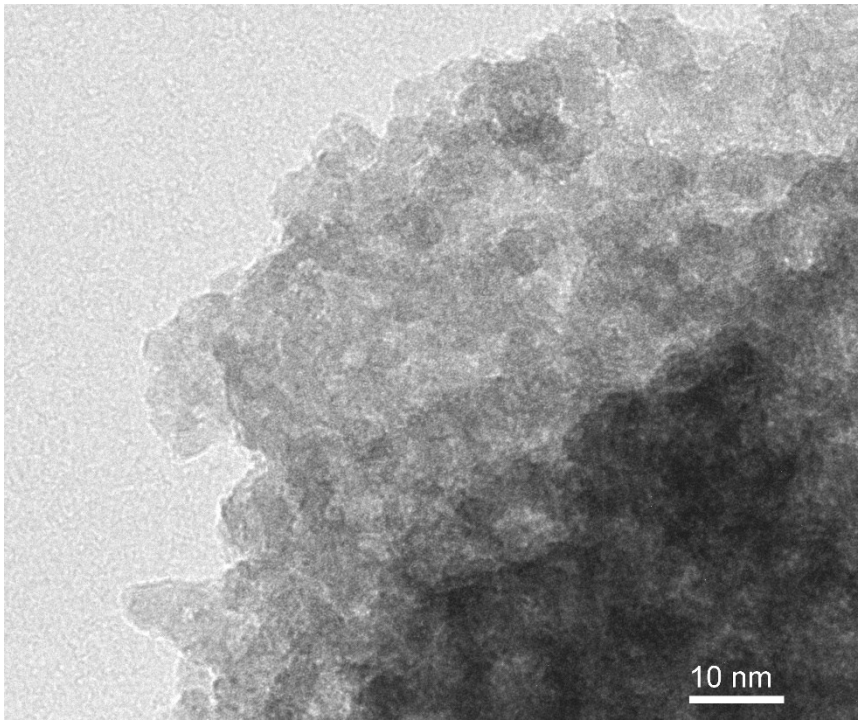

Fig. S3 TEM image of bulk γ-Ga_2O_3.

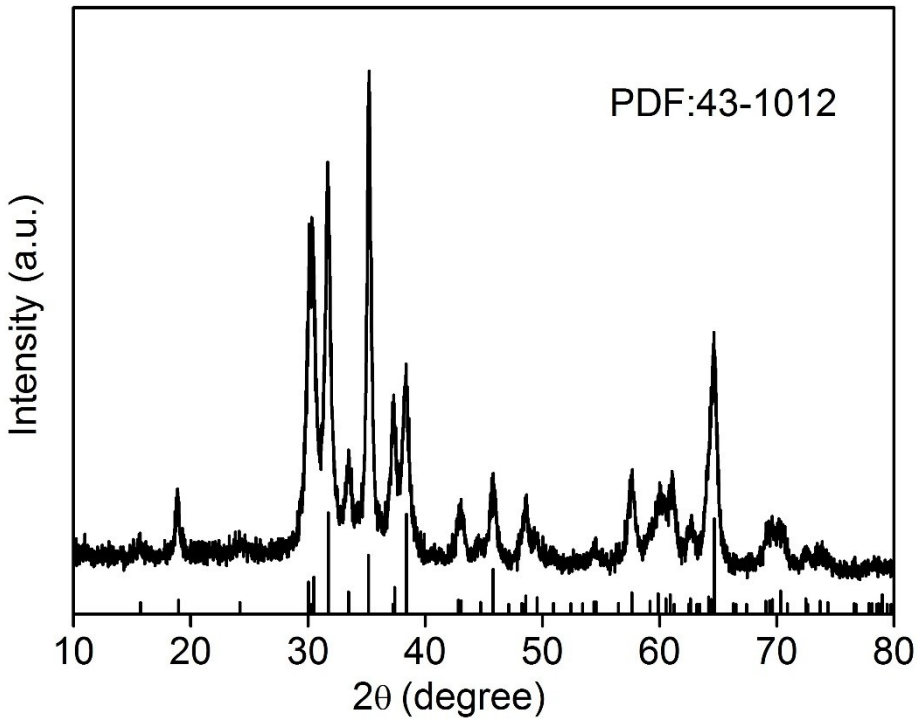

Fig. S4 XRD pattern of β-Ga_2O_3 synthesized using γ-Ga_2O_3 nanosheets sintering at 973 k for 3 h.

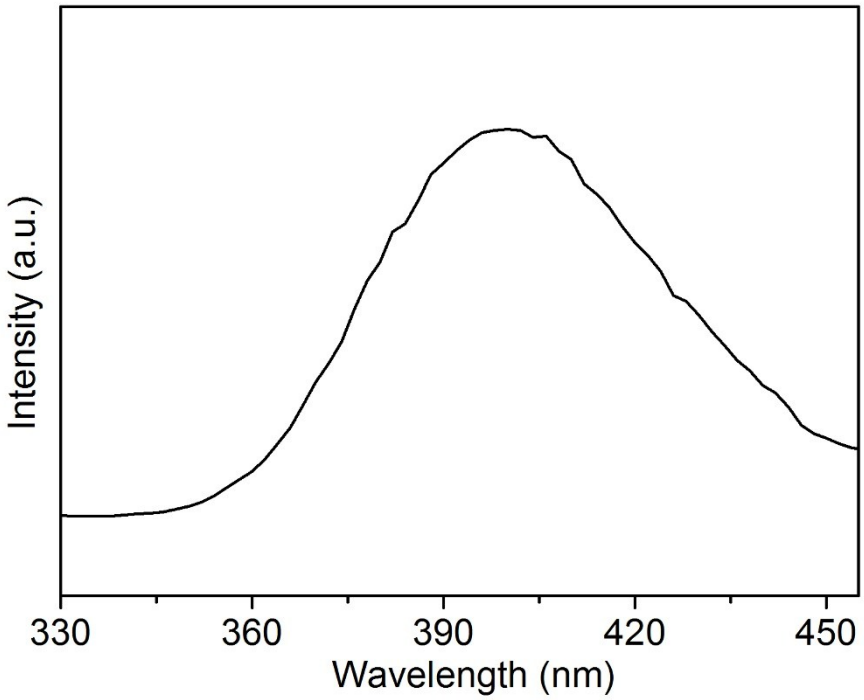

Fig. S5 Room temperature PL spectrum of the γ-Ga_2O_3 monolayers upon excitation at 250 nm.

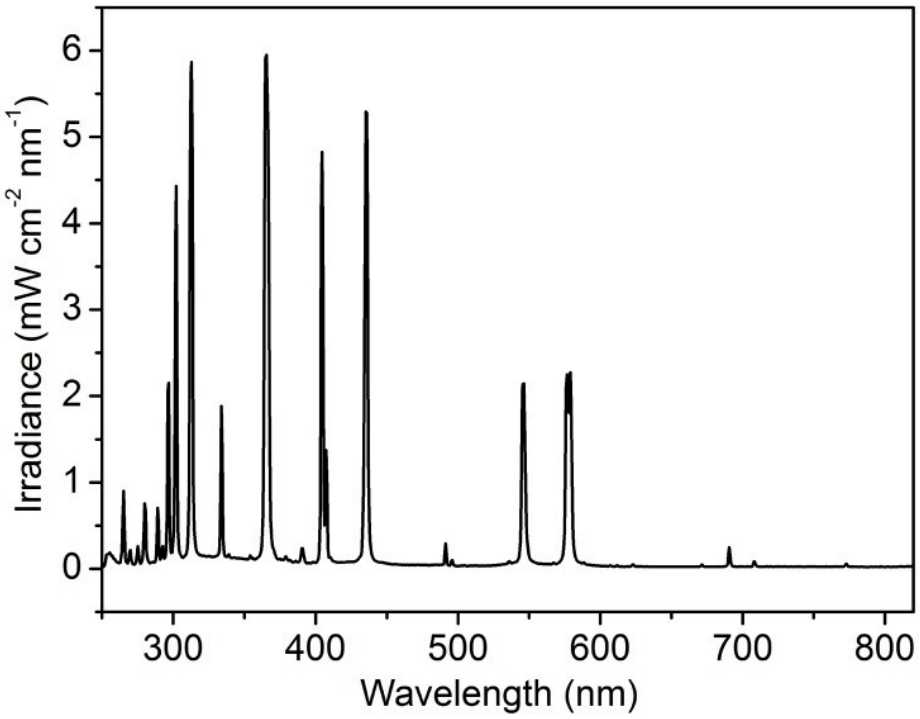

Fig. S6 The irradiance spectrum of the high-voltage mercury lamp with 125W.