

Supporting Information

The Crystalline/Amorphous Contact in $\text{Cu}_2\text{O}/\text{Ta}_2\text{O}_5$ Heterostructures: Increasing Its Sunlight-Driven Overall Water Splitting Efficiency

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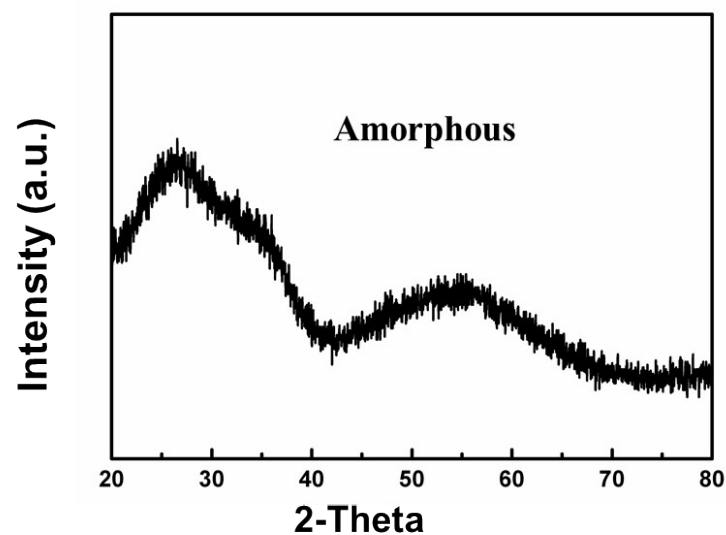


Fig. S1 The XRD pattern of pure amorphous Ta_2O_5 hollow spheres.

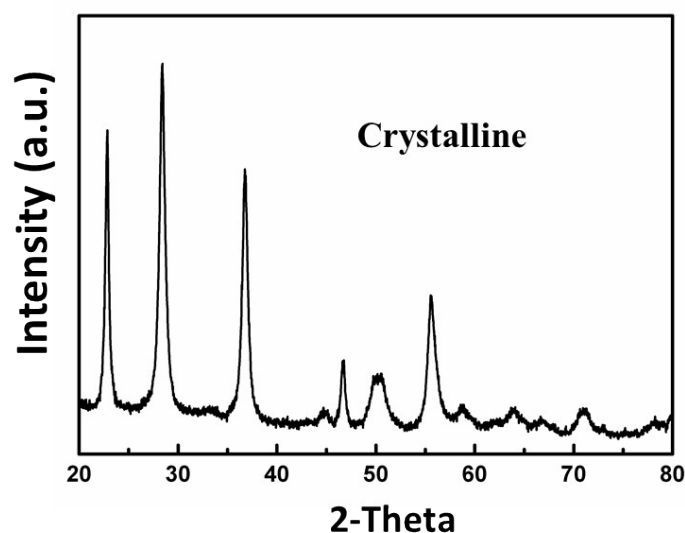


Fig. S2 The XRD pattern of pure crystalline Ta_2O_5 hollow spheres.

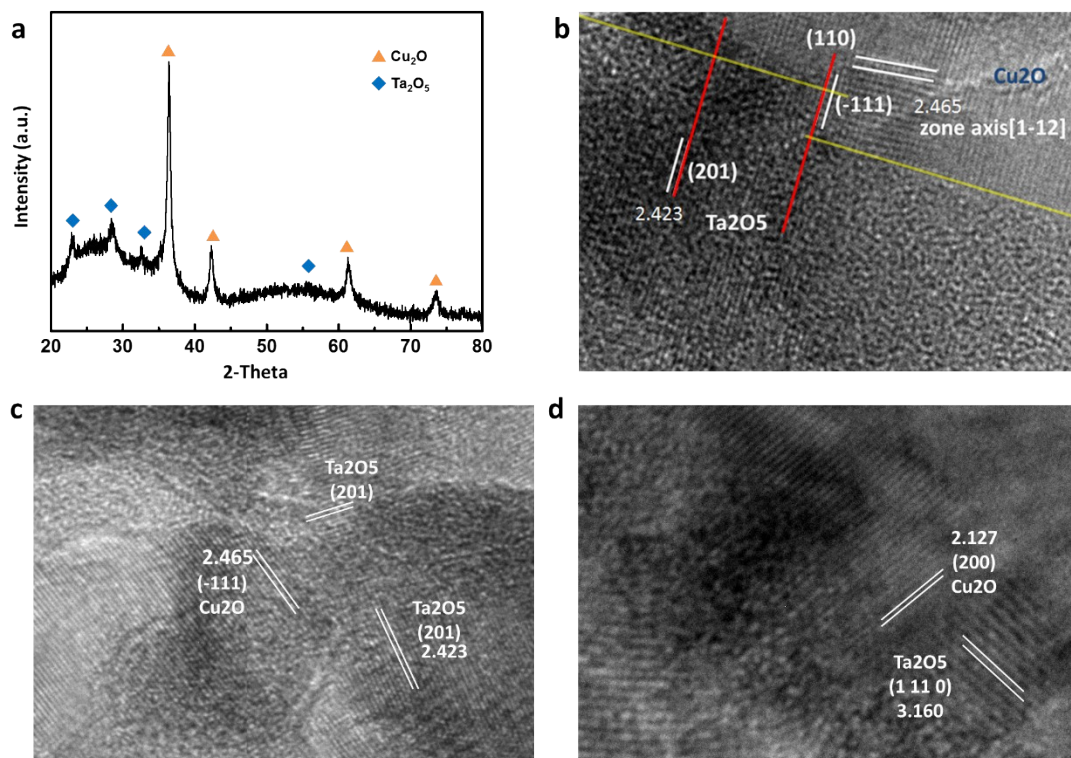


Fig. S3 (a) The XRD pattern of crystalline Cu_2O /crystalline Ta_2O_5 heterostructure. (b)(c)(d) The HRTEM images of interface between the crystalline Cu_2O and crystalline Ta_2O_5 .

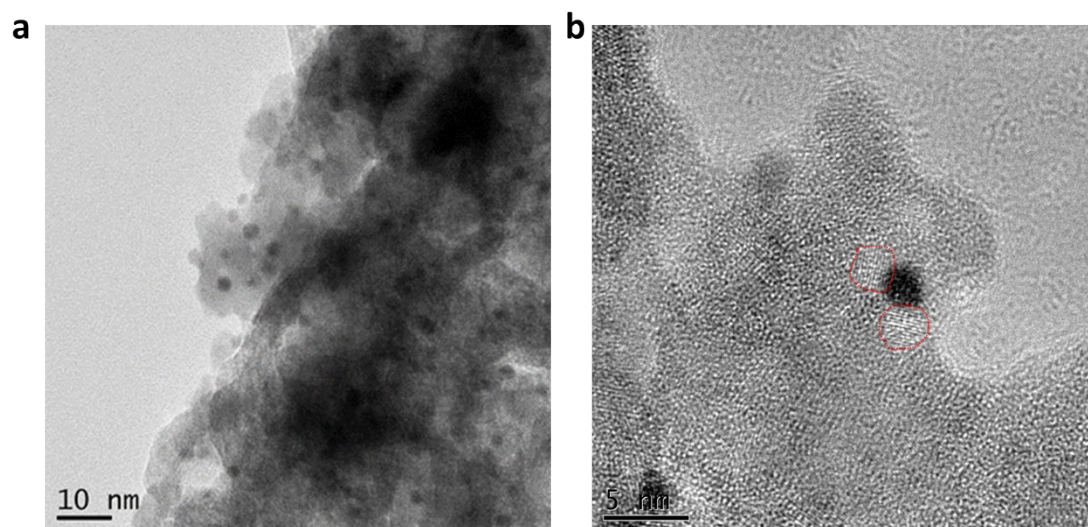


Fig. S4 (a) The TEM image and (b) HRTEM image of Pt decorated Cu_2O /amorphous Ta_2O_5 heterostructure.

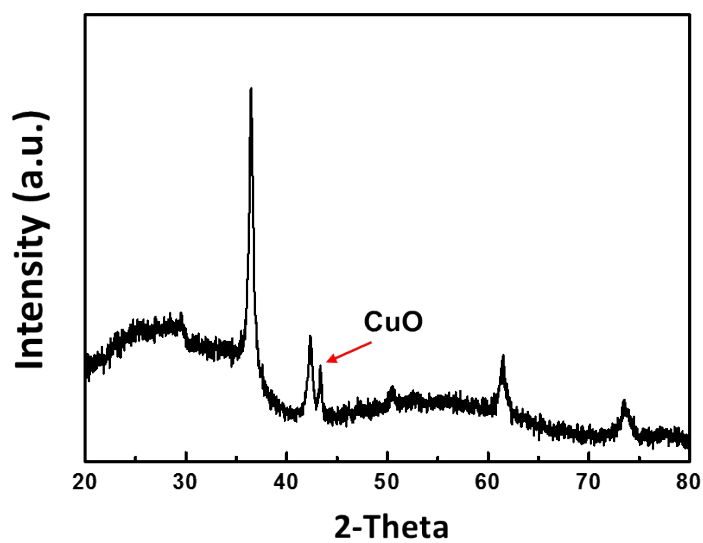


Fig. S5 The XRD pattern of $\text{Cu}_2\text{O}/\text{amorphous Ta}_2\text{O}_5$ heterostructure after 1 hour water splitting test.

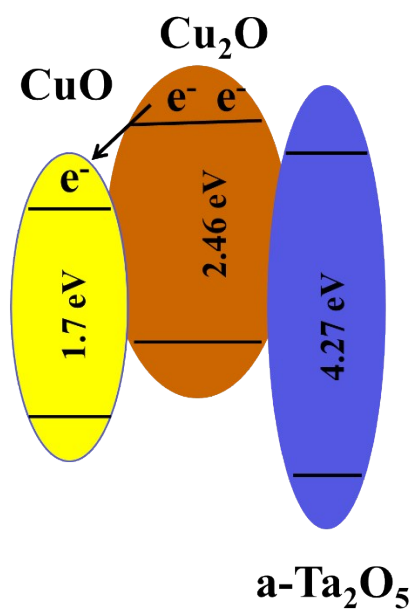


Fig. S6 The band structure diagram of $\text{CuO}/\text{Cu}_2\text{O}/\text{amorphous Ta}_2\text{O}_5$ heterostructure.