Electronic Supplementary Material (ESI) for Catalysis Science & Technology.

Plasmonic enhanced furfural hydrogenation catalyzed by stable carbon coated copper nanoparticles driven from metal-organic frameworks

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1 These authors contributed equally to this work.

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Fig. S1 TGA-DTA curves of HKUST-1

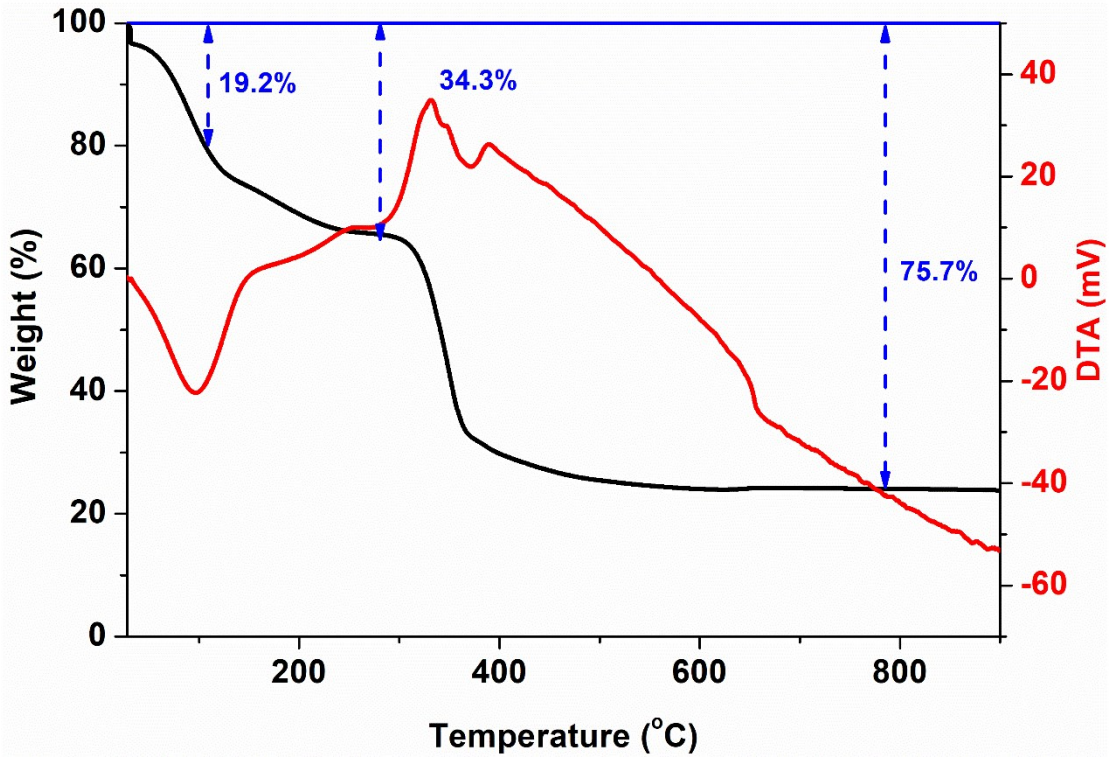


Fig. S1 TGA-DTA curves of HKUST-1

Fig. S2 N_2 adsorption–desorption isotherms of (a) HKUST-1, (b) Cu/AC (c) Cu_2O-Cu@C.

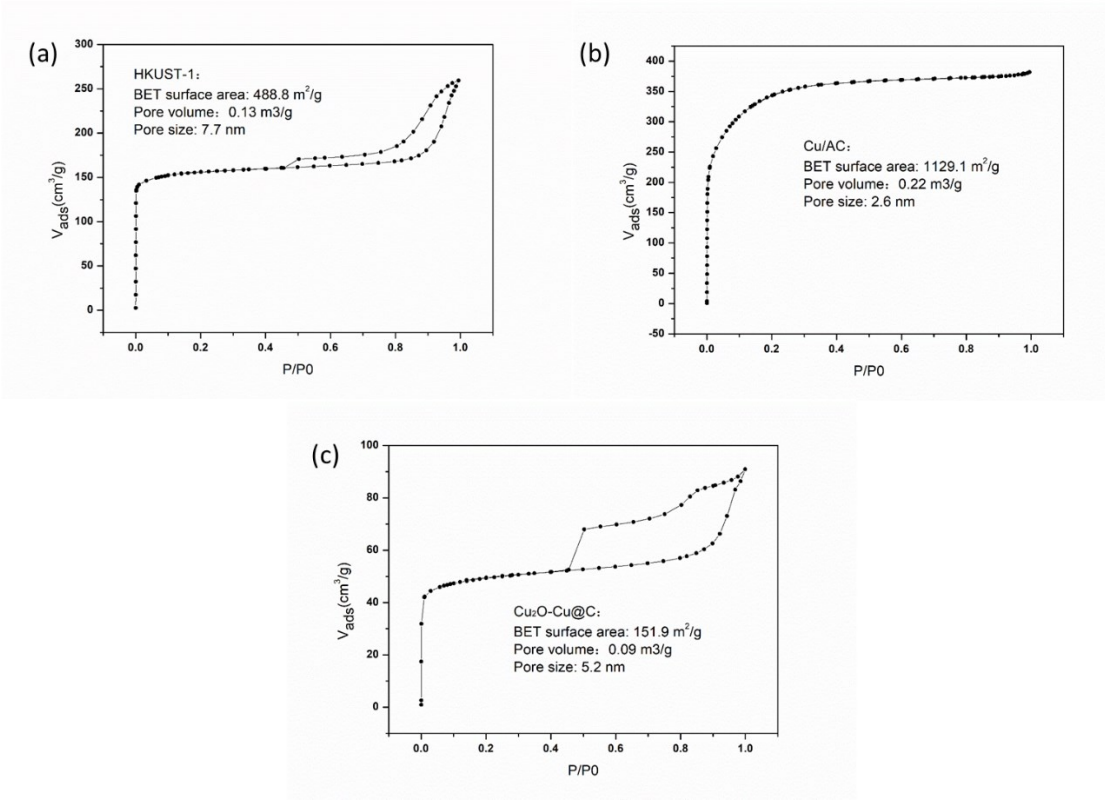


Fig. S2 N_2 adsorption–desorption isotherms of (a) HKUST-1, (b) Cu/AC (c) Cu_2O-Cu@C.

Fig. S3 N_2 adsorption/desorption isotherms and the corresponding BJH pore-size distribution curves of various Cu@C-T samples

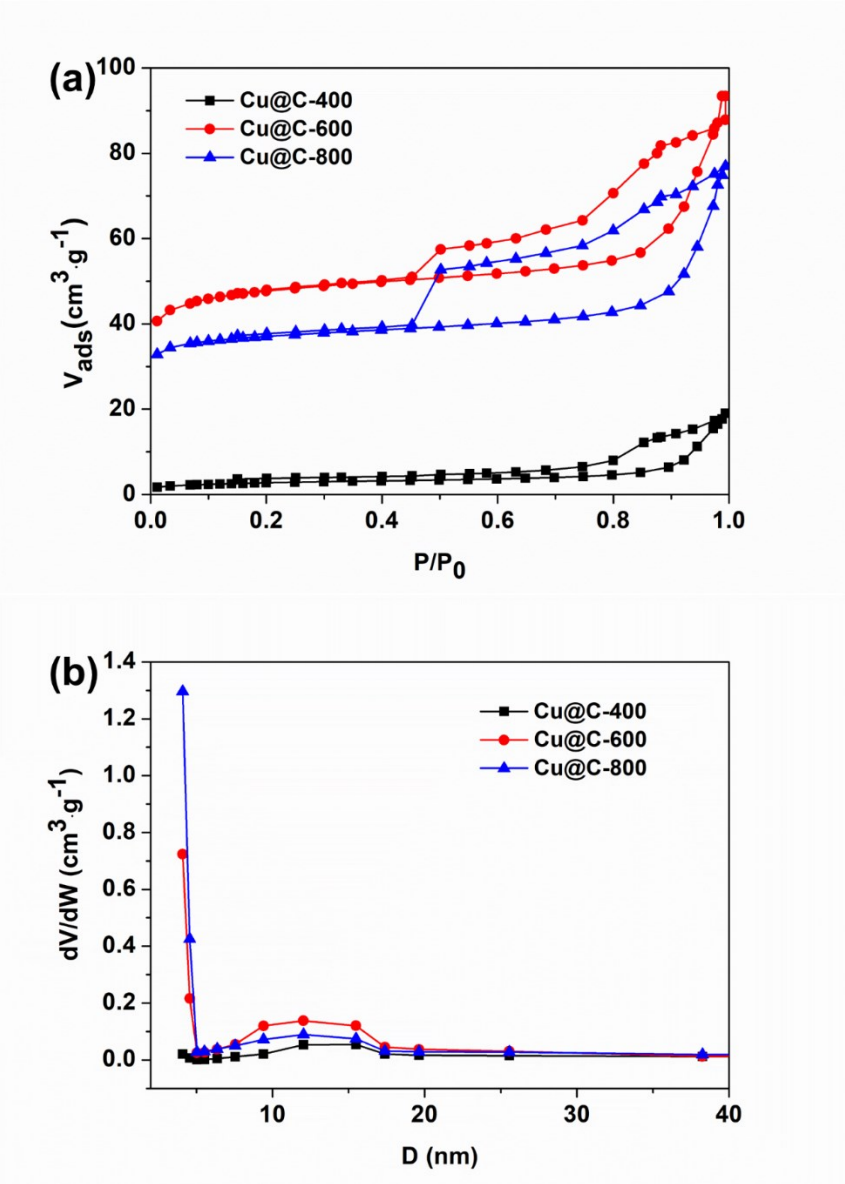
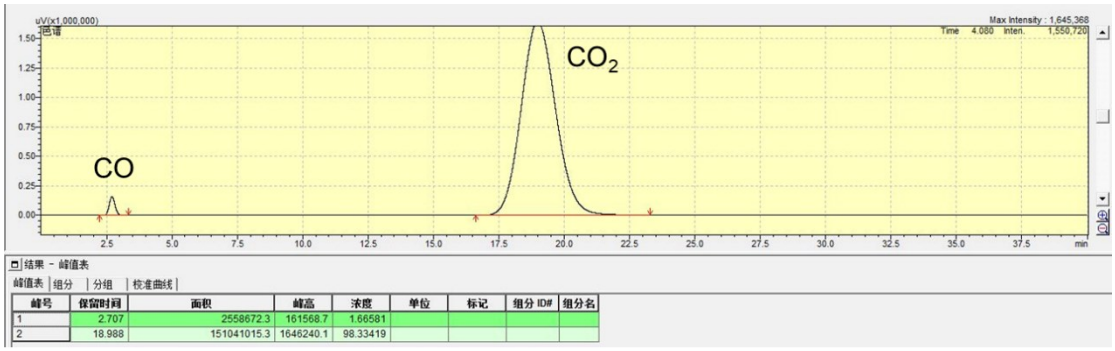


Fig. S3 (a) N_2 adsorption/desorption isotherms and (b) the corresponding BJH pore-size distribution curves of various Cu@C-T samples.

Fig. S4 Gas chromatographic analysis of gaseous products during pyrolysis of HKUST-1



峰号	保留时间	面积	峰高	浓度	单位	标记	组分 ID#	组分名
1	2.707	2558672.3	161568.7	1.66581				
2	18.988	151041015.3	1646240.1	98.33419				

Fig. S4 Gas chromatographic analysis of gaseous products during pyrolysis of HKUST-1.

Table S1 Textural properties and compositions of various samples

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Samples	S_{BET} (m^2 g^{-1})	V_{pore} (cm^3 g^{-1})	D_{pore} (nm)	Content of elements			
				Cu	C	O	H
Cu@C-400	9.6	0.029	17.4	52.2	31.9	14.3	1.6
Cu@C-600	154.7	0.079	9.0	53.4	32.4	13.0	1.3
Cu@C-800	119.4	0.069	13.1	54.6	33.6	11.0	0.7

Fig. S5 Raman spectrum of various Cu@C-T samples

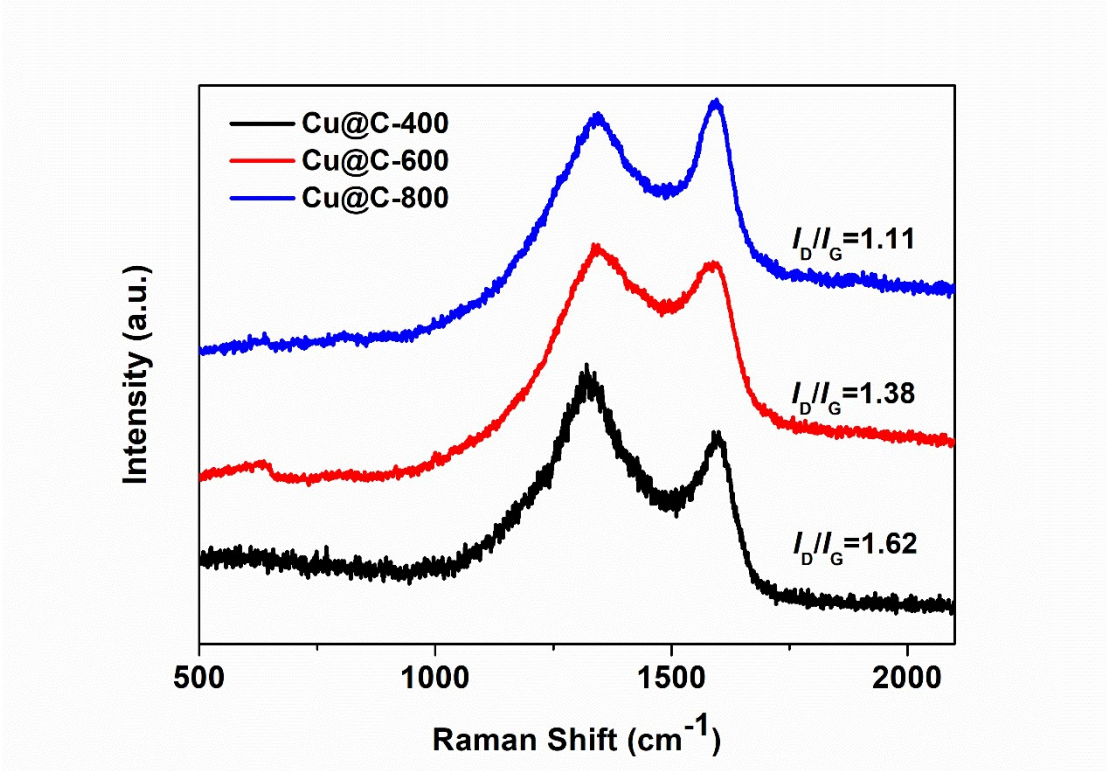

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Fig. S6 FT-IR spectrum of various Cu@C-T samples

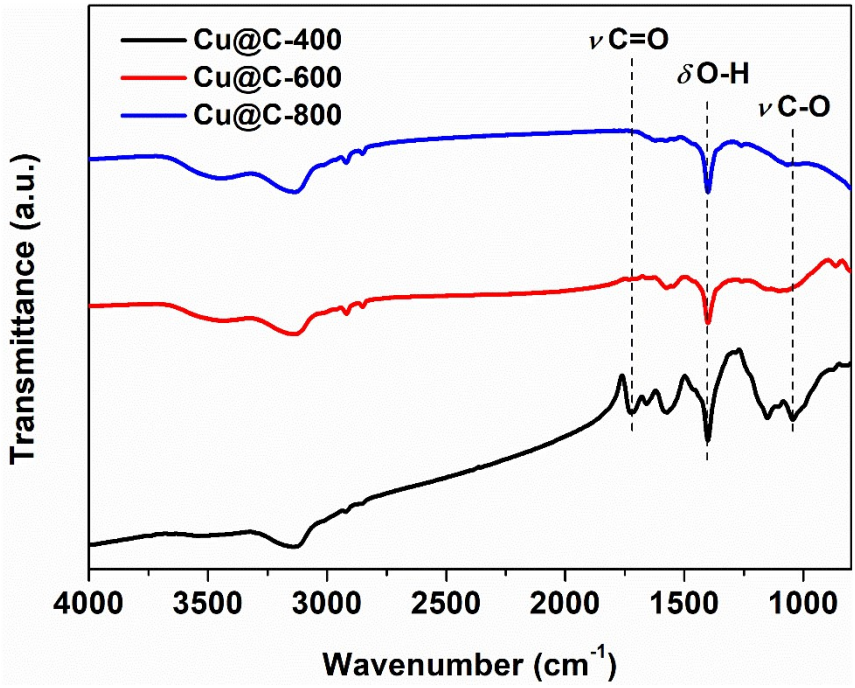

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Fig. S7 The DRIFT spectra of FAL absorbed on Cu@C-T catalysts.

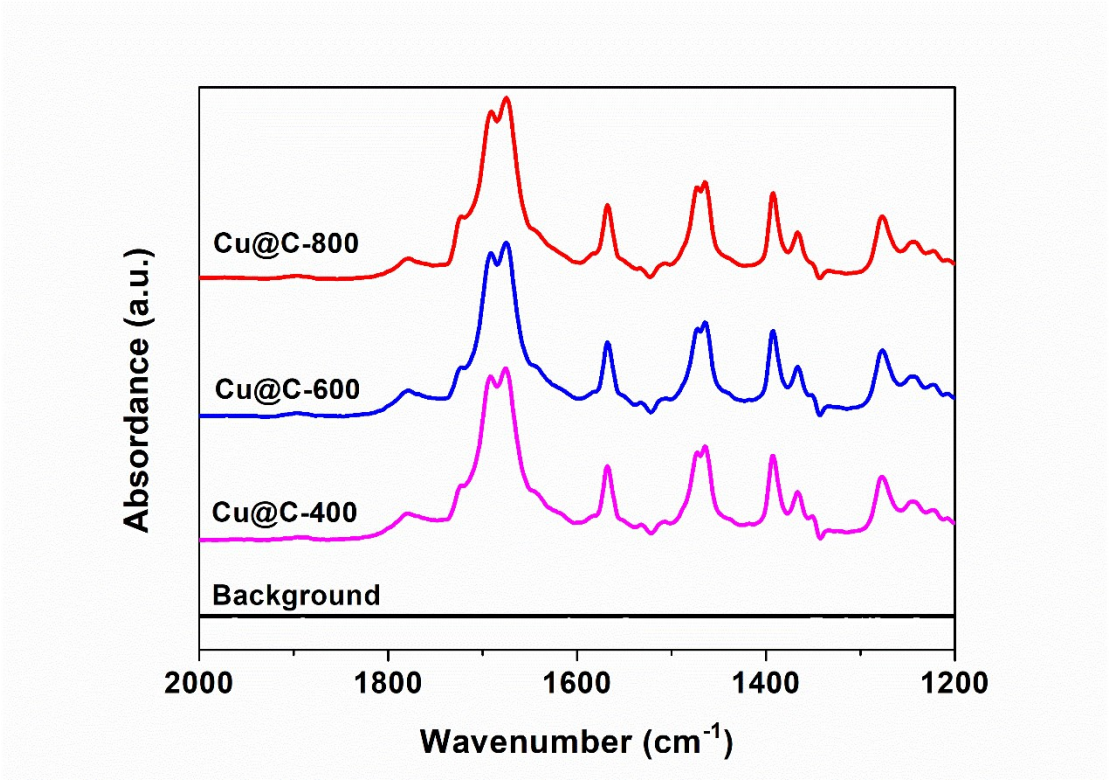


Fig. S7 The DRIFT spectra of FAL absorbed on Cu@C-T catalysts.

Fig. S8 Recyclability and stability of Cu@C-600 photocatalyst.

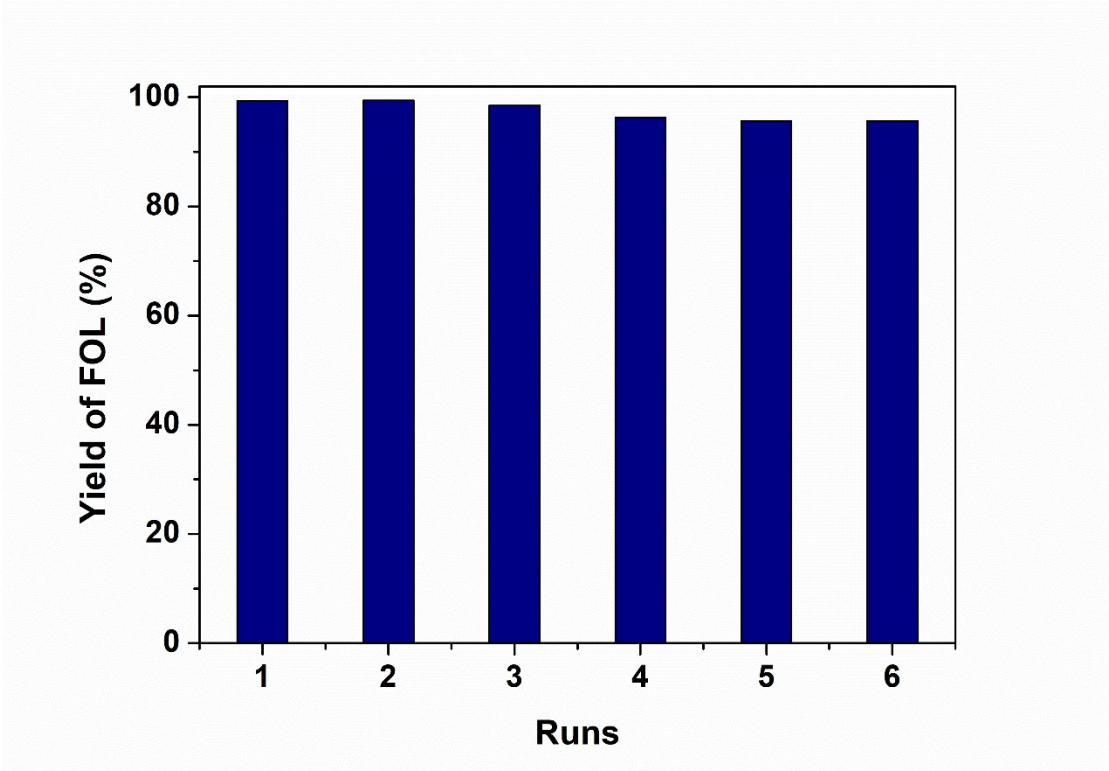


Fig. S8 Recyclability and stability of Cu@C-600 photocatalyst. Reaction conditions: 30 mg of catalyst, 0.2 mmol of substrate, and 5 mL of isopropanol as solvent, 1 atm H_2. The reaction mixture was stirred under visible light irradiation (0.5 W/cm^2) at 100 °C for 24 h.

Fig. S9 The output spectra of LED light sources.

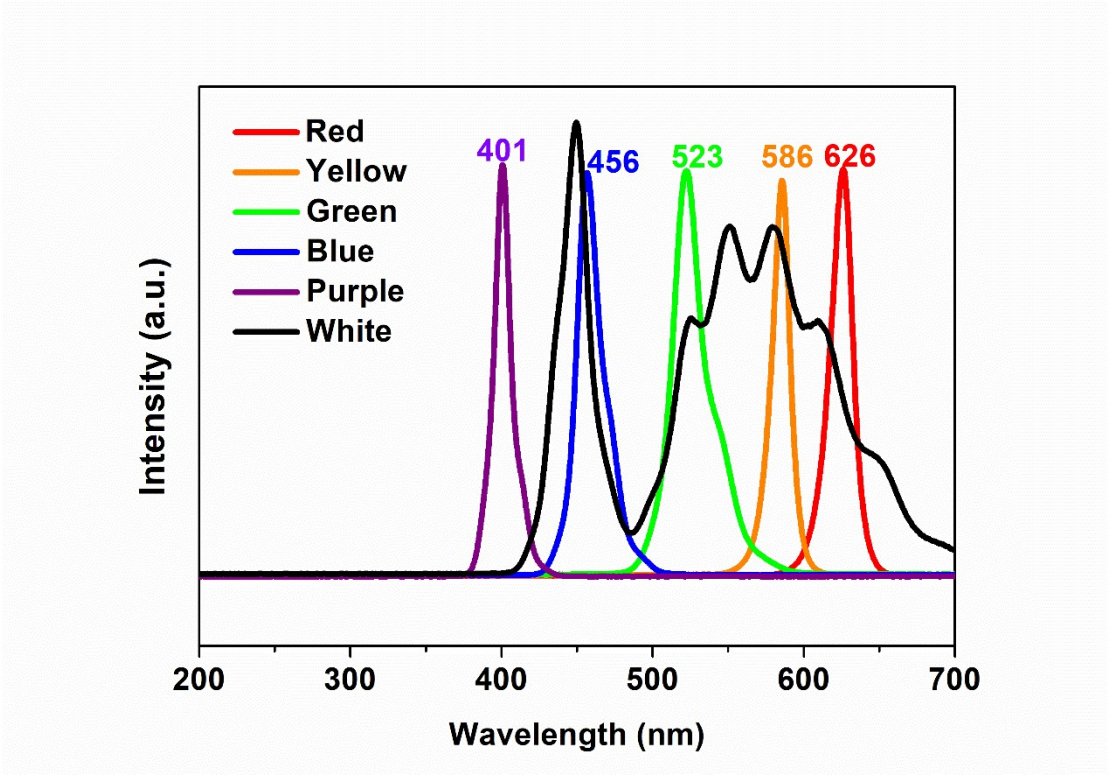


Fig. S9 The output spectra of LED light sources.

Fig. S10 UV-vis-DR spectra of various samples.

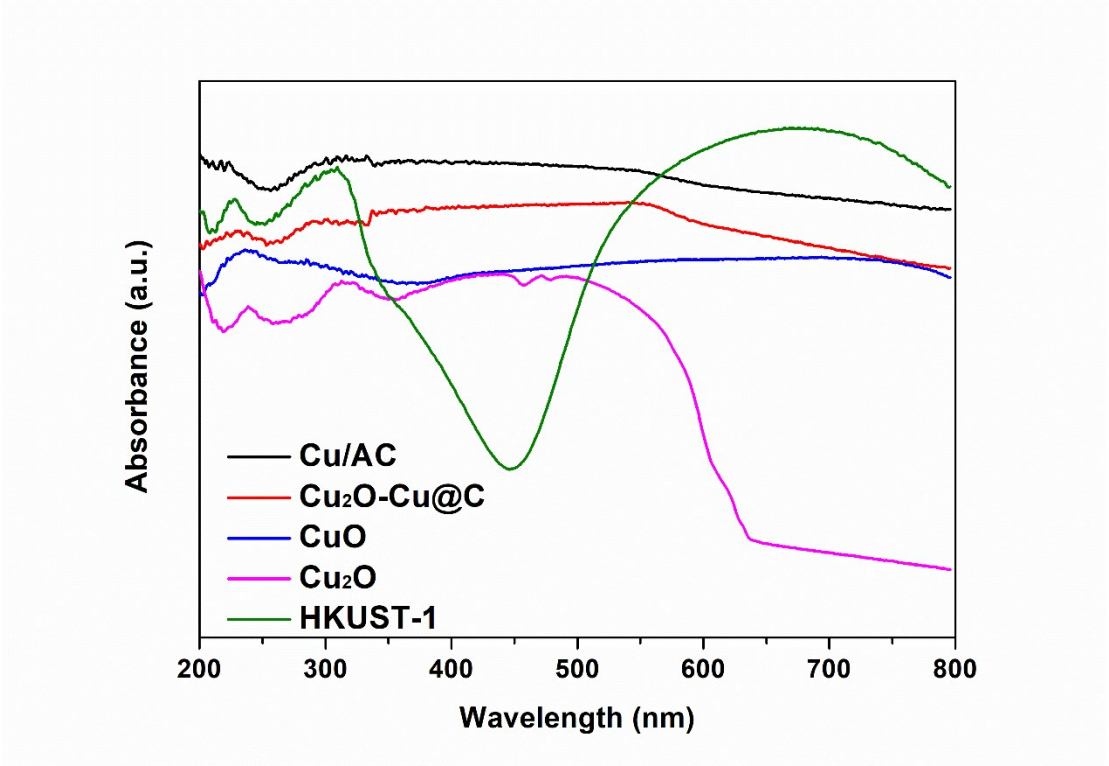
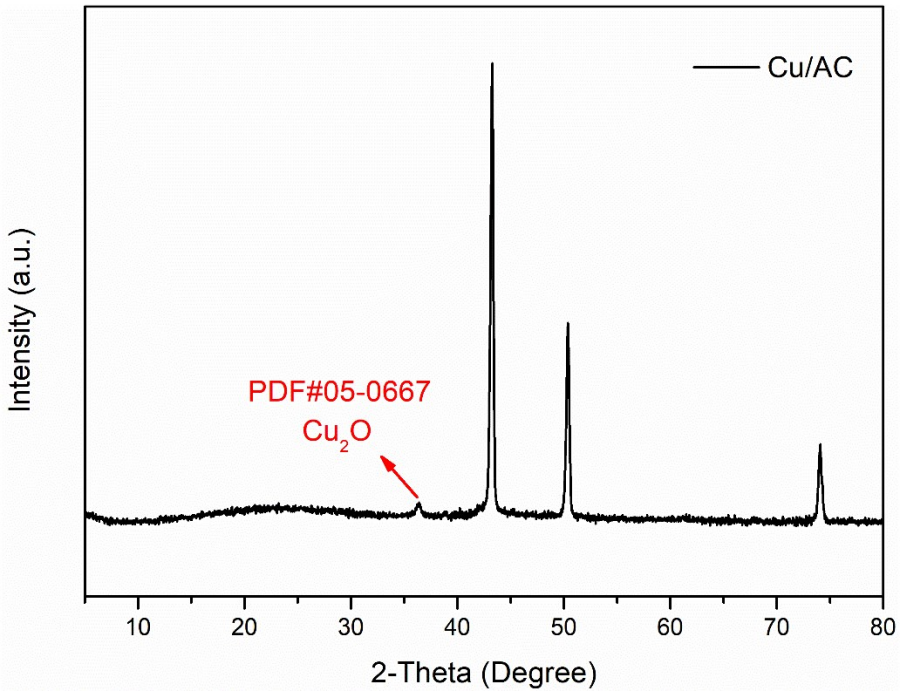


Fig. S10 UV-vis-DR spectra of various samples.

Fig. S11 XRD pattern of Cu/AC.



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