

Electronic Supplementary Information

Atomic layer deposition-assisted growth of CuAl LDH on carbon fiber as
a peroxidase mimic for colorimetric determination of H₂O₂ and glucose

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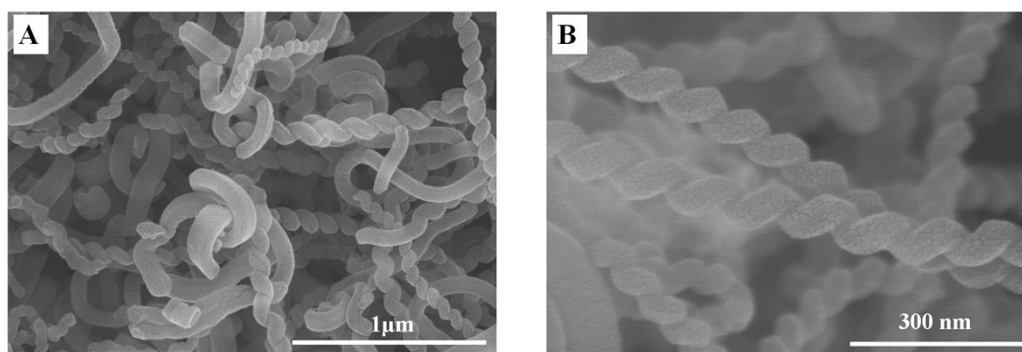


Fig. S1. SEM images of carbon fibers.

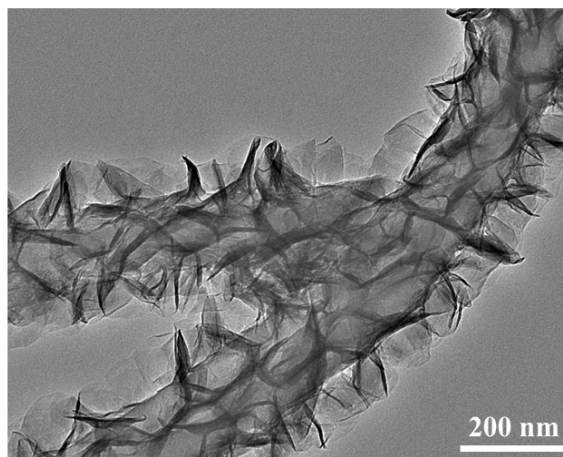


Fig. S2. TEM image of CF@NiAl-LDH.

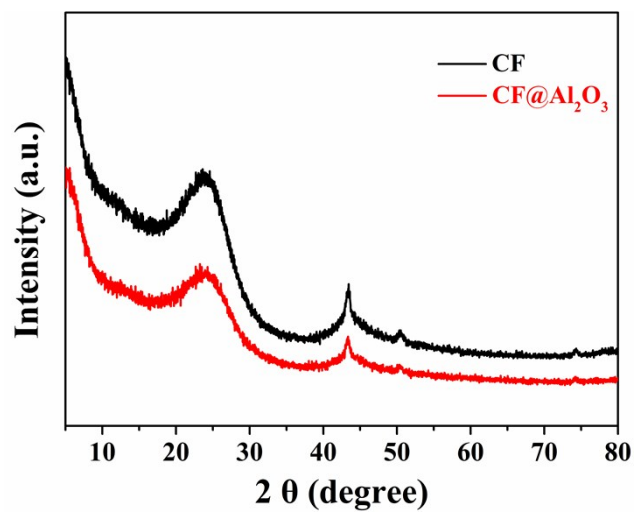


Fig. S3. XRD patterns of carbon fibers and CF@Al₂O₃.

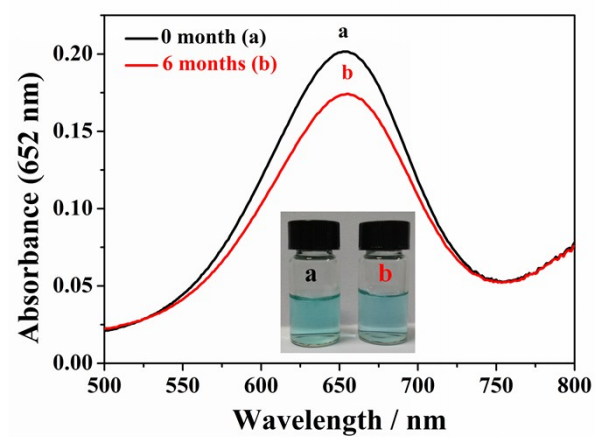


Fig. S4. UV-vis absorbance changes at 652 nm of TMB using CF@CuAl-LDH (a) and CF@CuAl-LDH after six-month storage (b).

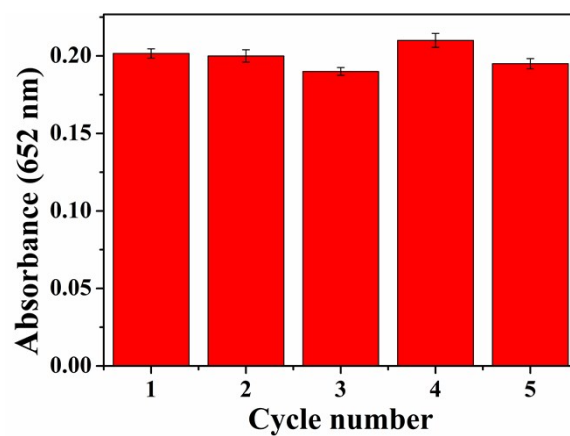


Fig. S5. UV-vis absorbance changes at 652 nm of reusability experiments.

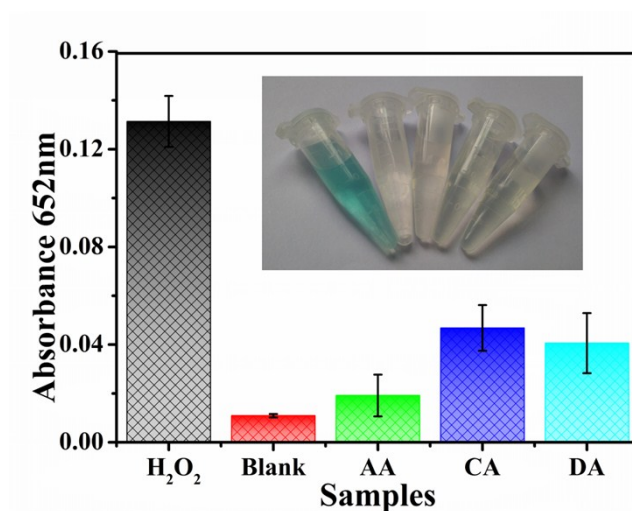


Fig. S6. Selectivity analysis for 2 mM H₂O₂ detection and 5 mM of citric acid (CA), dopamine hydrochloride (DA) and L-ascorbic (AA) as the control group.

Table S1. Comparison of the apparent Michaelis-Menten constant (K_m) and maximum reaction rate (V_{max}).

Catalyst	K_m (mM)		V_{max} (10^{-8} M s ⁻¹)		Reference
	H ₂ O ₂	TMB	H ₂ O ₂	TMB	
HRP	3.7	0.434	8.71	10	The reference [1]
CuO NPs	41	0.016	-	-	The reference [2]
Cu NCs	29.16	11.9	4.22	5.96	The reference [3]
Co-Al ELDH	22.13	0.372	0.598	0.101	The reference [4]
CF@CuAl-LDH	0.59	4.4	0.29	1.48	This work

References

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