Supporting Information

Atomically Dispersed Cu-Pd Dual Sites on Nitrogen-Doped Carbon for Efficient Electroreduction of Nitrite to Ammonia

Supporting Tables

Tab. S1 Surface valence composition of Pd and Cu species in Cu-Pd-N-C catalysts with different Pd loadings.

Sample	Pd^{2+}(%)	Pd^{4+}(%)	Pd^{2+}/Pd^{4+}	Cu^{+}(%)	Cu^{2+}(%)	Cu^{+}/Cu^{2+}
Cu-Pd_{20}-N-C	56.38	43.62	1.29	26.00	74.00	0.35
Cu-Pd_{40}-N-C	58.91	41.09	1.43	23.72	76.28	0.31

Tab. S2 Reaction Conditions and Performance Metrics of Different Catalysts

Catalyst	Potential (vs. RHE)	Electrolyte	Concentration (NO_2^-)	NH_3 Yield (mg $h^{-1}cm^{-2}$)	FE (%)
V-TiO_2	-0.7 V	0.1 M NaOH + 0.1 M NO_2^-	0.1 M	9.2	93.2
Ni_1Ru	-0.6 V	0.5 M Na_2SO_4 + 0.1 M NO_2^-	0.1 M	8.3	95.9
Ni@MDC	-0.8 V	0.1 M NaOH + 0.1 M NO_2^-	0.1 M	6.3	65.4
Ag nanoarray	-0.7 V	0.1 M NaOH + 0.1 M NO_2^-	0.1 M	5.8	85.0
Ni@JBC-800	-0.5 V	0.1 M NaOH + 0.1 M NO_2^-	0.1 M	4.1	83.4
TiO_2x nanobelt array	-0.7 V	0.1 M NaOH + 0.1 M NO_2^-	0.1 M	7.9	92.7
Cu_3P nanowires	-0.5 V	0.1 M PBS + 0.1 M NO_2^-	0.1 M	1.6	91.2
Cu-Pd_{20}-N-C	-0.6 V	0.1 M NaOH + 0.1 M NO_2^-	0.1 M	9.7	95.1

Supporting Figures

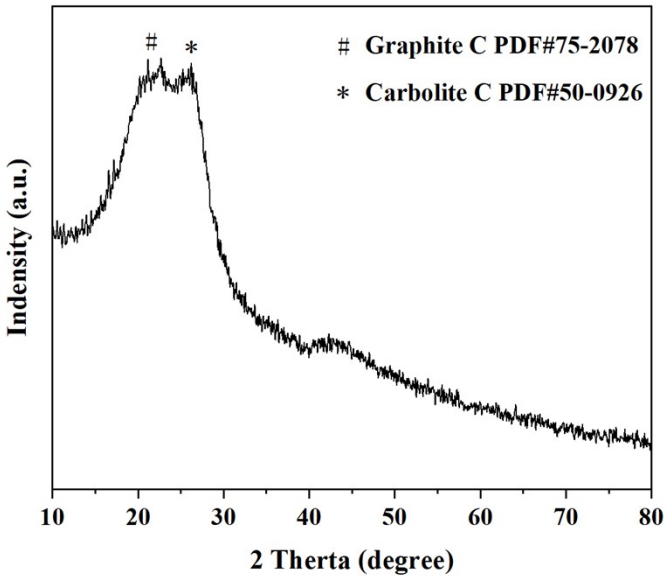

Fig. S1 XRD pattern of Cu-Pd-N-C.

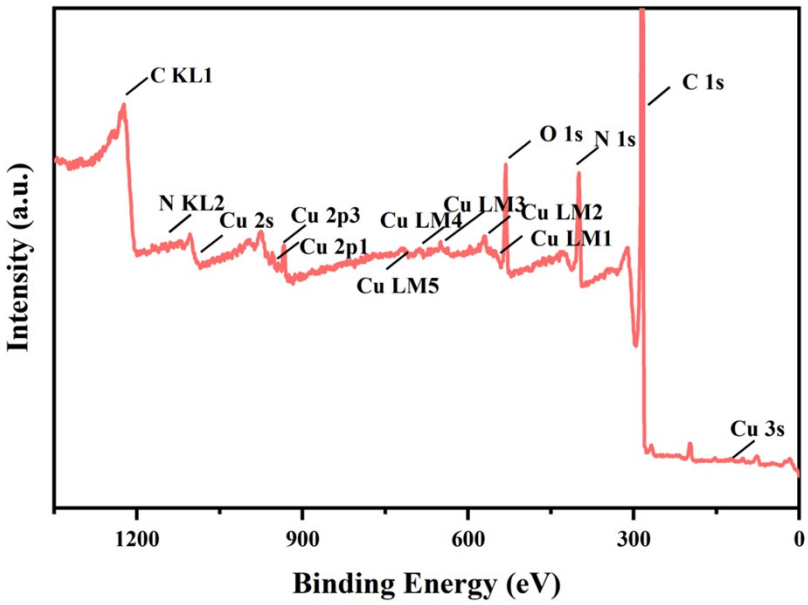

Fig. S2 XPS survey spectrum of Cu-Pd-N-C.

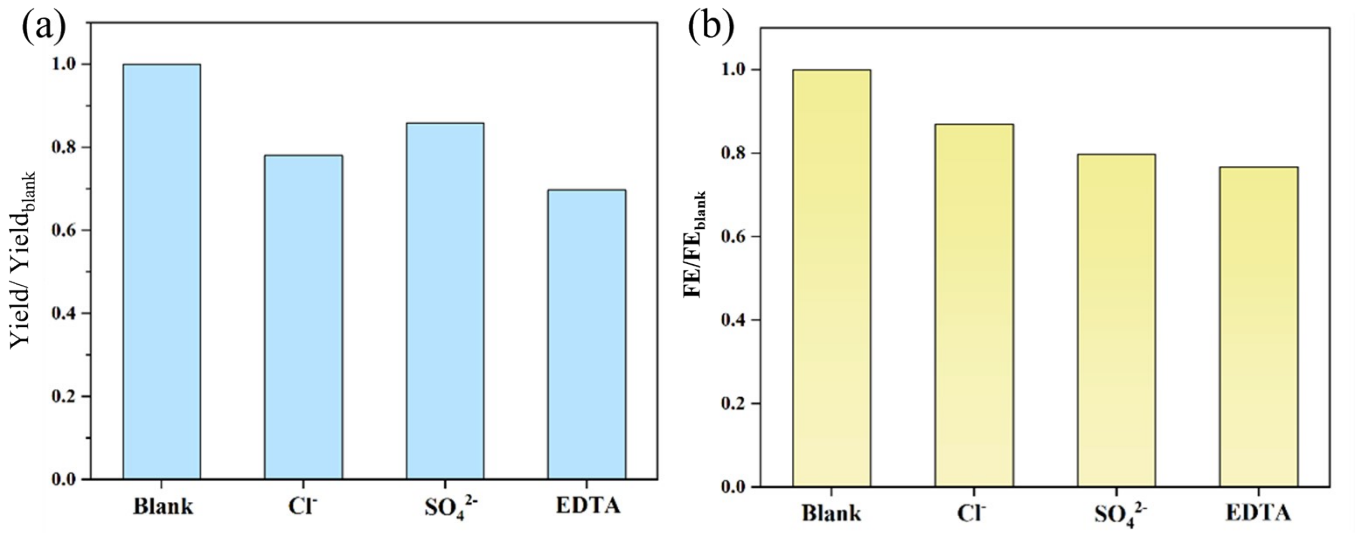

Fig. S3 Normalized (a) NH_3 yield and (b) Faradaic efficiency of Cu-Pd_{20}-N-C in simulated wastewater.

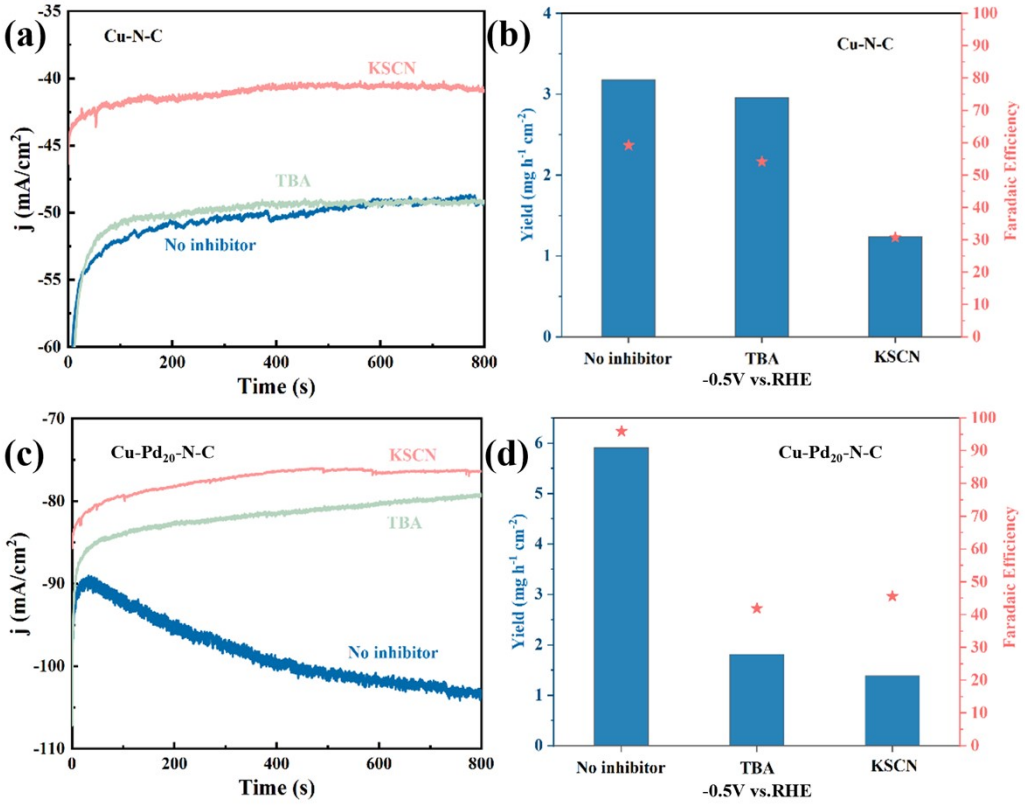

Fig. S4 (a) I–t curves of Cu-N-C with KSCN, TBA; (b) NH_4^+ yield and FE of Cu-Pd-N-C with KSCN, TBA; (c) I–t curves of Cu-Pd_{20}-N-C with KSCN, TBA; (d) NH_4^+ yield and FE of Cu-Pd_{20}-N-C with KSCN, TBA.