Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

Modified Carbon Felt by Using $Ce_xA_{1-x}O_2$ Composites as Cathode in Electro-Fenton System to Degrade Ciprofloxacin

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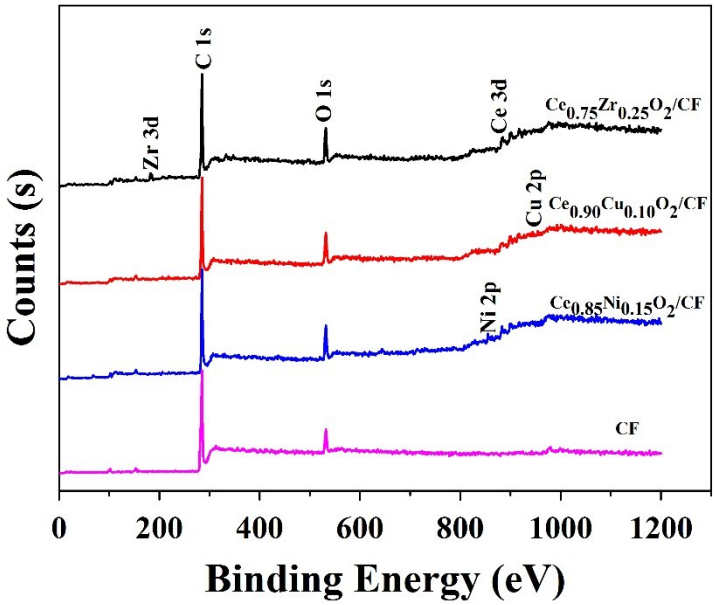


Fig. S1 XPS spectra of CF, 2.0 wt % $Ce_{0.75}Zr_{0.25}O_2$/CF composite, 2.5 wt % $Ce_{0.90}Cu_{0.10}O_2$/CF composite and 0.45 wt % $Ce_{0.85}Ni_{0.15}O_2$/CF composite.

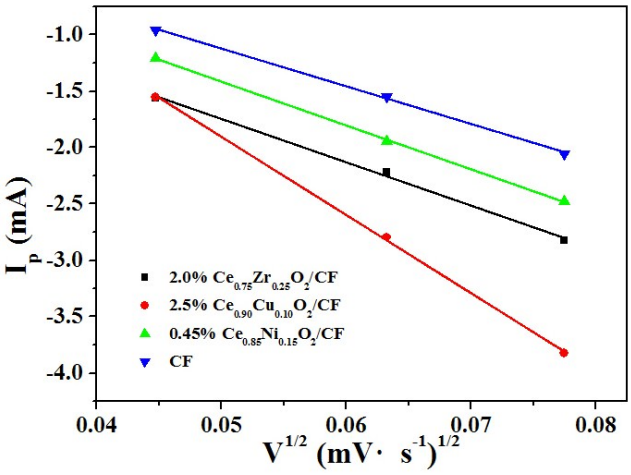


Fig. S2 Peak current vs. square root of scan rate in in 50 mg·L^{-1} CIP with 0.1mmol·L^{-1} Fe^{2+} and 0.05 mol·L^{-1} Na_2SO_4 at pH=3.0 solution.

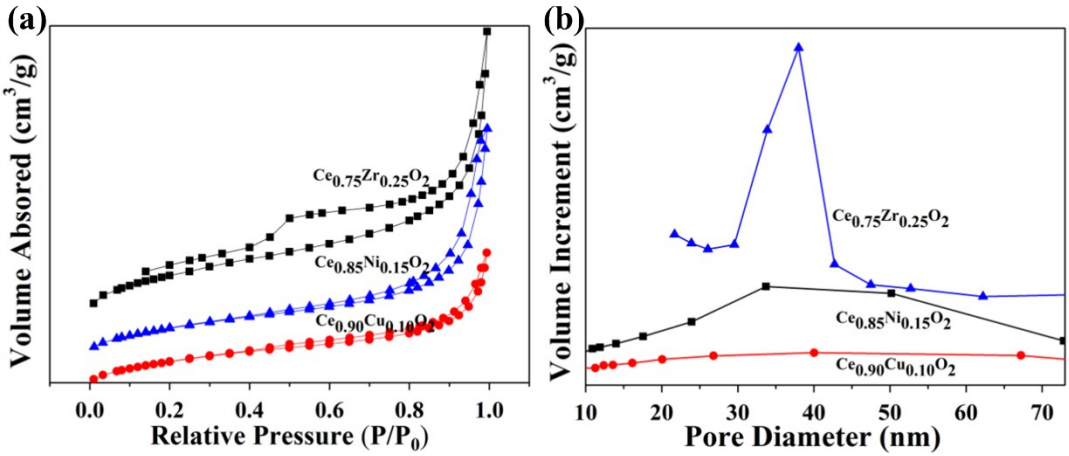


Fig. S3 (a) N_2 adsorption-desorption isotherms and (b) pore size distribution profiles of $Ce_{0.75}Zr_{0.25}O_2$ and $Ce_{0.90}Cu_{0.10}O_2$ and $Ce_{0.85}Ni_{0.15}O_2$ nanoparticles.

Table S1. Summary of the textural parameters of the samples

Sample	Specific surface area ($m^2 \cdot g^{-1}$)	Pore volume ($cm^3 \cdot g^{-1}$)
$Ce_{0.75}Zr_{0.25}O_2$	74.87	0.15
$Ce_{0.90}Cu_{0.10}O_2$	50.49	0.079
$Ce_{0.85}Ni_{0.15}O_2$	56.75	0.13

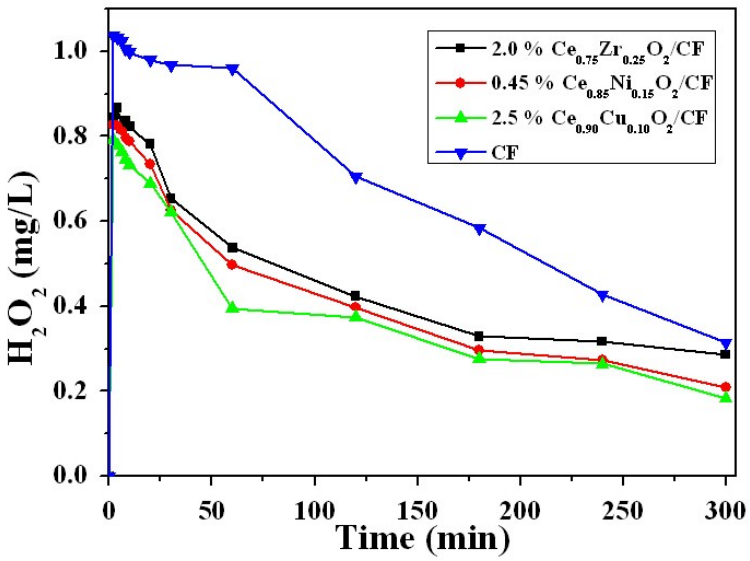
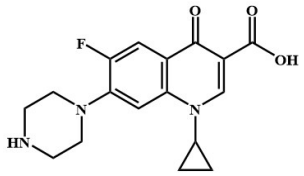
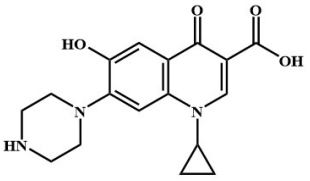
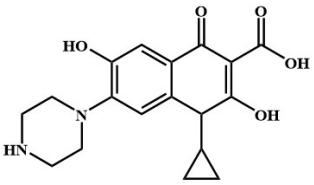
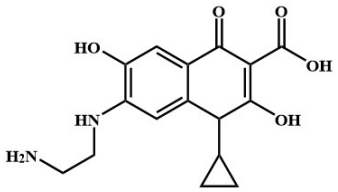
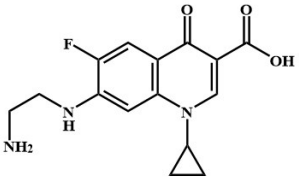
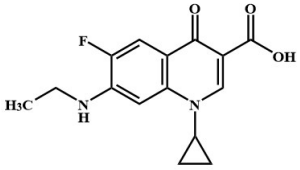
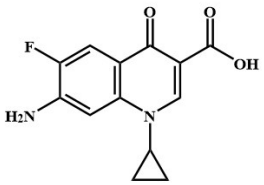
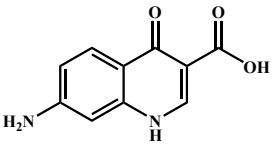


Fig. S4 Concentration of H_2O_2 accumulated in 200 mL of 0.05 mol·L^{-1} Na_2SO_4 aqueous solution at pH=3.0 and room temperature in EF system.

Table S2 Intermediates of CIP solution detected by HPLC-MS during the EF treatment

Compound	Retention time (min)	Molecular structure	*m/z*
Ciprofloxacin	1.72		332
A	1.39		330
B	1.49		348
C	6.31		316
D	1.21		306
E	4.92		290
F	4.17		263
G	2.38		201