Electronic Supplementary Material (ESI) for Nanoscale.

Supplementary Information

Supersensitive CeO_x-Based Nanocomposite Sensor for the Electrochemical Detection of Hydroxyl Free Radicals

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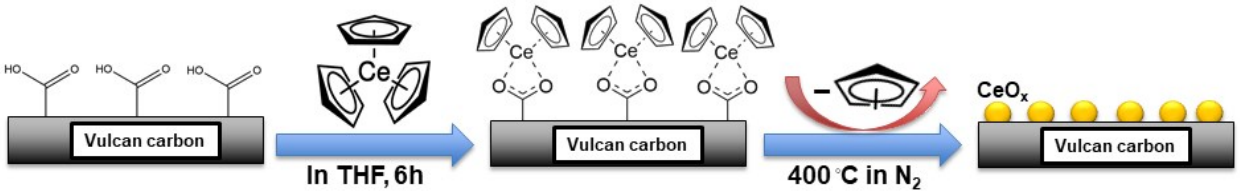

Fig. S1. Schematic of the synthesis of CeO_x nanoclusters/Carbon composites by Surface Organometallic Chemistry (SOMC).

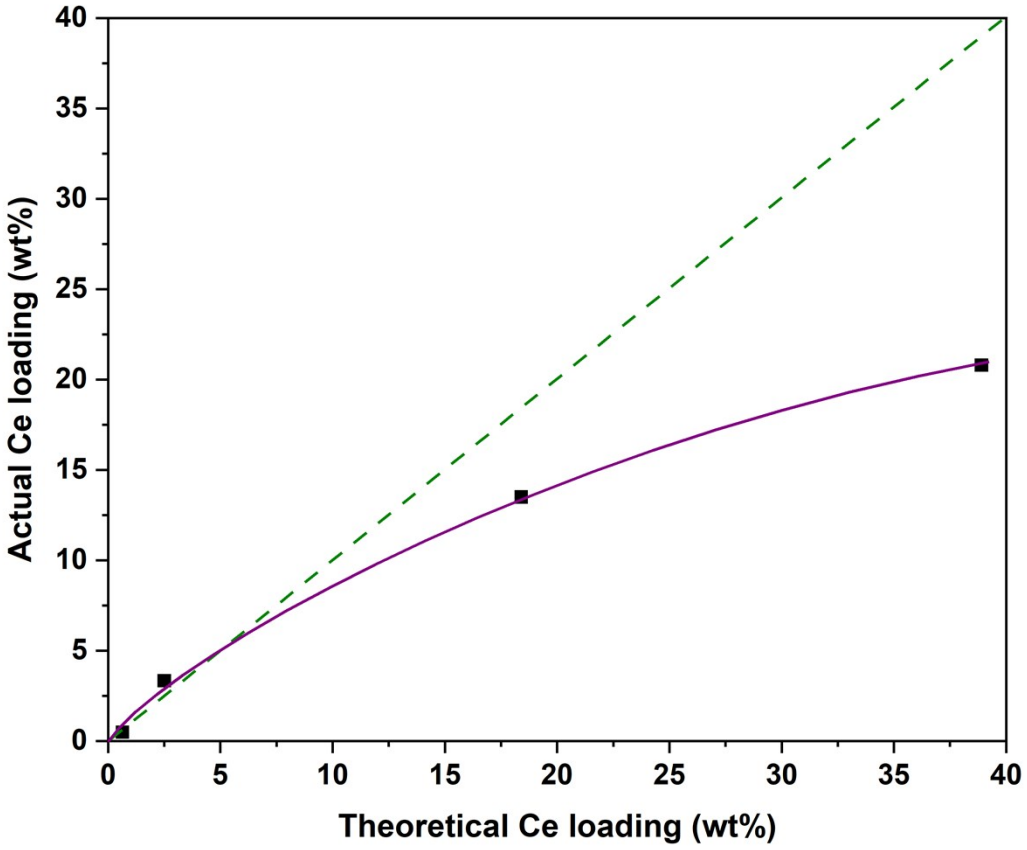

Fig. S2. Theoretical vs actual Ce loading and deviation from a linear correlation at higher loadings.

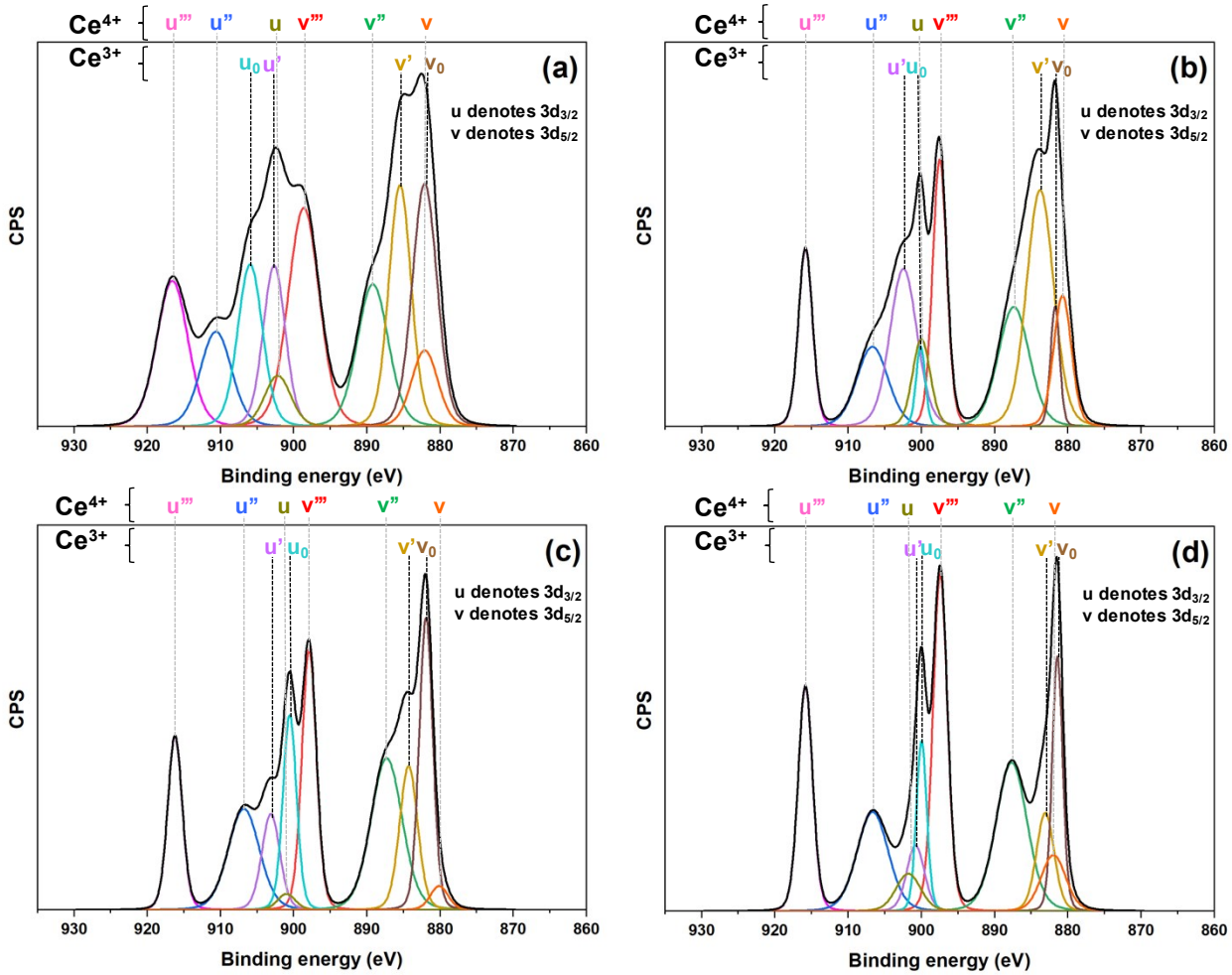

Fig. S3. Deconvolution of the XPS spectra for (a) 0.64, (b) 2.5, (c) 18.4, and (d) 38.9 wt% Ce/Carbon composites.

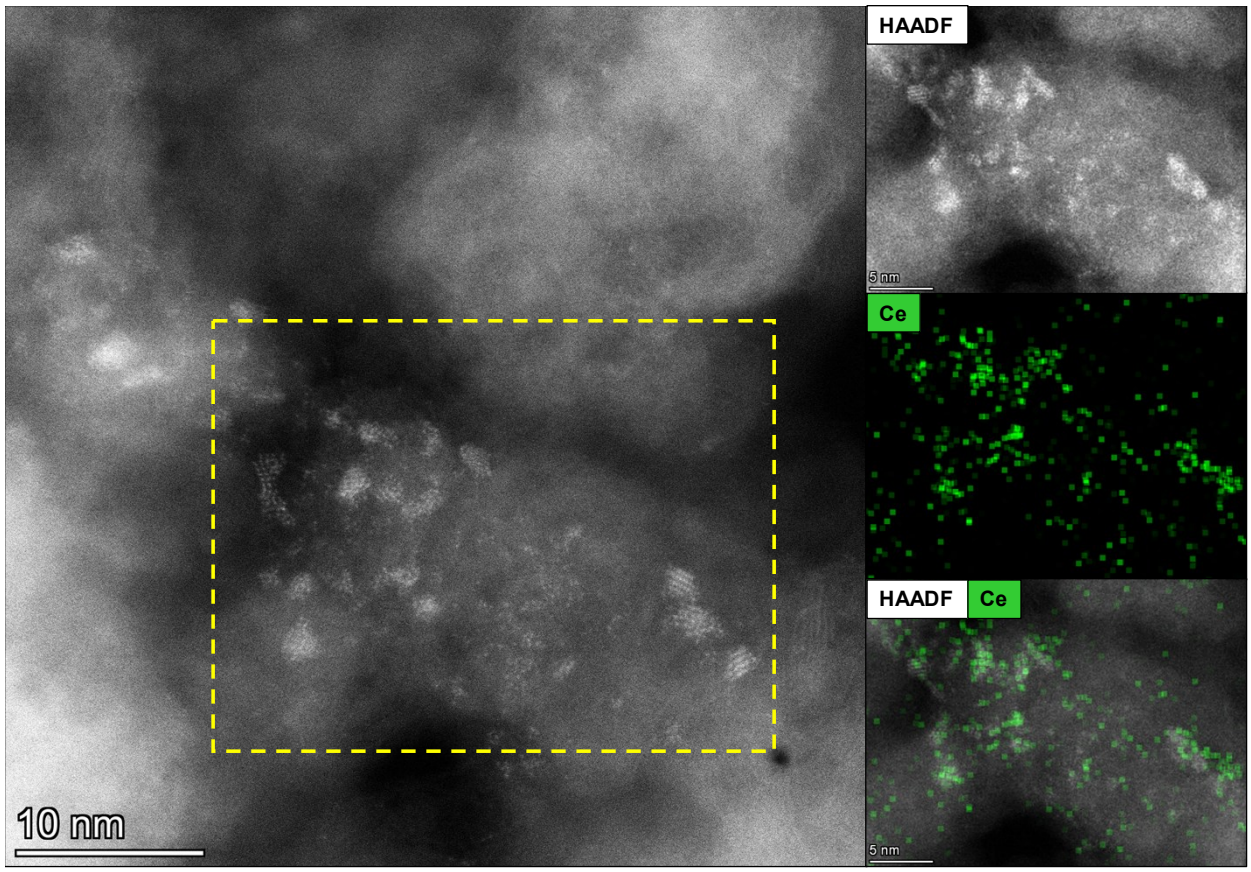

Fig. S4. EDS elemental mapping that shows the CeO_x dispersion over the carbon support on the 0.64 wt% Ce/Carbon composite.

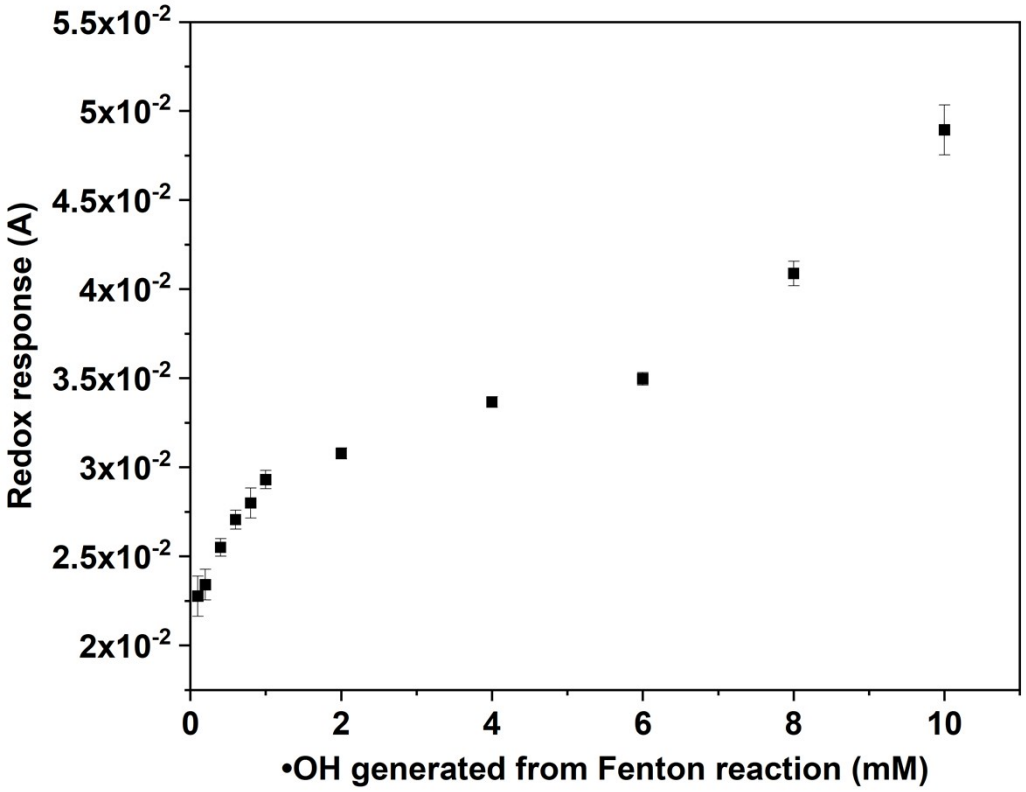

Fig. S5. Relationship between the sensor response and the concentration of •OH generated from the Fenton reaction with the 0.64 wt% Ce/Carbon composite-modified electrode. The error bars represent the standard deviation of three repetitive measurements.

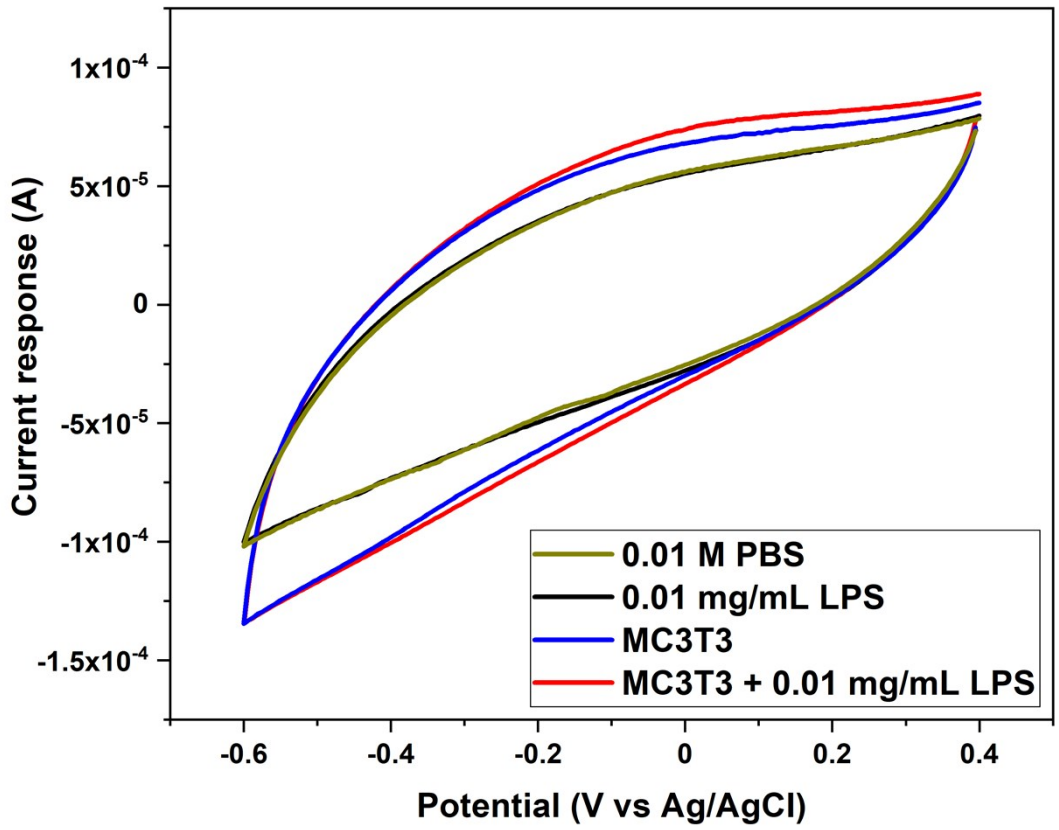

Fig. S6. CV results of the sensor response to PBS, LPS, MC3T3, and MC3T3 + LPS (additional induced oxidative stress) with the 0.64 wt% Ce/Carbon composite.