Supporting Information

Table S1 The atom percent content of C, O and Ce in catalysts (%)

Element	1.35CeO_2/RGO	0.36CeO_2/RGO	0.31CeO_2/RGO	GO	RGO*
C	81.32	86.1	84.1	69.62	85.54
O	17.33	13.54	15.59	30.38	14.46
Ce	1.35	0.36	0.31	-	-

*: RGO was prepared through the same hydrothermal process of GO without the addition of Ce $(NO_3)_3 \cdot 6H_2O$.

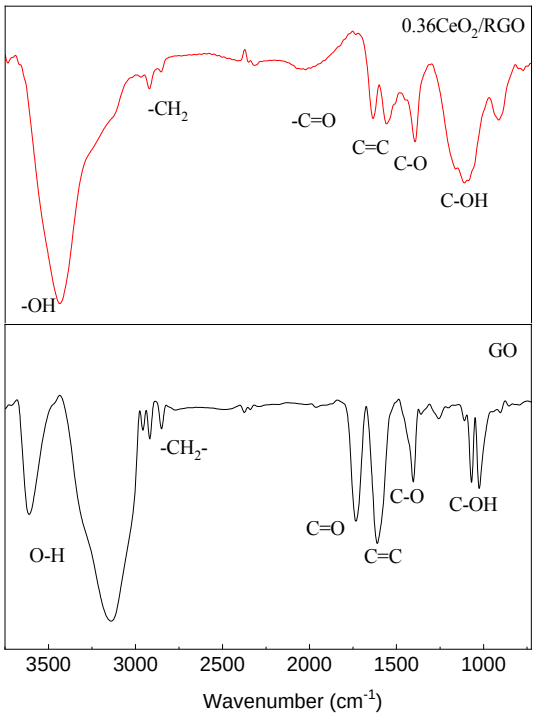

Figure S1 The FT-IR spectra results of GO and 0.36CeO_2/RGO.

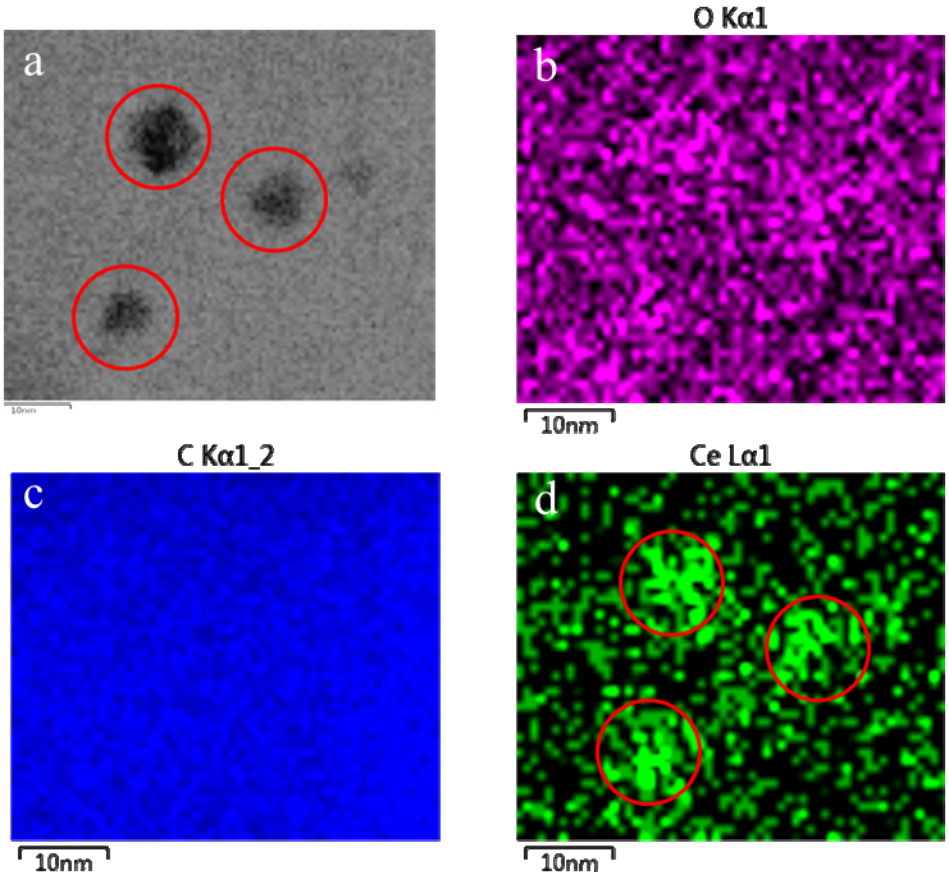

Figure S2 (a) TEM image of 0.36CeO_2/RGO, (b–d) Mapping images of 0.36CeO_2/RGO.

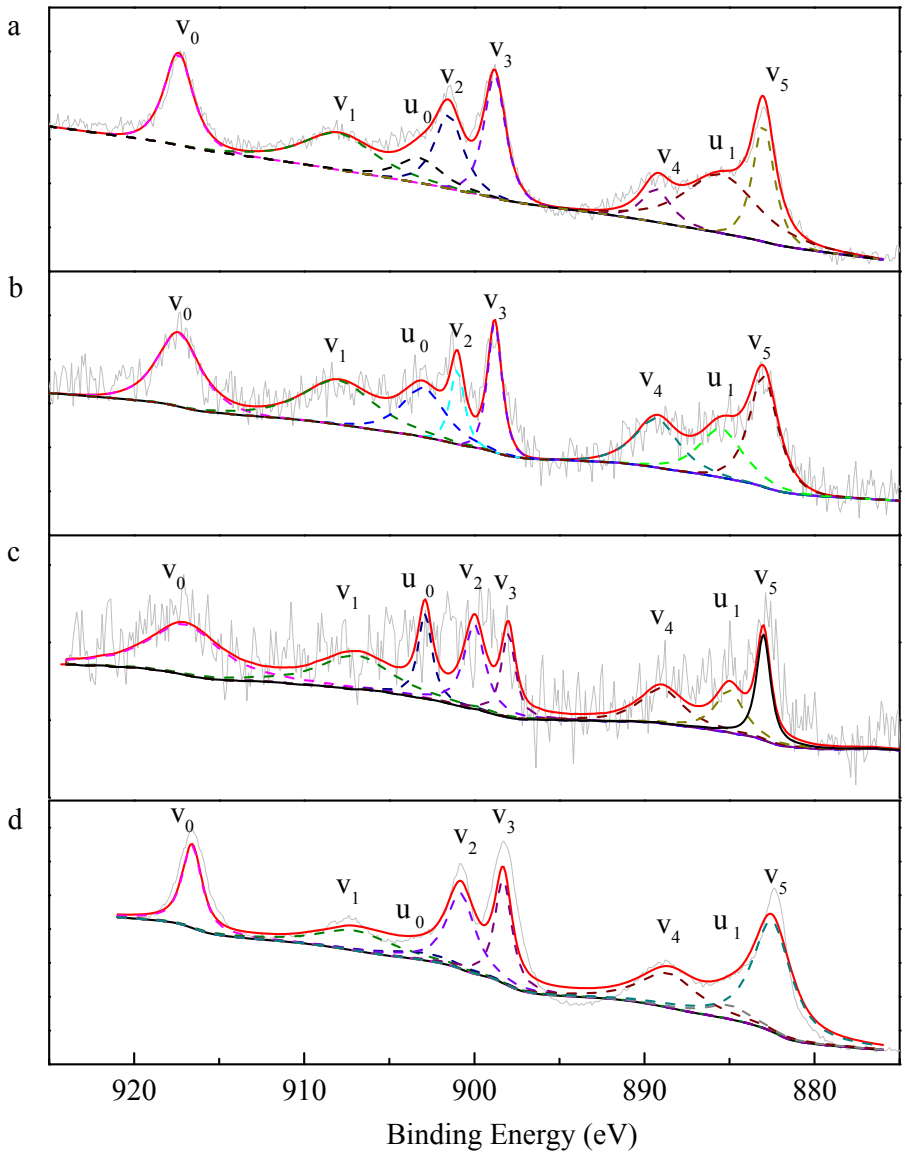

Figure S3 XPS spectra on Ce3d for 1.35CeO_2/RGO (a), 0.36CeO_2/RGO (b), 0.31CeO_2/RGO (c) and CeO_2 (d).

v-series peaks referred to Ce (IV) binding energy and u-series peaks referred to Ce (III) binding energy.

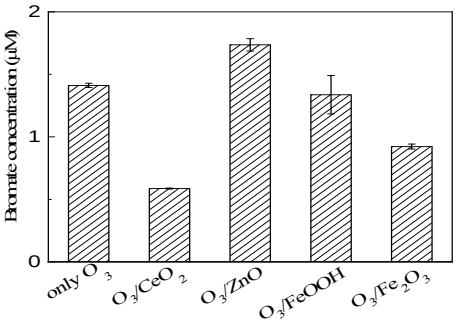

Figure S4 Bromate formation during ozonation and catalytic ozonation. Experiment conditions: [Br^-] = 12.5 μM, [O_3] = 10 mg/(L·min), catalyst dose = 500 mg/L, and pH = 7 with 10 mM PBS.

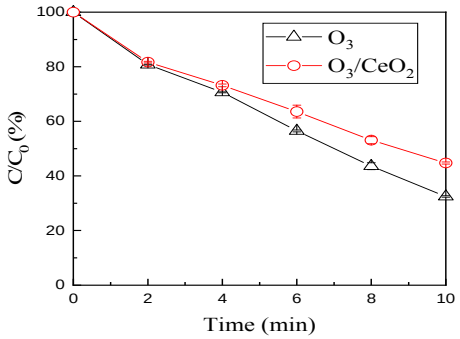

Figure S5 Change of the concentrations of DEET with reaction time in O_3 and O_3/CeO_2 processes. Experiment conditions: [DEET] = 50 μM, [O_3] = 10 mg/(L·min), [CeO_2] = 500 mg/L, and pH=7 with 10 mM PBS.

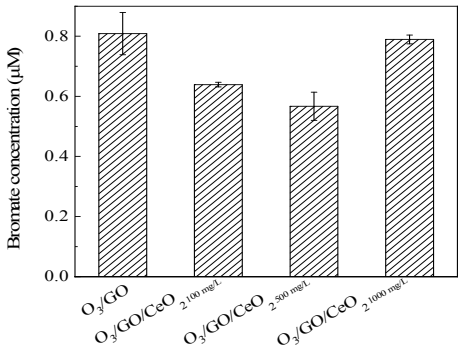

Figure S6 Effect of CeO_2 dose on formation of bromate in catalytic ozonation. Experiment conditions: $[Br^-]$ = 12.5 μM, $[O_3]$ = 10 mg/(L·min), $[CeO_2]$ = 500 mg/L, and pH=7 with 10 mM PBS.