Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

Convenient synthesis and engineering of ultrafine Co_3O_4-incorporated carbon composite: towards practical application of environmental remediation

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Electronic Supplementary Material

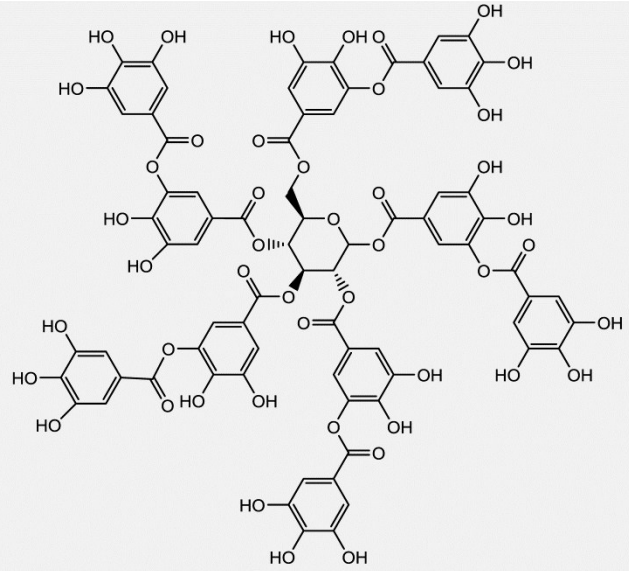


Fig. S1 The chemical structure of TA

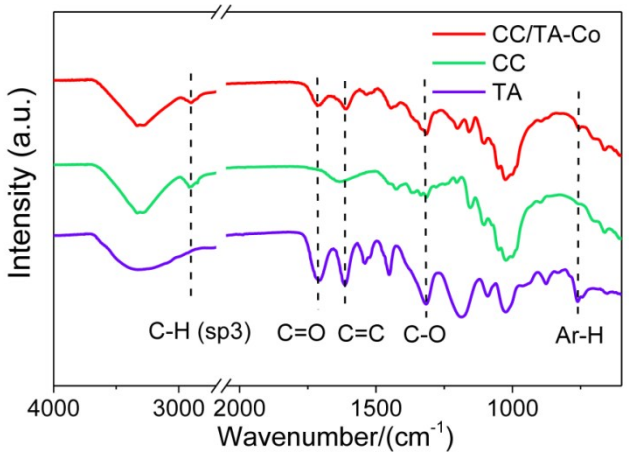


Fig. S2 The FT-IR spectra of TA, CC and CC/TA-Co.

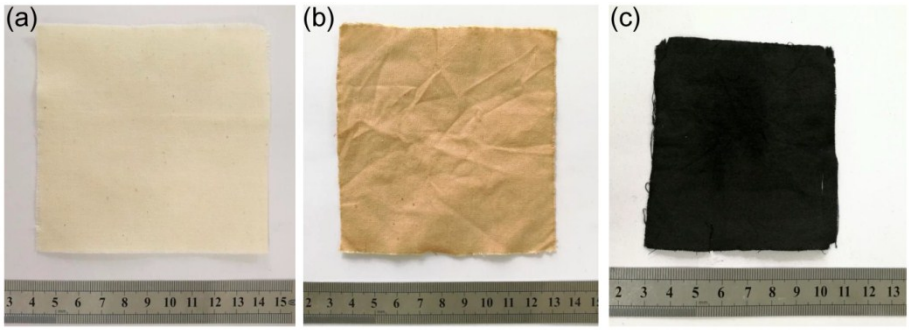


Fig. S3 The pictures of (a) CC, (b) CC/TA-Co and (c) Co_3O_4/CC

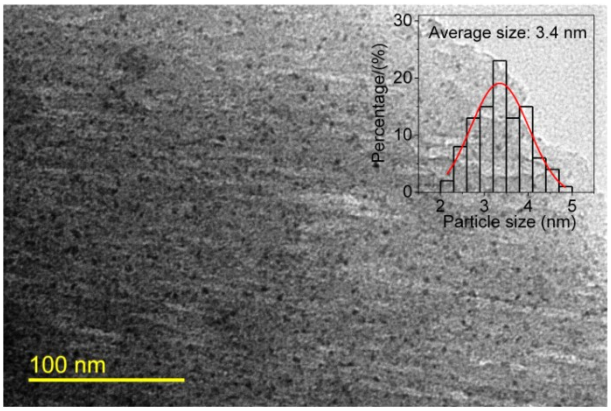


Fig. S4 The TEM image and size distribution profile of Co/CC

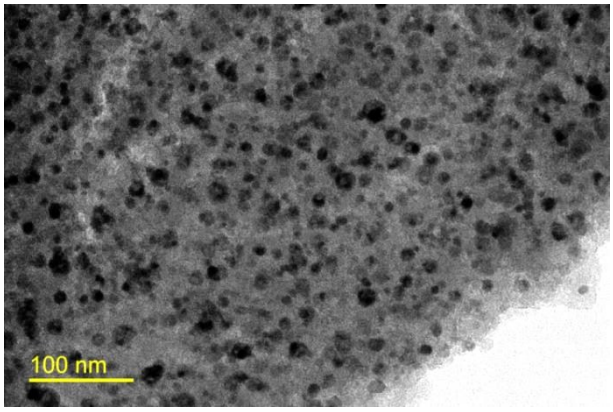


Fig. S5 The TEM image of Co_3O_4-C

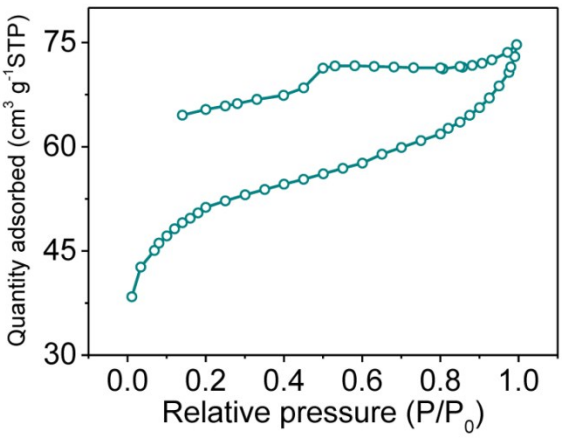


Fig. S6 N_2 adsorption-desorption isotherms of Co_3O_4/CC.

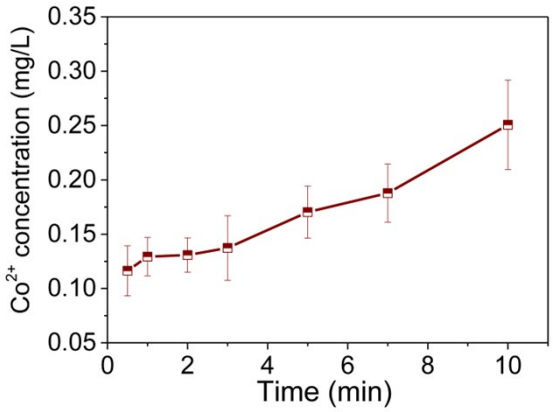


Fig. S7 The Co^{2+} leaching of Co_3O_4/CC in the degradation process

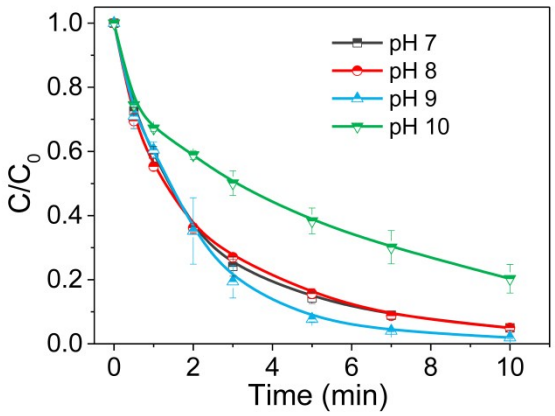


Fig. S8 The effect of initial solution pH on BPA removal efficiency

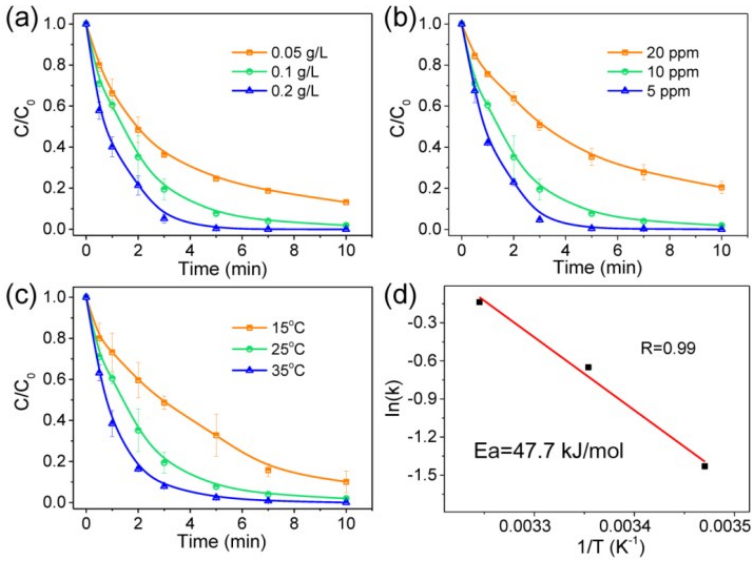


Fig. S9 Efforts of (a) PMS dose, (d) BPA concentration and (c) reaction temperature on BPA removal efficiency. Reaction conditions: [BPA] = 10 mg/L (for a, c), [PMS] = 0.1 g/L (for b, c), catalyst = 0.1 g/L, initial pH = 9.0, T = 298 K (for a, b), (d) the estimation of activation energy.

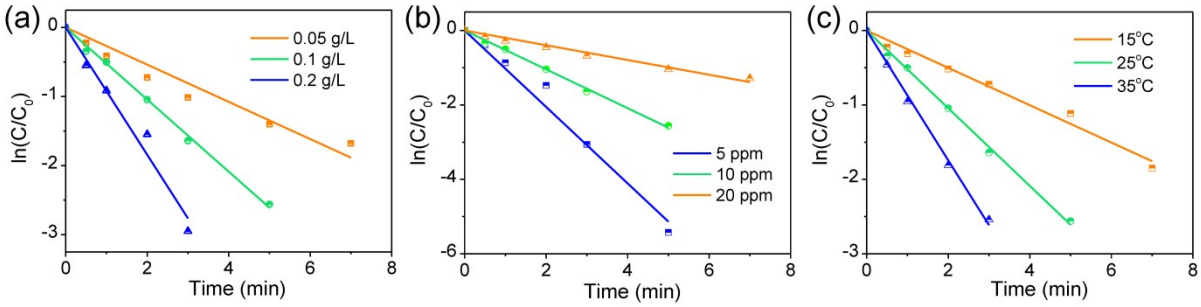


Fig. S10. Efforts of (a) PMS dose, (d) BPA concentration and (c) reaction temperature on BPA removal efficiency.

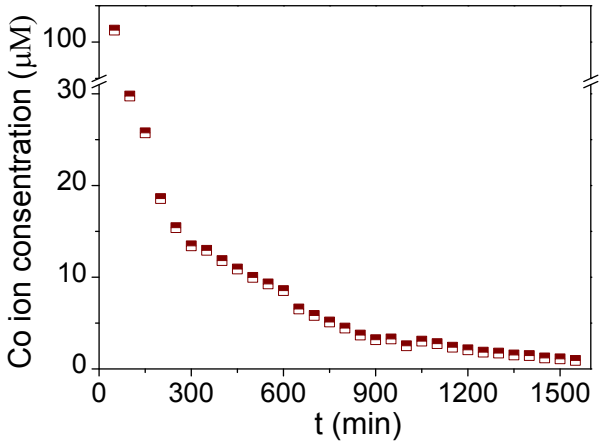


Fig. S11 The change of concentration of Co^{2+} varying with BPA solution volume

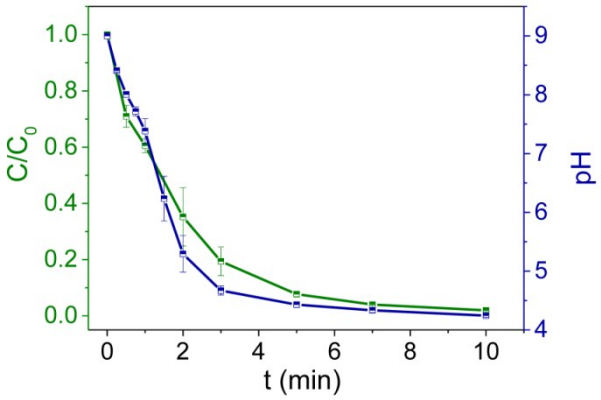
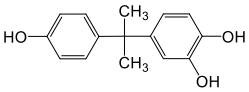
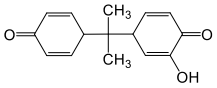
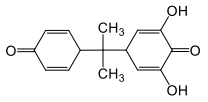
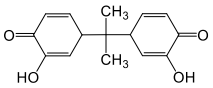


Fig. S12 The relationship between the removal efficiency of BPA and pH of solution.

Table S1 The main aromatic intermediates from BPA degradation

Compound	Molecular weight (m/z)	Tentative structure
Monohydroxylated BPA (MHBPA)	244	
Quinone of monohydroxylated BPA	242	
2-Hydroxy-4-(2-(3-hydroxy-4-oxocyclohexa-2,5-dienyl)propan-2-yl)cyclohexa-2,5-dienone [or quinone of dihydroxylated BPA] or Quinone of dihydroxylated BPA	256	 or 
Biphenyldiol	186