

[Supporting Information]

Photoenhanced Transformation of Hydroxylated Fullerene (Fullerol) by Free Chlorine in Water

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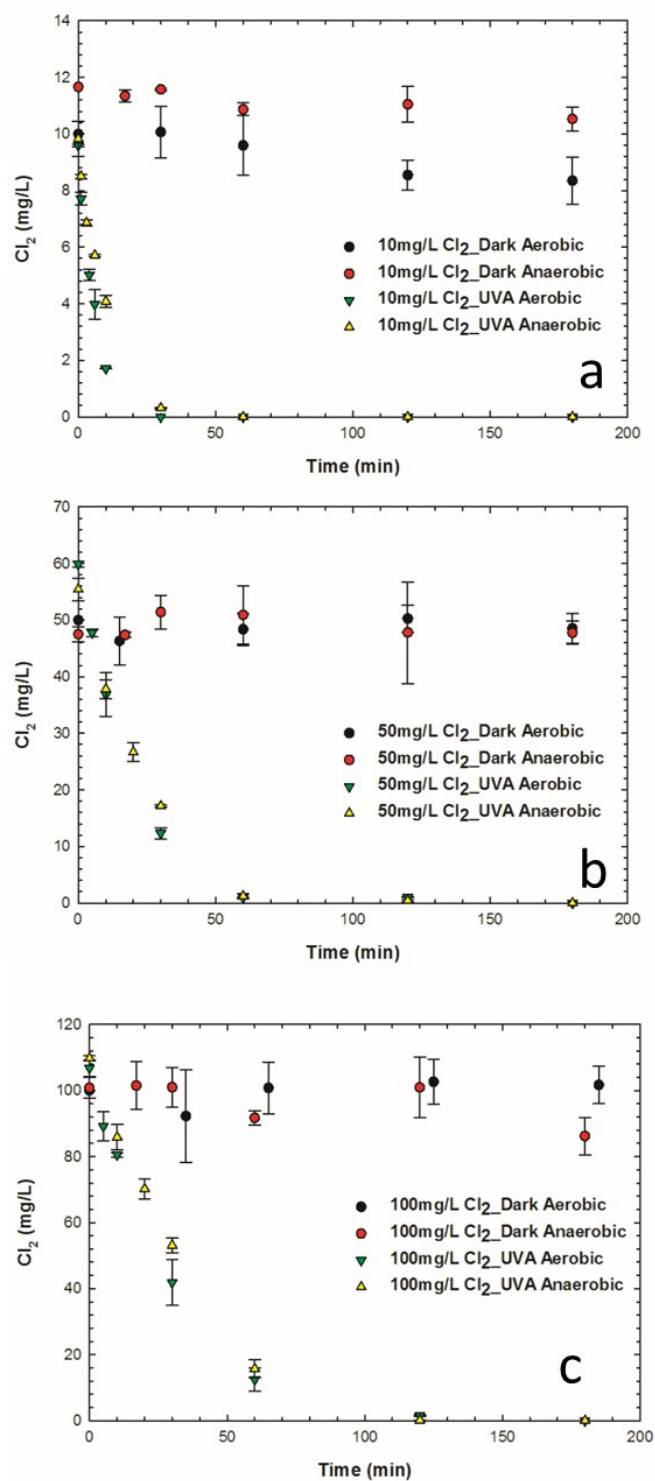
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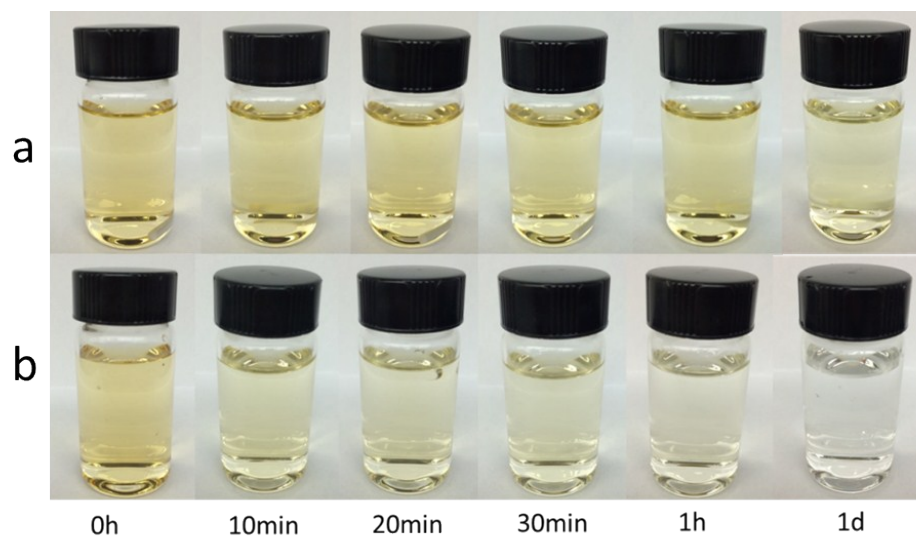
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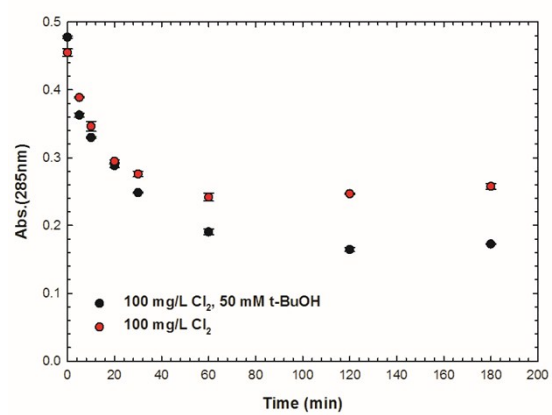
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22 **Figure S1.** Free chlorine concentrations during the reactions with different conditions: (a) 10
 23 mg/L Cl_2 ; (b) 50 mg/L Cl_2 ; (c) 100 mg/L Cl_2 .



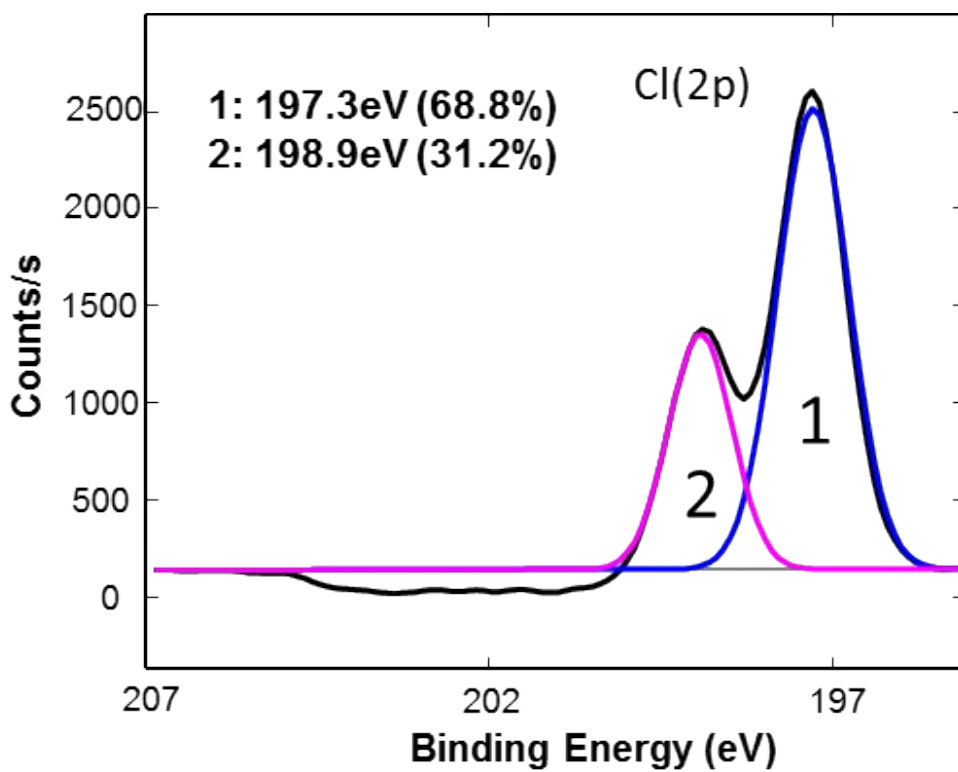
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25 **Figure S2.** Fullerol (photo)chlorination reactions: (a) dark condition (20 mg/L fullerol with 100
 26 mg/L Cl_2 at pH 6.5); (b) UVA irradiating condition (20 mg/L fullerol with 100 mg/L Cl_2 at pH
 27 6.5; UVA: 351 nm, 2 mW/cm²).



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29 **Figure S3.** Fullerol UV absorbance at 285 nm in the presence of free chlorine (100 mg/L Cl₂) as
 30 functions of time under UV aerobic conditions (red dot: 50 mM t-BuOH; black dot: no t-BuOH).



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32 **Figure S4.** Cl2p XPS spectrum of NaCl and curve fitting analysis.

33 **Table S1.** Total organic carbon (mg/L) of fullerol solutions after reactions under different experimental
 34 conditions ($\text{TOC}_{\text{unreacted fullerol}} = 10.95 \pm 0.19 \text{ mg/L}$)

Light Condition	Dark (30d)		UVA (3h)	
Initial Cl_2 (mg/L)	10	100	10	100
TOC (mg/L)	10.6±0.55	10.9±0.03	10.38±0.55	10.67±0.12

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