



## Technical Data Sheet

# ACS Material Chlorine Functionalized Graphene Quantum Dots

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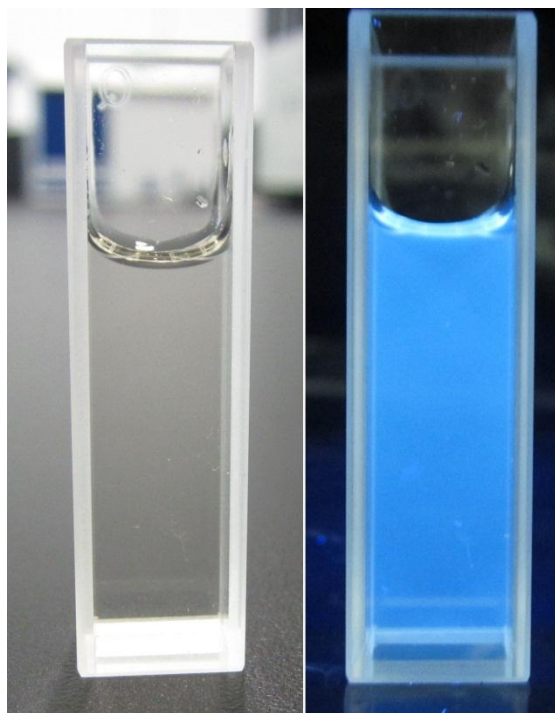
Revision: 071917

## 1. Preparation Method

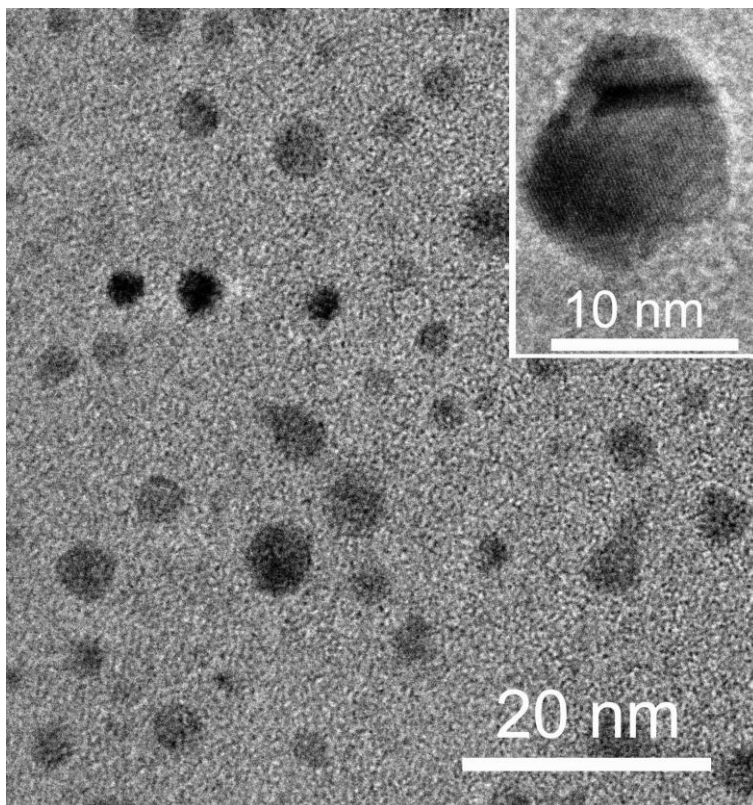
Hydrothermal Method

## 2. Characterizations

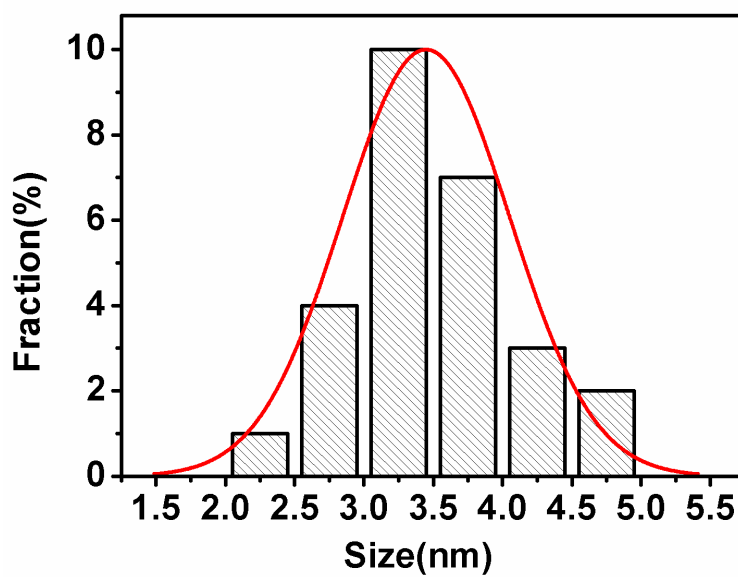
<b>Composition:</b>	Chlorine Functionalized Graphene Quantum Dots
<b>Appearance:</b>	Colorless solution
<b>PL Peak:</b>	452 nm (reference only, actual value may vary)
<b>Particle Size:</b>	<6 nm
<b>Concentration:</b>	1 mg/mL
<b>Solution:</b>	Water (Containing a little ethylene glycol)



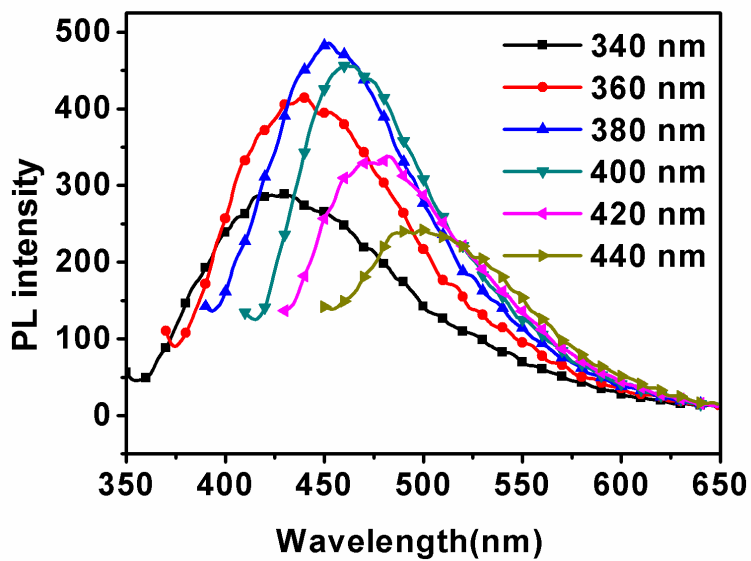
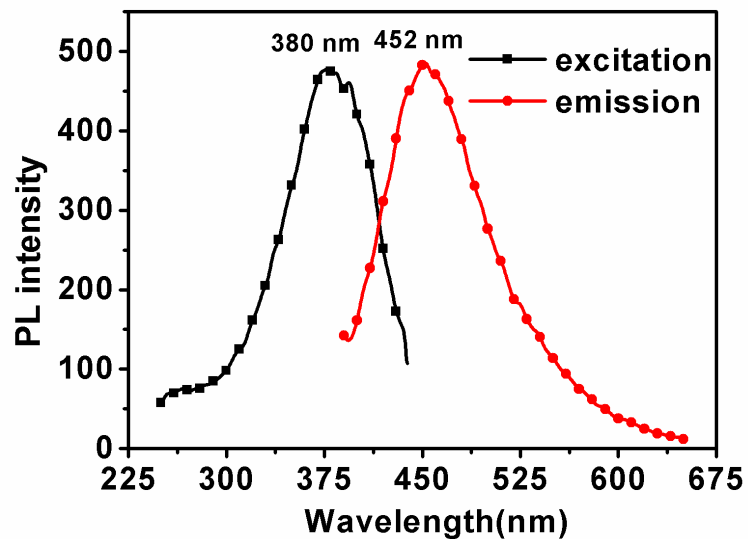
Emission Photos of ACS Material Chlorine Functionalized Graphene Quantum Dots  
Excited by Natural Light (left) and UV Light (right)



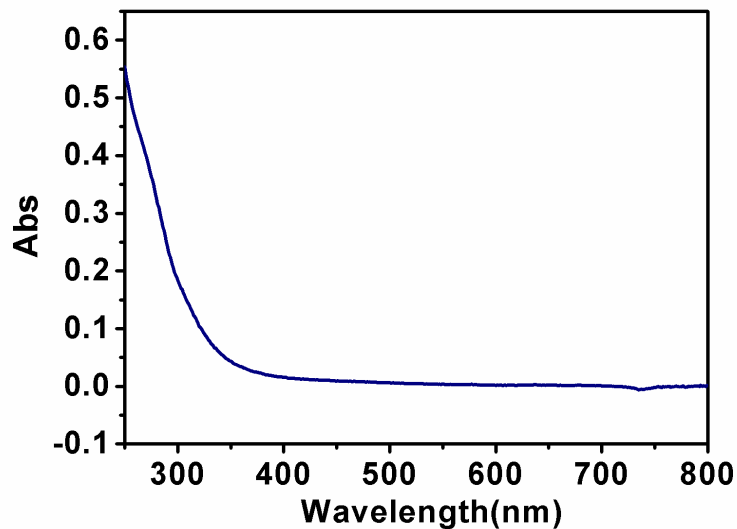
Typical TEM Image of ACS Material Chlorine Functionalized Graphene Quantum Dots



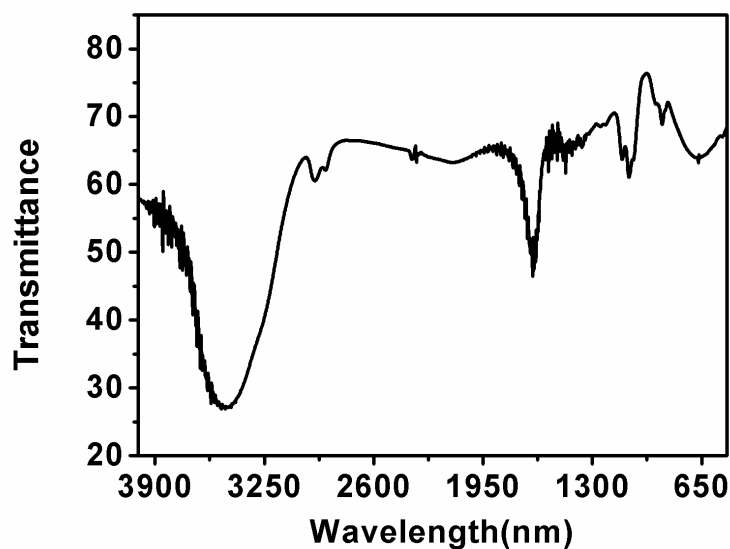
Size Distribution of ACS Material Chlorine Functionalized Graphene Quantum Dots



PL Spectra of ACS Material Chlorine Functionalized Graphene Quantum Dots



Absorption Spectra of ACS Material Chlorine Functionalized Graphene Quantum Dots



IR Spectra of ACS Material Chlorine Functionalized Graphene Quantum Dots

### 3. Application Fields

Graphene quantum dots exhibit unique optical and electronic properties due to their quantum confinement and edge effects, and have a variety of novel applications, such as low-toxicity and photostable fluorescence probes for cell imaging and biosensing, low-cost acceptors for organic photovoltaic cells and light emitting diodes, a metal-free platform for surface-enhanced Raman scattering, and an upconverted sensitizer for modifying rutile TiO<sub>2</sub> nanocrystals as a composite visible-light photocatalyst.

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