



Technical Data Sheet

ACS Material Green Graphene Quantum Dots

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Contact Information:

Manufacturer: ACS Material, LLC.

Address: 959 E Walnut St., Suite 100,

Pasadena, CA 91106, USA

Phone: (866)-227-0656

Fax: (781)-518-0284

E-Mail: contact@acsmaterial.com

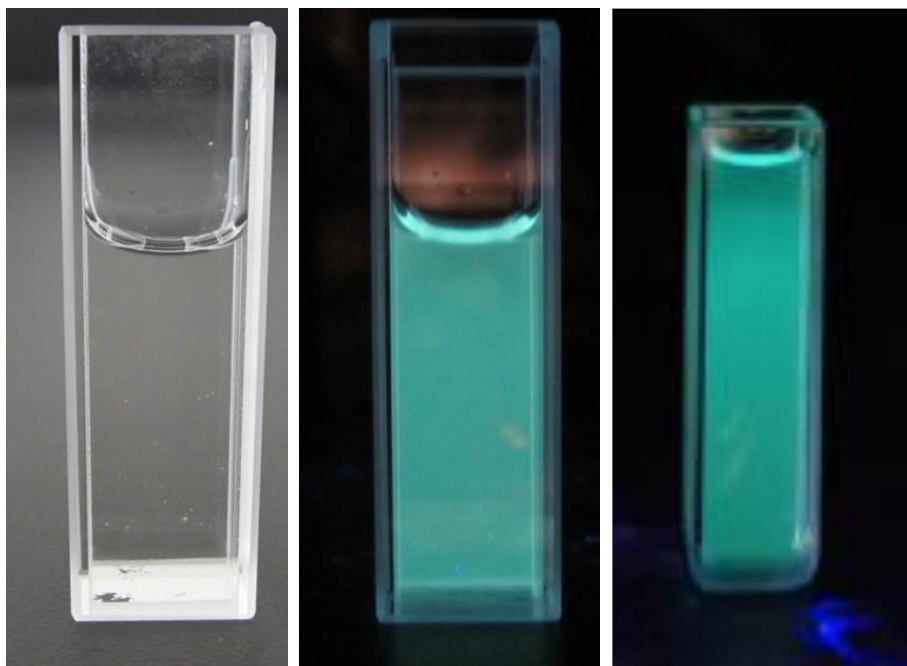
Revision: 060122

1. Preparation Method

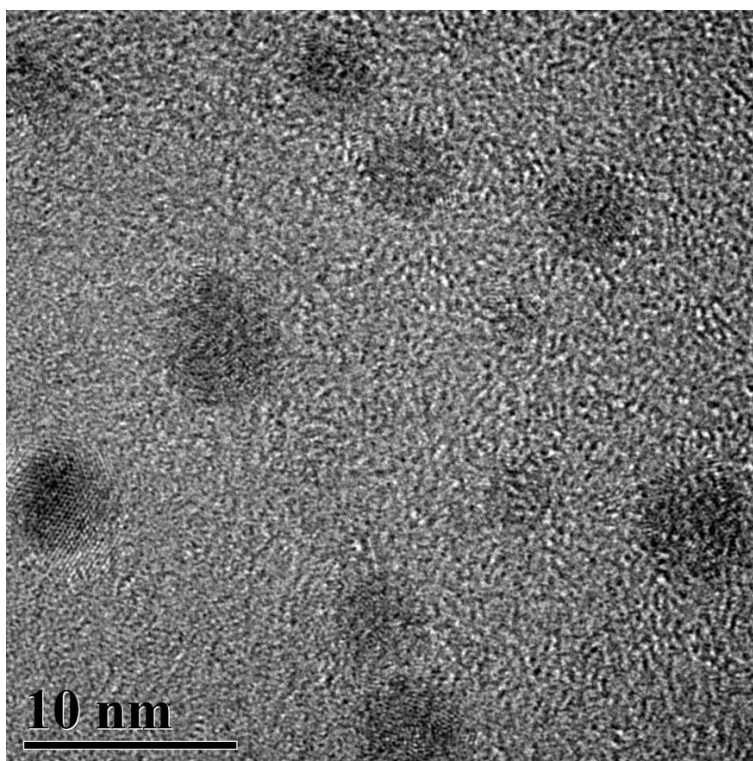
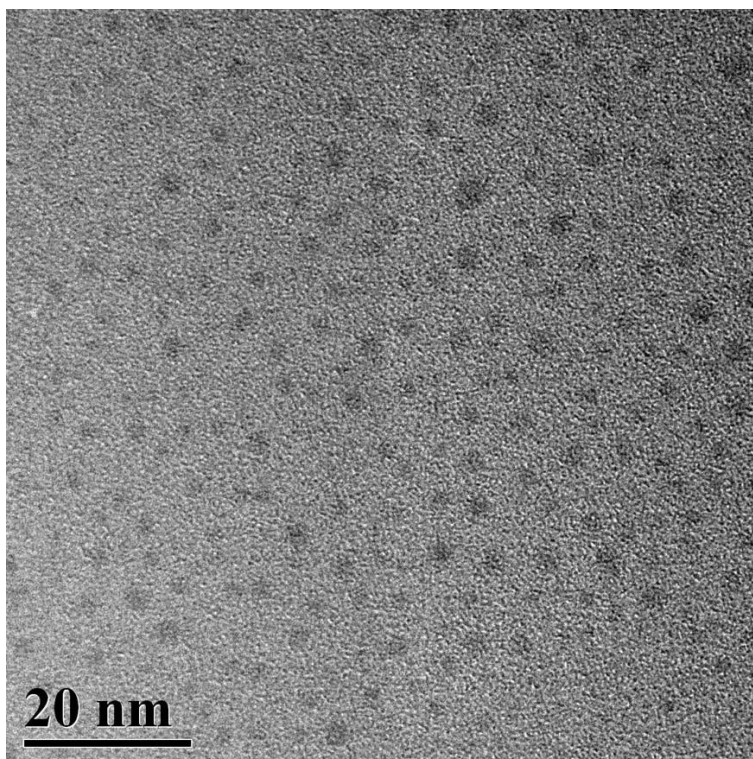
Hydrothermal Method

2. Characterizations

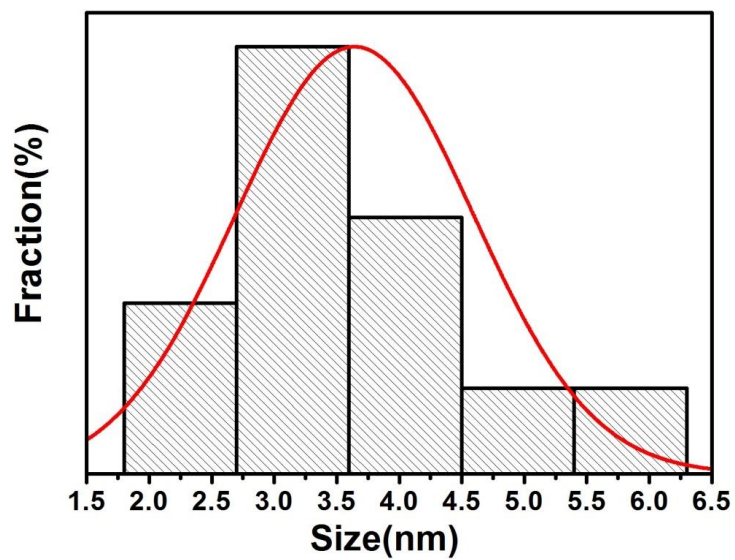
Composition:	Green Graphene Quantum Dots
Appearance:	Colorless solution
Purity	~90%
Particle Size:	<10 nm
Concentration:	1 mg/mL, Max: 10 mg/mL
Solution:	Water (Containing a little DMF), Ethanol (Containing a little DMF)



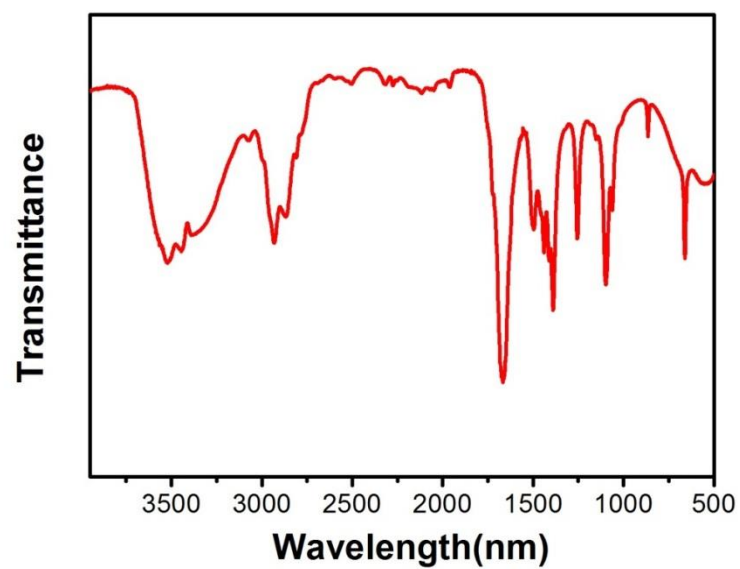
Emission Photos of Graphene quantum dots in water under natural light (left),
Graphene quantum dots in water under UV light at 365 nm (center) and
Graphene quantum dots in EtOH under UV light at 365 nm (right)



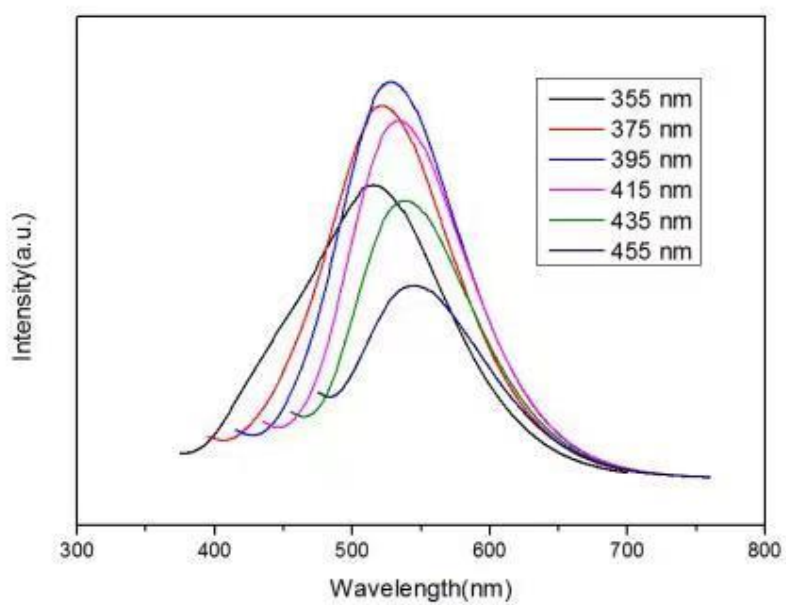
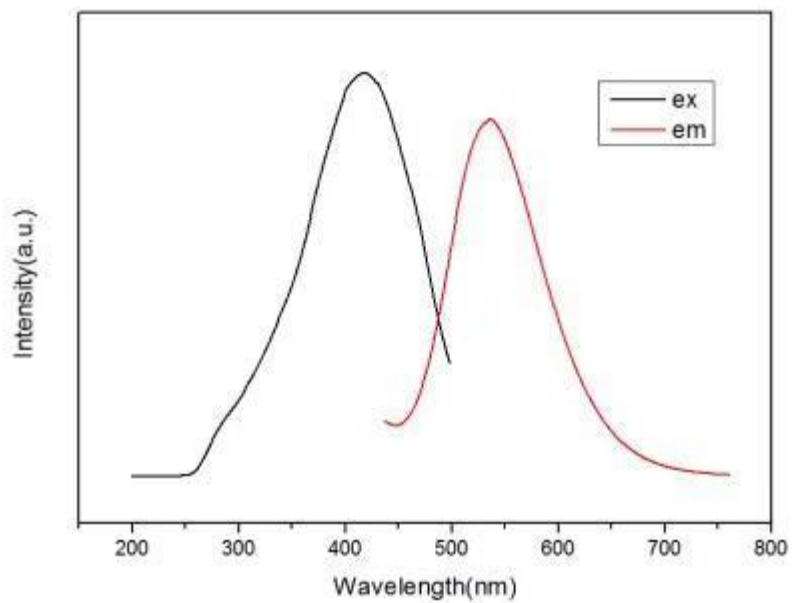
Typical TEM Image of ACS Material Green Graphene Quantum Dots



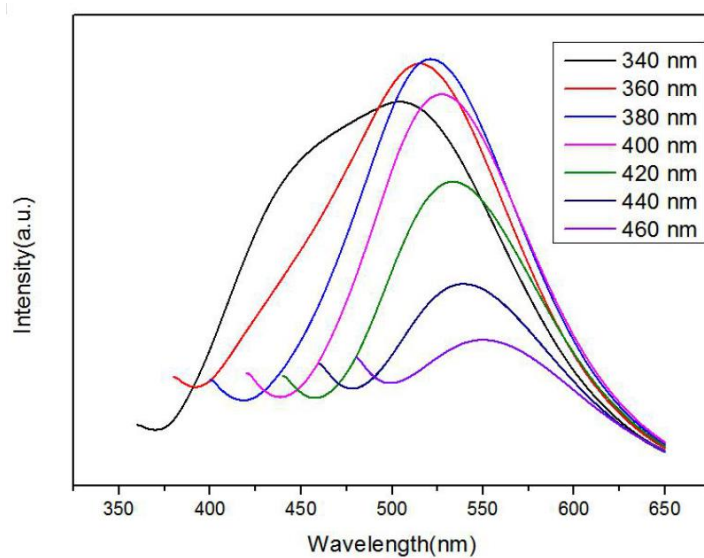
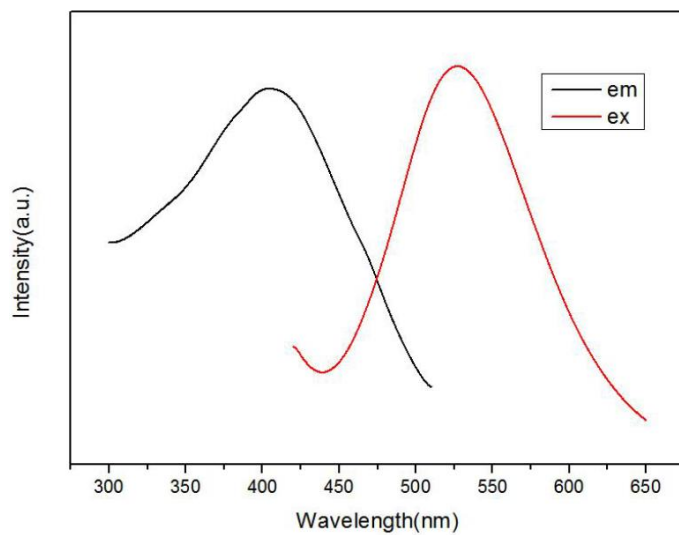
Size Distribution of ACS Material Green Graphene Quantum Dots



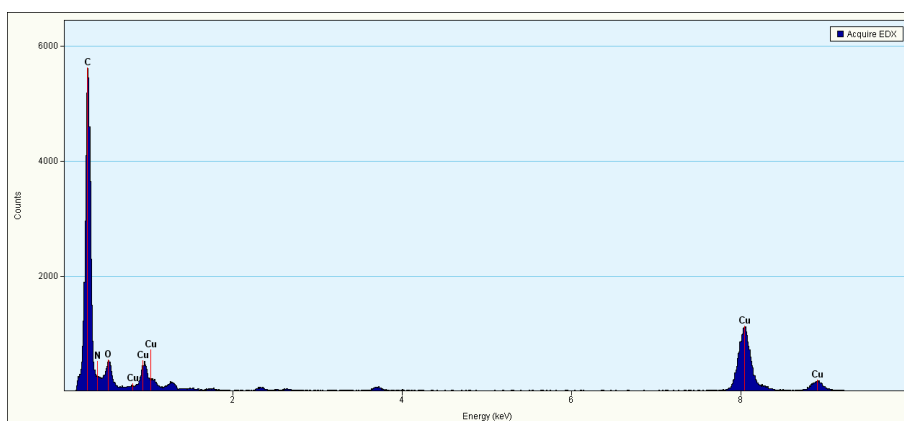
IR Spectra of ACS Material Green Graphene Quantum Dots



PL spectrum of ACS Material Green Graphene quantum dots in water



PL spectrum of ACS Material Green Graphene quantum dots in Ethanol



	Wt%	At%
C	91.6	93.18
N	4.02	3.51
O	4.33	3.30

EDX Spectra of ACS Material Green 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 TiO₂ nanocrystals as a composite visible-light photocatalyst.

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