



Technical Data Sheet

ACS Material Upconverting Nanoparticles

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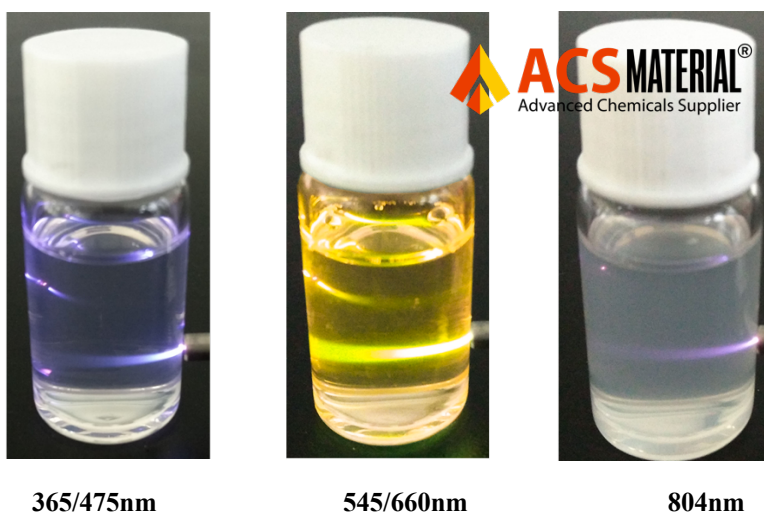
[2 – Application Fields](#)

Contact Information:

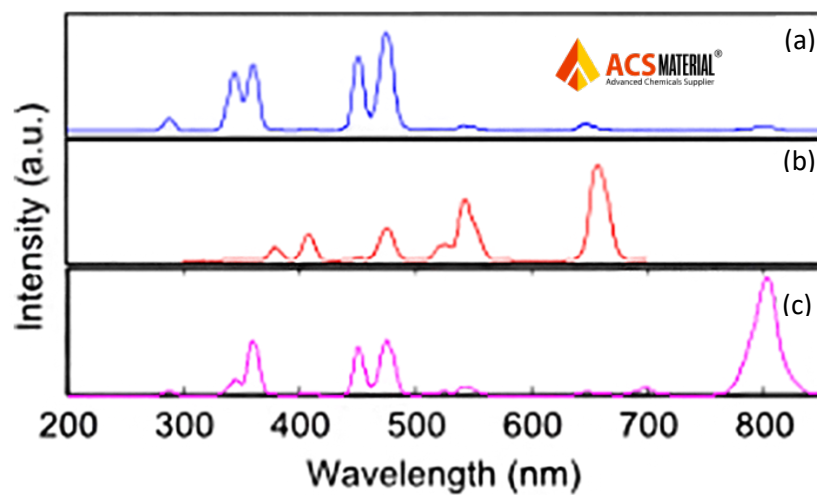
Manufacturer: ACS Material, LLC.
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Pasadena, CA 91106, USA
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Revision: 091718

1. Characterizations

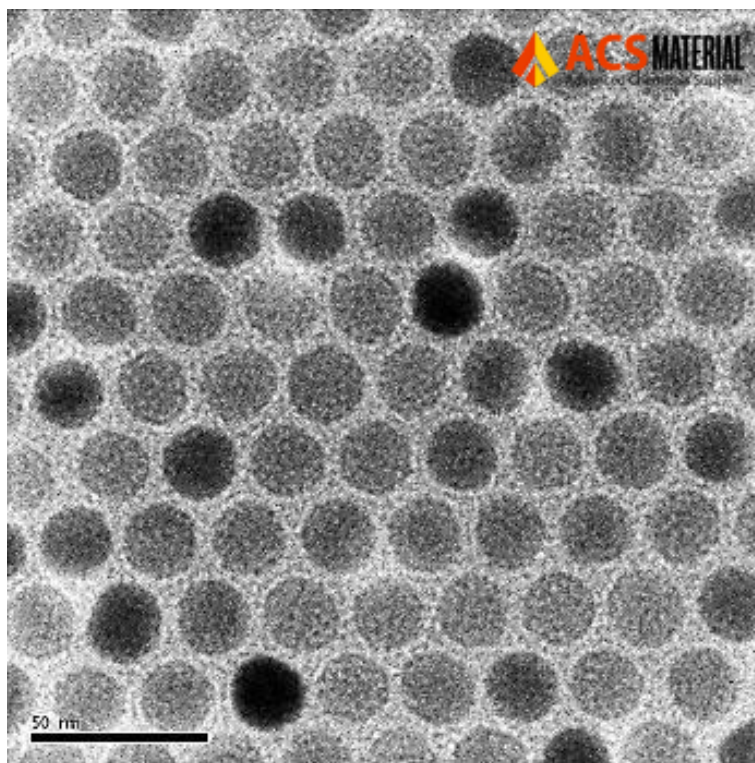
Composition	Upconverting nanoparticles	
Diameter	25 nm	
Appearance	Ivory white solution	
Crystal formula	NaYREF ₄ (RE: Yb, Er, Tm, Gd, Mn, Lu)	
Concentration	5 mg/mL	
Solvent	Water	
Dispersity of powder	Water or ethanol	
Excitation wavelength	975 nm	
Sensitizer	Ytterbium (Yb ³⁺)	
Activator	Emission wavelength	Fluorescence
Thulium (Tm ³⁺)	365/475 nm	Purple-Blue
Erbium (Er ³⁺)	545/660 nm	Green-Yellow
Thulium (Tm ³⁺)	804 nm	Near-infrared



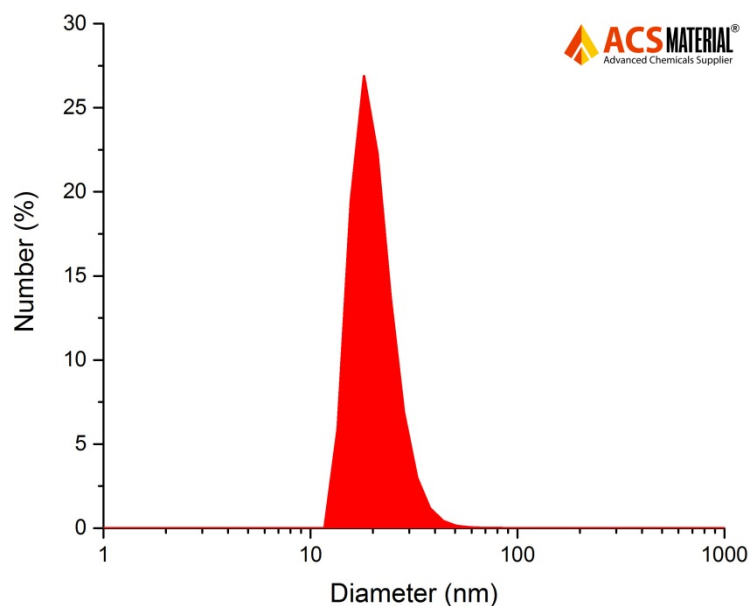
Fluorescence Image Upon Excitation at 975 nm of ACS Material Upconverting Nanoparticles



Upconversion Emission Spectra: a) 365/475nm, b) 545/660 nm, c) 804 nm of ACS Material Upconverting Nanoparticles, excitation at 975 nm



TEM Image of ACS Material Upconverting Nanoparticles



Typical Particle Size Distribution Image of ACS Material Upconverting Nanoparticles From Dynamiclight Scattering Measurement

3. Application Fields

For scientific research only. Not to be used for any animal or human therapeutic/diagnostic purposes.

- ◆ Fluorescence imaging.
- ◆ Biodetection.
- ◆ Photodynamic therapy.
- ◆ Photoactivation of anti-cancer drugs and biomolecules *etc.*

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