



Technical Data Sheet

ACS Material SiO₂-NH₂ Modified Upconverting Nanoparticles

Table of Contents

[1 – Physical and Chemical Properties](#)

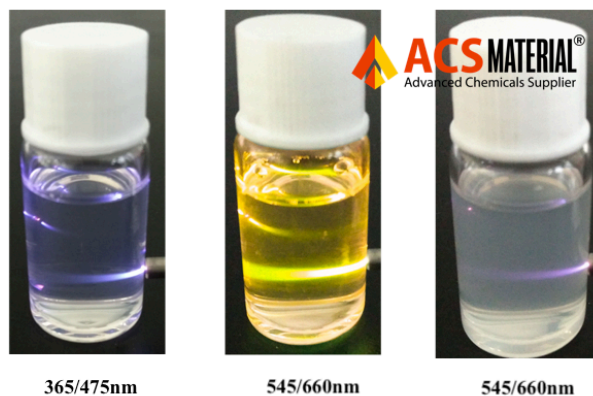
[2 – Application Fields](#)

Contact Information:

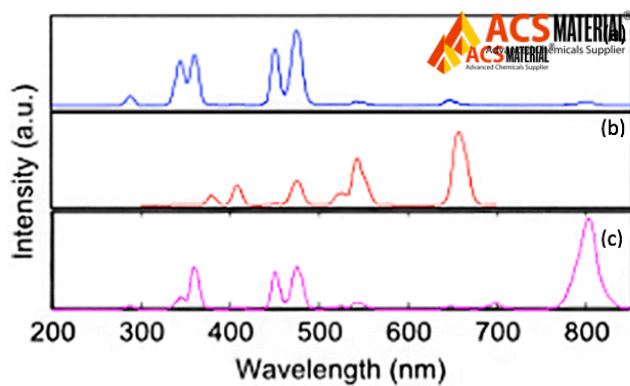
Manufacturer: ACS Material, LLC.
Address: 959 E Walnut St., Suite 100,
Pasadena, CA 91106, USA
Phone: (866)-227-0656
Fax: (781)-518-0284
E-Mail: contact@acsmaterial.com
Revision: 091718

1. Characterizations

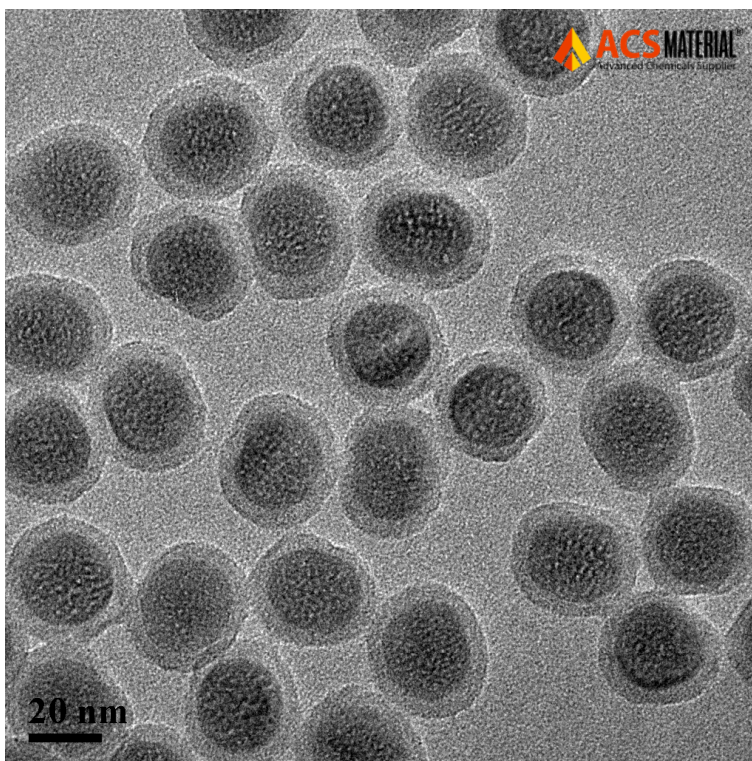
Composition	SiO ₂ -NH ₂ Modified Upconverting Nanoparticles	
Diameter	35 nm	
Appearance	Ivory white solution	
Crystal formula	NaYREF ₄ (RE: Yb, Er, Tm, Gd, Mn, Lu) @dSiO ₂ -NH ₂	
Concentration	5 mg/mL	
Solvent	Water	
Dispersity of powder	Water or aqueous medium	
Excitation wavelength	975 nm	
Sensitizer	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



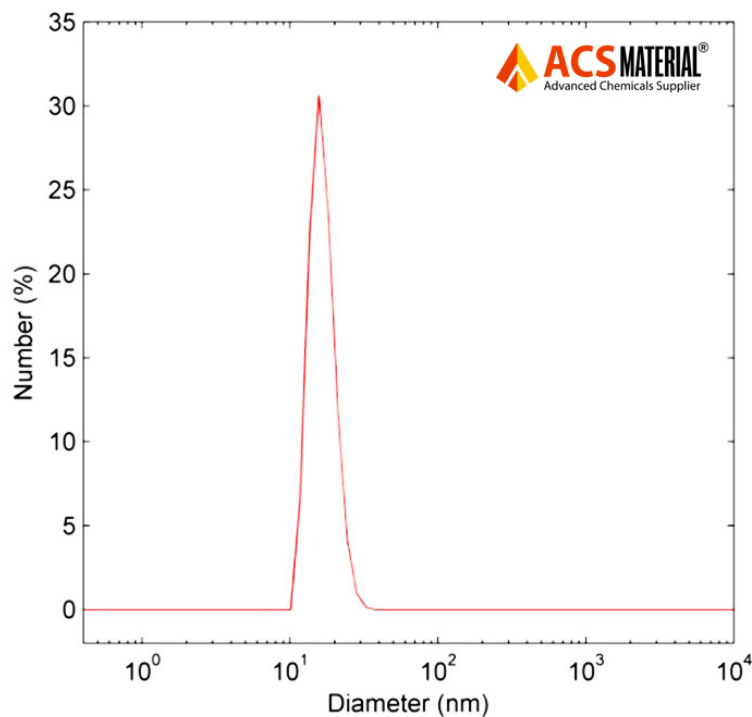
Fluorescence Image of ACS Material SiO₂-NH₂ Modified Upconverting Nanoparticles
Excitation at 975 nm (reference only)



Fluorescence Spectra: a) 365/475nm, b) 545/660 nm, c) 804 nm of ACS Material SiO₂-NH₂ Modified Upconverting Nanoparticles, Excitation at 975 nm for reference only



TEM Image of ACS Material SiO₂-NH₂ Modified Upconverting Nanoparticles



Typical Particle Size Distribution Image of ACS Material SiO₂-NH₂ Modified Upconverting Nanoparticles
From Dynamic Light Scattering Measurement

3. Application Fields

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

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

Disclaimer: ACS Material, LLC believes that the information in this Technical Data Sheet is accurate and represents the best and most current information available to us. ACS Material makes no representations or warranties either express or implied, regarding the suitability of the material for any purpose or the accuracy of the information contained within this document. Accordingly, ACS Material will not be responsible for damages resulting from use of or reliance upon this information.