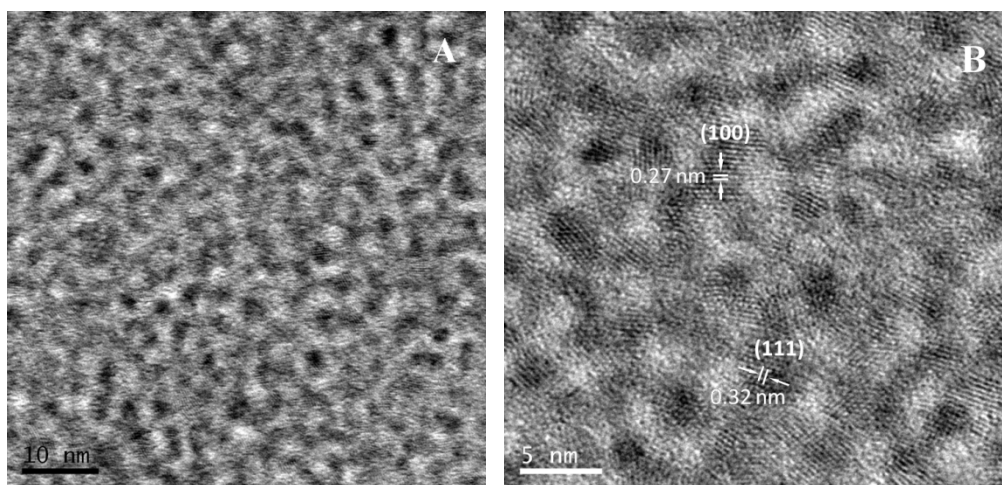


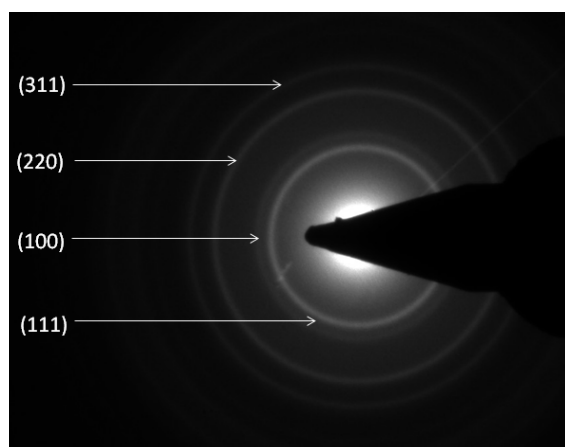
## Supplementary Information

### Concentration quenching in cerium oxide dispersions via a Förster resonance energy transfer mechanism facilitates the identification of fatty acids.

Asha Krishnan, Thadathil S. Sreeremya, A. Peer Mohamed, Unnikrishnan Saraswathy Hareesh and Swapankumar Ghosh\*



**Fig. S1** Additional (A) TEM images of ceria nanoparticles at low resolution, and (B) high resolution TEM image indicating crystal planes.



**Fig. S2** The experimental selected area electron diffraction pattern (SAED) of the as synthesized ceria nano particles.

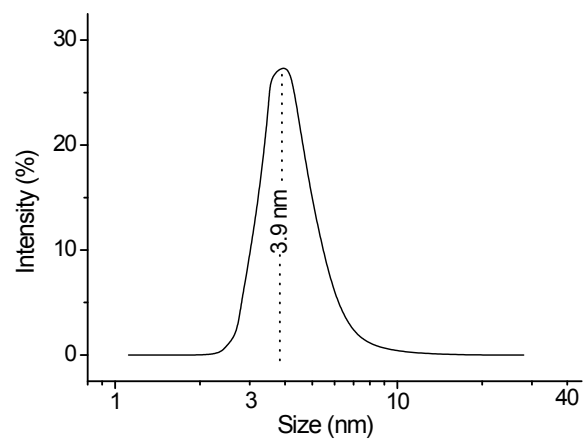


Fig. S3 Particle size distribution of the nanoparticles in toluene dispersion.

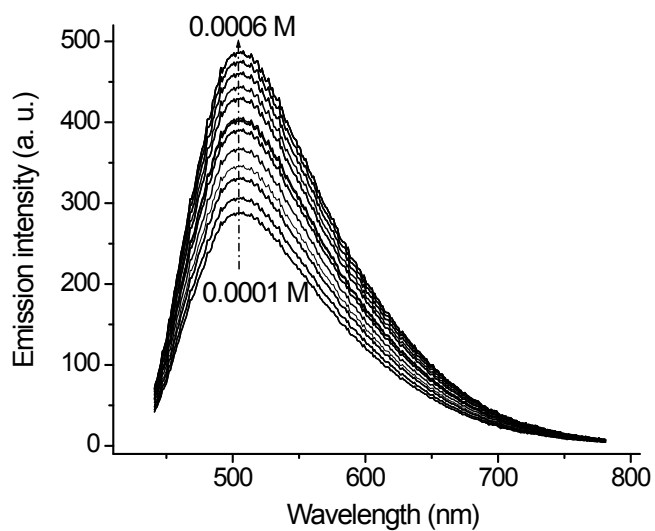


Fig. S4 Emission spectra of the dispersion in the 0.0001 to 0.0006 M concentration range.

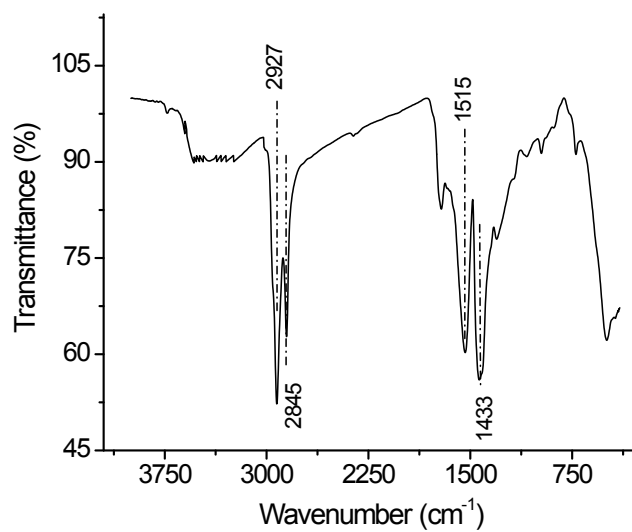
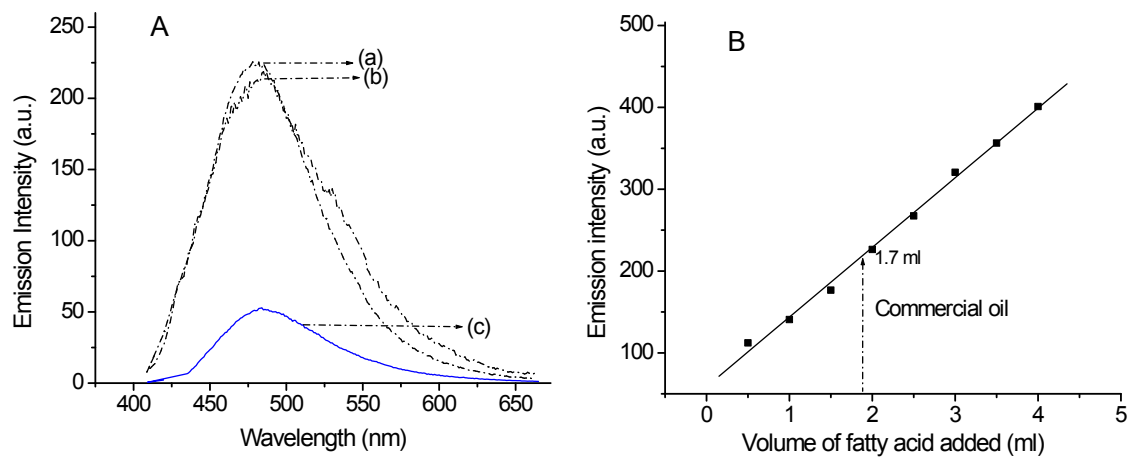


Fig. S5 FT-IR spectrum of as the synthesised and dried nanoparticles.



**Fig. S6** (A) Emission spectra of the dispersion after the addition of 2 ml of (a) oleic acid (b) commercial olive oil, and (c) parent NP dispersion without addition of spacer. (B) Estimation of oleic acid content in commercial olive oil from the standard calibration plot.