

Vegetable oil aided hydrothermal synthesis of cerium oxide nanocrystals

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Hydrothermal syntheses of cerium oxide nanocrystals were carried out under supercritical conditions using water (400 °C and 300 bar) and vegetable oil (soybean and palm). The vegetable oils were suitable for in-situ surface modification. Transmission Electron Microscope (TEM), X-Ray Diffraction (XRD) and Fourier Transform Infrared (FT-IR) techniques were used to characterize nanocrystal shape and morphology. Surface modification was found to be successful together with stable dispersion. Individual primary particles were of cubic shape with an average size of 7 nm.