

## **Abstract**

This paper explains one pot synthesis of type II water soluble L-cysteine capped cadmium telluride (CdTe) core shell quantum dots using cadmium acetate, potassium tellurite and L-cysteine as the starting materials. The reaction was carried out in a single three necked flask without nitrogen under reflux at 100 °C. Results from PL show a sharp absorption excitonic band edge of the CdTe core with respect to the core shell which loses its shoulder during the growth of the shell on the core. The PL spectra indicate a drastic shift in emission window of the core which is simultaneously accompanied by an increase in emission intensity. X-ray diffraction pattern confirms the formation of hexagonal phase for all samples. Some difference in absorption edges were observed due to varying synthesis time of CdTe NPs. The position of the absorption band is observed to shift towards the lower wavelength side for shorter durations of synthesis.