

ABSTRACT

Semiconductor quantum dots were prepared using solvo-thermal route. Cadmium chloride solution taken in a burette was poured dropwise onto a PVOH solution in which Se vapours was introduced resulting in formation of CdSe quantum dots in the PVOH matrix. The sample is characterized using XRD, UV-vis spectroscopy, Scanning electron microscopy (SEM) and finally using transmission electron microscopy (TEM). The various characterization techniques determine the nature as well as size of the particles. The quantum dots obtained were of average size 20 nm and 40 nm for different experimental condition. They were used for investigating photorefractive properties by studying extinction coefficients Using Beer Lambert's law.

Keywords: CdSe, Quantum dots, Photorefractive property, Beer Lambert's law, Extinction coefficient, Transmission electron microscopy, UV- vis spectroscopy.