

**Diffuse reflectance properties and bandgap analysis of Mg<sub>2</sub>SiO<sub>4</sub>: RE<sup>3+</sup> (RE= Eu, Tb, Sm, Dy) nanophosphors for light emitting device application.**

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**Abstract:**

RE<sup>3+</sup>(RE= Eu, Tb, Sm, Dy) doped Mg<sub>2</sub>SiO<sub>4</sub> nanophosphors were analyzed under Diffuse Reflectance Spectral (DRS) studies. The variations of absorption peaks for all different dopants at different wavelengths have been discussed. The effect of concentration on absorption edges also been discussed. Further the bandgap analysis of RE<sup>3+</sup> doped Mg<sub>2</sub>SiO<sub>4</sub> nanophosphors were carried out using Kubelka-Munk (K-M) function. The absorption wavelengths obtained for different samples are used as excitation wavelength to get emission of light in different region so that the phosphors are used for light emitting device applications.