

## عنوان مقاله:

Synthesis, Microstructure and Photoluminescence Properties of Yttrium Orthovanadates: Influences of Silica Nano-Particles and Nano-Layers

## محل انتشار:

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## خلاصه مقاله:

In this investigation, firstly  $\text{Eu}^{3+}$  doped  $\text{YVO}_4$  phosphor was synthesized using solid state method. Then silica was coated on the surface of particles via sol-gel method. The XPS characterization confirmed the formation of Y-O-Si and V-O-Si bondings between  $\text{YVO}_4:\text{Eu}^{3+}$  phosphor particle and  $\text{SiO}_2$  coating. In addition, it was found that although the amounts of added  $\text{SiO}_2$  were not remarkable, but it resulted in enhancement of emission intensity of the phosphors. Finally by employing ESR analysis, it was shown that surface oxygen vacancies, result in reduction of  $\text{V}^{5+}$  to the lower  $\text{V}^{4+}$  valence state of V.

## کلمات کلیدی:

Solid state, Sol-Gel, Silica, Coating, photoluminescence

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1904840>

