

Supercritical water synthesis of
Eu³⁺ activated Y₃Al₅O₁₂ phosphor nanoparticles

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Luminescent yttrium aluminum garnet (Y₃Al₅O₁₂, YAG) nanoparticles doped with Eu are synthesized under supercritical water (SCW) conditions using a batch reactor. As the pH changes and concentration of activators, property of synthesized nano-sized phosphor were investigated. Particles were characterized by X-ray diffraction (XRD), scanning electronic microscope (SEM) and photoluminescence(PL) measurements. And the synthesized phosphor in SCW using a batch reactor was compared with a solid-state method.