

## Scintillation Properties of $\text{LiPO}_3 : \text{Ce/ZnS:Ag}$ Scintillator

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### Abstract

To enhance a light output of  $\text{LiPO}_3:\text{Ce}$  scintillator under current research and development,  $\text{LiPO}_3:\text{Ce/ZnS:Ag}$  scintillators were synthesized by means of the melting and precipitation process. Photoluminescence (PL) properties of  $\text{LiPO}_3:\text{Ce/ZnS:Ag}$  were investigated in the different heat treatment temperature. After addition of ZnS:Ag, Emulsification was observed due to immiscibility phenomenon and added ZnS:Ag acted as a phase separation promoter. The transparent scintillator, of which added amount of ZnS:Ag was increased into 25wt% by means of continuous increase of  $\text{Na}_2\text{O}$  amount to suppress this immiscibility phenomenon, could be obtained. The highest of PL intensity of  $\text{LiPO}_3:\text{Ce/ZnS:Ag}$  scintillator was observed under the heat treatment temperature  $500 \pm \text{C}$  for 4h.