

INFLUENCE OF THE PREPARING CONDITIONS ON THE OPTICAL CHARACTERISTICS CU₂IN₂S₂/ZNS NANOPARTICLES.

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TÓM TẮT:

In this report, we present the synthesis of Cu₂In₂S₂/ZnS nanoparticles (NCs) in diesel solvent by heating-up method. The influence of various technical parameters, including the growth time, reaction temperature, Cu/In molar ratio on the optical properties have systematically been investigated. The high quality Cu₂In₂S₂ nanocrystals were obtained with the synthesis at 210 °C ÷ 230 °C and the Cu/In ratio of 0.5:1 ÷ 1.5:1. The quality of Cu₂In₂S₂ nanocrystals could be improved by adding Zn to change the Zn/Cu₂In₂S₂ molar ratio. The absorption and photoluminescence studies of the synthesized Cu₂In₂S₂ nanoparticles showed clearly the quantum confinement.