Some physical properties of $ZnAl_2O_4$: Cr^{3+} (Co^{2+}) powders prepared by hydrothermal method

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Abstract: $ZnAl_2O_4$: Cr^{3+} (Co^{2+}) nanopowders were prepared by hydrothermal method and annealed at various temperatures. The samples were characterized by X - ray diffraction, transmission electron microscopy, photoluminescence and photoluminescence excitation spectra. The results show that crystal structure and optical properties of the samples were affected by heat treatment regime. When annealing temperature increased, crystal structure of the samples became better. Optical spectra of the ions Cr^{3+} are sensitive to crystal structure of the host lattice. Electron transitions difference in absorption and radiation processes between the samples $ZnAl_2O_4$: Co^{2+} unannealed and annealed at high temperature was investigated. ?? 2009 IOP Publishing Ltd.

Author Keywords: Hydrothermal; Nanopowders; ZnAl2O4: Cr3+ (Co2+)

Year: 2009

Source title: Journal of Physics: Conference Series

Volume: 187

Art. No.: 12053

Link: Scorpus Link

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ISSN: 17426588

DOI: 10.1088/1742-6596/187/1/012053

Language of Original Document: English

Abbreviated Source Title: Journal of Physics: Conference Series

Document Type: Article

Source: Scopus

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