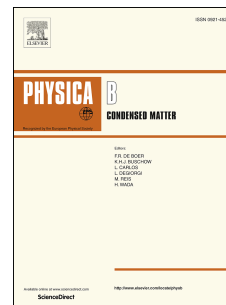


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Luminescence properties of Cr³⁺ ions in Na₂ZnP₂O₇ crystal

Ali Amara^a, Lakhdar Gacem^{a*}, Ahmed Gueddim^a, Rim Belbal^b, Mohamed Toufik Soltani^c,
Lakhdar Guerbous^d

^a Materials Science and Informatics Laboratory, University of Djelfa, 17000, Djelfa, Algeria.

^b Materials Physics Laboratory, University of Laghouat, 03000, Laghouat, Algeria.

^c Laboratory of Physics of Photonics and Multifunctional Nanomaterials, University of Biskra, 07000,
Biskra, Algeria.

^d Laser Department, Nuclear Research Center of Algiers, 02 Bd. Frantz Fanon, BP 399
Algiers, Algeria.

Abstract

A green emitting phosphors have been successfully synthesized of Na₂ZnP₂O₇ (NZPO) doped by chrome (Cr³⁺) using a solid state reaction method in air atmosphere for different Cr³⁺ concentrations (1, 1.25, 1.5, 1.75, 2 and 2.25 mole %). The samples synthesized were characterized by X-ray diffraction (XRD) which indicated that the Na₂ZnP₂O₇: Cr³⁺ phases crystallize in P4₂/mm tetragonal space group. Photoluminescence properties were investigated. The emission band is found to be centred at 527 nm under 417 nm excitation wavelength. The CIE chromaticity coordinates and the correlated color temperature (CCT) are both addressed. The information derived from the present study may be useful for white-LEDs.

Keywords : Cr-doped NZPO, Luminescence, green light, XRD, photoluminescence, CIE, CCT;

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