

UV-SPECTROSCOPY AND BAND STRUCTURE OF Ti: Al₂O₃

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ABSTRACT

Spectroscopic properties and excited-state absorption (ESA) of Ti³⁺ doped Al₂O₃ were investigated in detail. Absorption spectrum was carried in the range of 200–800 nm by UV-Vis NIR spectrometer, and the emission spectra in the range 200–900 nm was recorded by a Perkin Elmer LS 55 luminescence Spectrometer. The excitation spectra of these emissions were measured and interpreted using a band model for the Ti: Al₂O₃ system.

Keywords: Ti³⁺:Al₂O₃; Absorption; Charge-transfer transitions; UV-spectroscopy

<http://journal.masshp.net/wp-content/uploads/Journal/2012/Hamdan%20Hadi%20Kusuma%2041-47.pdf>

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