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## Pulsed laser deposited KY<sub>3</sub>F<sub>10</sub>:Ho<sup>3+</sup> phosphor thin films

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**Abstract content** (Max 300 words) **Formatting & Special chars**

Thin films of KY<sub>3</sub>F<sub>10</sub>:Ho<sup>3+</sup> phosphor have been successfully prepared by pulsed laser deposition on (100) silicon substrate. The effect of high and low deposition pressures on the structural, morphological and luminescence properties of the films were investigated. The X-ray diffraction (XRD) results show that the films crystallized in tetragonal polycrystalline phase of KY<sub>3</sub>F<sub>10</sub> (in agreement with JCPDS card No 27-0465). Field Emission Scanning Electron Microscope (FE-SEM) and Atomic Force Microscope (AFM) results show clear grains of the deposited films. The EDS elemental mapping result shows Yttrium excess. The thickness of the films was estimated using a weight difference method employing a sensitive electronic microbalance. Green PL emission at 540nm was investigated at four excitation wavelengths; namely, 362, 416 and 454 and 486nm. The highest PL intensity occurred at excitation of 454nm. In addition, red emission was observed at 650 and 750nm for all the excitations. The green emission at 540 nm is ascribed to the 5F<sub>4</sub>–5I<sub>8</sub> and 5S<sub>2</sub>–5I<sub>8</sub> transitions, the red emission at 750 nm are due to the 5F<sub>4</sub>–5I<sub>7</sub> and 5S<sub>2</sub>–5I<sub>7</sub> transitions of Ho<sup>3+</sup>.

**Apply to be considered for a student award (Yes / No)?**

Yes

**Level for award (Hons, MSc, PhD, N/A)?**

PhD

**Main supervisor (name and email) and his / her institution**

Prof. F. B. Dejene, University of the Free State

**Would you like to submit a short paper for the Conference Proceedings (Yes / No)?**

Yes

**Please indicate whether this abstract may be published online (Yes / No)**

Yes

**Primary author:** Mr DEBELO, Nebiyu (University of the Free State)

**Co-authors:** Prof. DEJENE, Franscis (University of the Free State); Dr RORO, Kittessa (CSIR)

**Presenter:** Mr DEBELO, Nebiyu (University of the Free State)

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