Correction to: The effect of deposition pressure on the material properties of pulsed laser deposited $\text{BaAl}_2\text{O}_4\text{:Eu}^{2+}$, Dy^{3+} thin films

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Correction to:

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The original version of this paper has unfortunately published with errors which are corrected by publishing this Correction article.

In the published paper the diffraction pattern for Fig. 1, the prominent diffraction peaks look similar from external observations where some of the peaks were dominated by the background noise. However, when further smoothing is applied, the main peaks comes out with their clear appearance as shown in Fig. 1 and with different FWHM as shown in Fig. 2. In the Origin 8.5 software, there are smoothing algorithms (Adjacent Averaging method, Savitzky-Golay method, Percentile Filter method and FFT Filter methods) which are basically used to remove the noise from the signals. These smoothing methods work differently depending on the nature of the signal and the noise contained in the signal. In our smoothing method, we have used the Adjacent Averaging method which is useful for wide smoothing and essentially takes average of a user-specified number of data points around each point in the data and replace that point with the new average value. In our case, we have used 50 window size (data points) with three iterations in each local regression.

- In the abstract, structure and conclusion part the term ‘crystallite size’ varies between “15.2 and 30.5 nm” has replaced by 14.5 to 30.2 nm.
- In the structural analysis and conclusion part, the 2θ values has replaced by 18.5° , 28.8° , 47.5° , 54.58° and 72.52° .
- Because of the change in position of the diffraction peaks the Miller indexes are also changed to [(200), (100), (402), (224) and (440)] as shown Fig. 1 where the prominent peaks is at (100).

Because of the change in crystallite size, Fig. 2 in the published paper is amended as in Fig. 2.

The excitation and emission graphs of the published paper (Figs. 5 and 6, respectively) have been replaced by Figs. 3 and 4, respectively, as shown. In the published paper, the excitation and emission graphs seem to have similar growth and it had noisy part especially in the excitation graphs (Fig. 5) but when we repeat the measurement and smooth the result both for the excitation and emission graphs, we have observed some difference as compared to the excitation and emission graphs of the published one as seen in Figs. 3 and 4. The emission peak has observed at 494 nm (not 495 nm in the published paper).

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Fig. 1 X-ray diffraction patterns of $\text{BaAl}_2\text{O}_4:\text{Eu}^{2+}, \text{Dy}^{3+}$ thin films grown at vacuum and different oxygen gas pressures

Fig. 3 Excitation spectra of $\text{BaAl}_2\text{O}_4:\text{Eu}^{2+}, \text{Dy}^{3+}$ thin film at the emission wavelength of 494 nm

Fig. 2 FWHM and crystallite size as a function of deposition gas pressures

Fig. 4 Emission spectra of $\text{BaAl}_2\text{O}_4:\text{Eu}^{2+}, \text{Dy}^{3+}$ thin film at an excitation of 341 nm

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