

Supplementary Materials: Influence of substrate temperatures and oxygen partial pressures on the crystal structure, morphology and luminescence properties of pulsed laser deposited $\text{Bi}_2\text{O}_3\text{:Ho}^{3+}$ thin films

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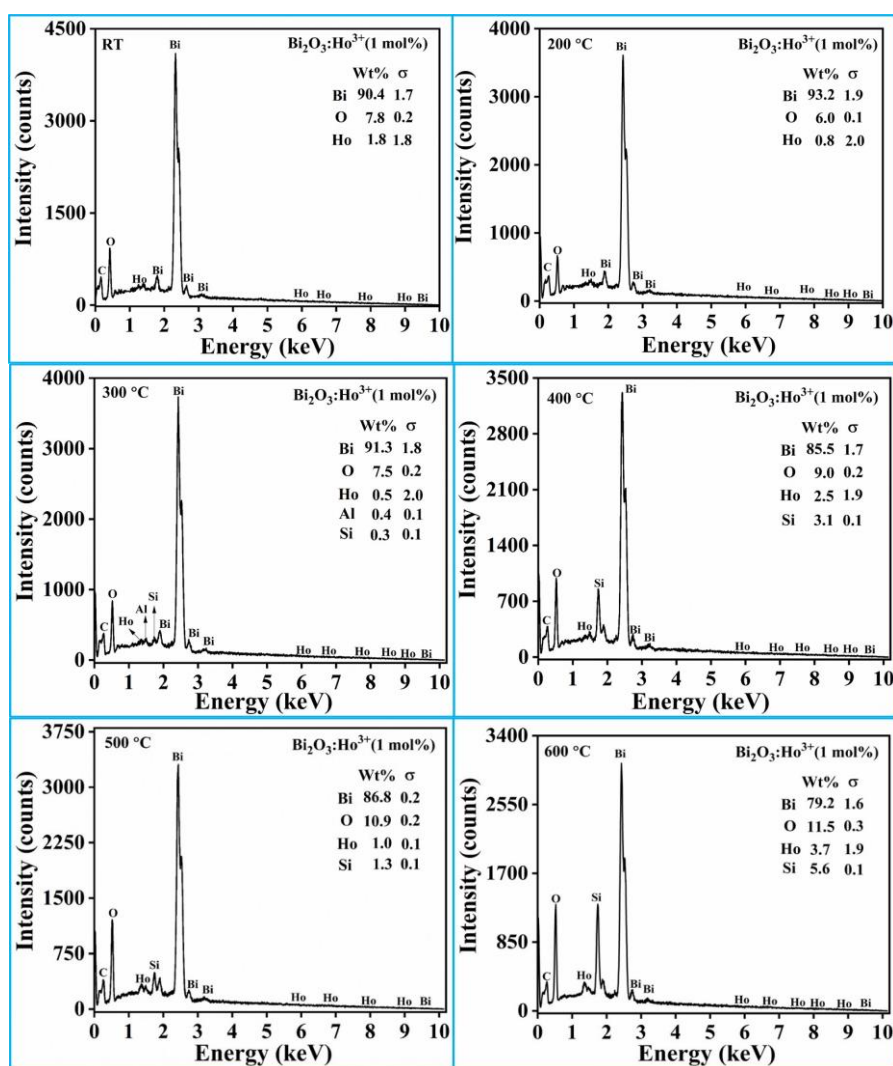


Figure S1. EDS of $\text{Bi}_2\text{O}_3\text{:Ho}^{3+}$ (1 mol.%) deposited at different substrate temperatures (RT–600 °C) in vacuum.

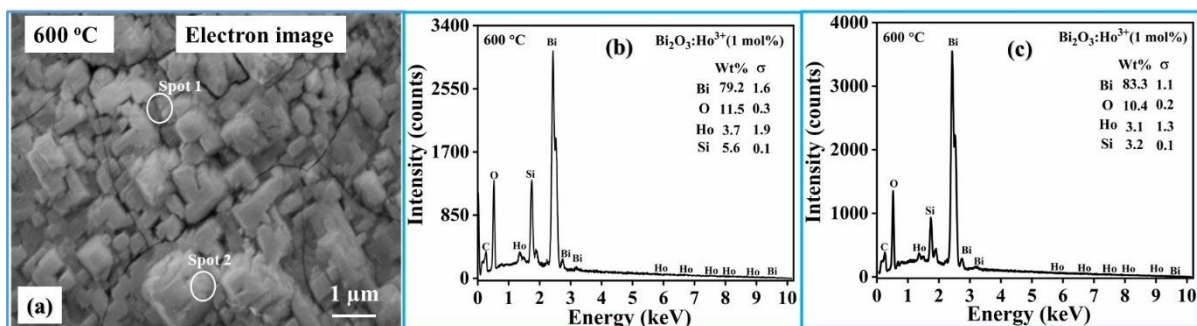


Figure S2. FESEM image (a) EDS taken at spot 1 (b) and spot 2 (c) of $\text{Bi}_2\text{O}_3:\text{Ho}^{3+}$ (1 mol.%) deposited at $T_s = 600^\circ\text{C}$.

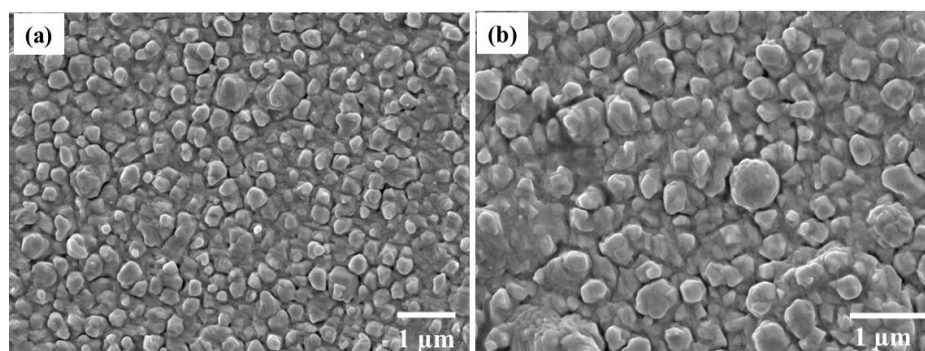


Figure S3. FESEM images of the sample deposited with O_2 partial pressure of 200 mT ($T_s = 400^\circ\text{C}$) with different magnifications as indicated by the scale bars in (a) and (b) of the $\text{Bi}_2\text{O}_3:\text{Ho}^{3+}$ thin film.

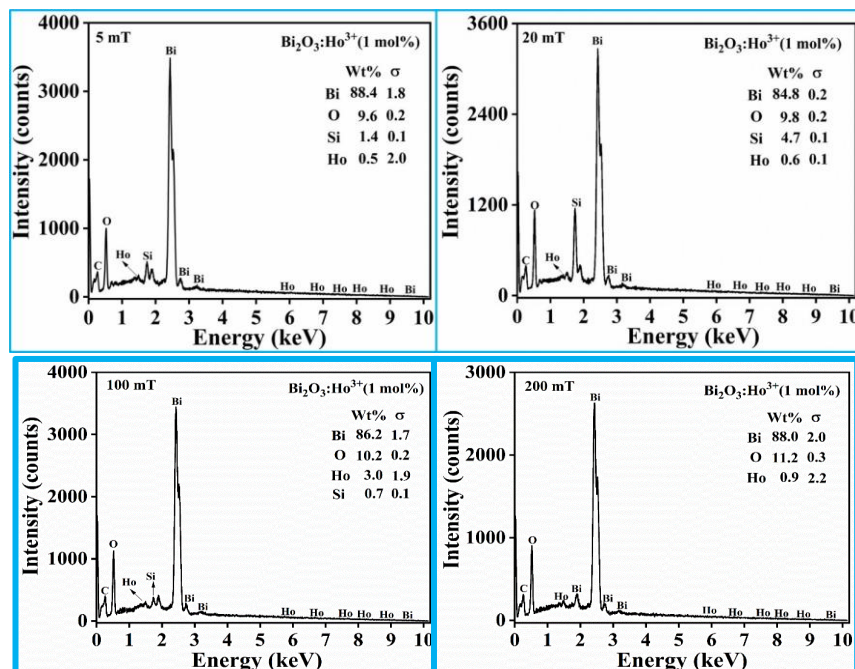


Figure S4. EDS of $\text{Bi}_2\text{O}_3:\text{Ho}^{3+}$ (1 mol.%) deposited at different O_2 partial pressure (5–200 mT) with $T_s = 400^\circ\text{C}$.



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