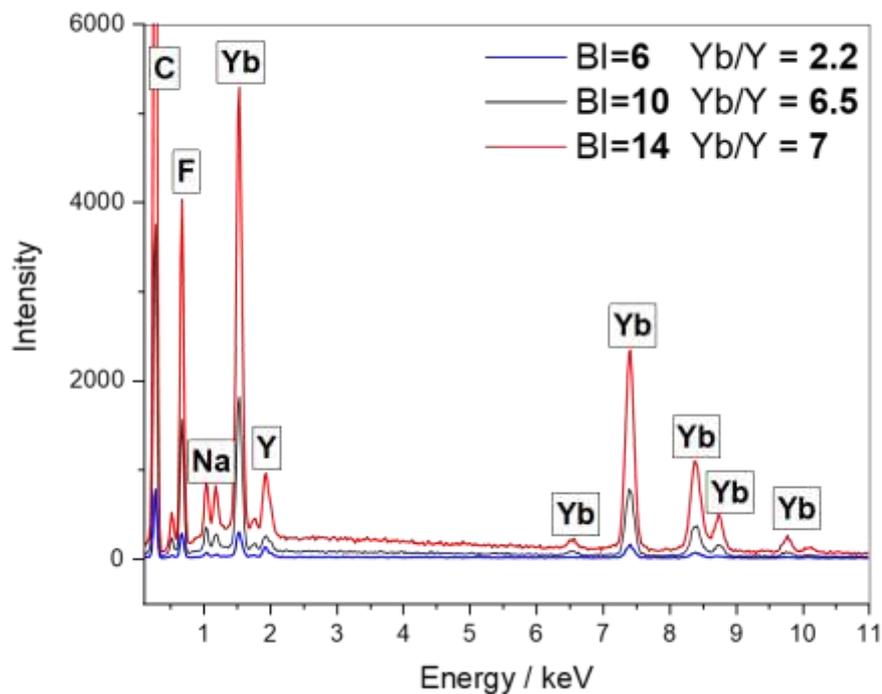


## Supplementary Information



**Figure S1.** EDX analysis of the  $\text{NaYb}_{0.99}\text{F}_4:\text{Tm}_{0.01}@ \text{NaYF}_4$  sample with different beam intensities (BI). The  $\text{Yb}^{3+}/\text{Y}^{3+}$  ions ratio is significantly increasing with the penetration depth, what indicates higher content of  $\text{Y}^{3+}$  ions at the surface of studied material.