

Supplementary Material

Upconversion luminescence response of a single YVO₄:Yb, Er particle

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Element	Weigth %	Atomic %
C K	3.04	5.87
O K	38.73	56.17
F K	7.14	8.72
Na K	0.69	0.70
Si K	28.21	23.31
Ni K	8.58	3.39
Er M	3.60	0.50
Yb M	10.01	1.34
Sum	100.00	

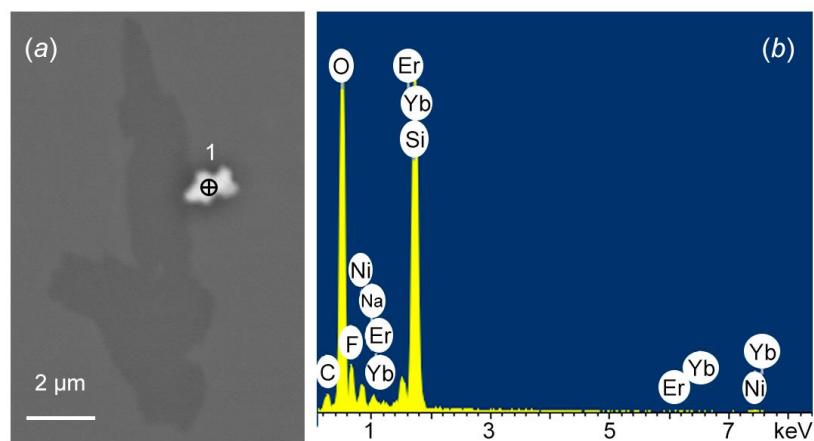


Fig. S1. SEM image (a) and EDS spectrum (b) of the YVO₄:Yb, Er SP.

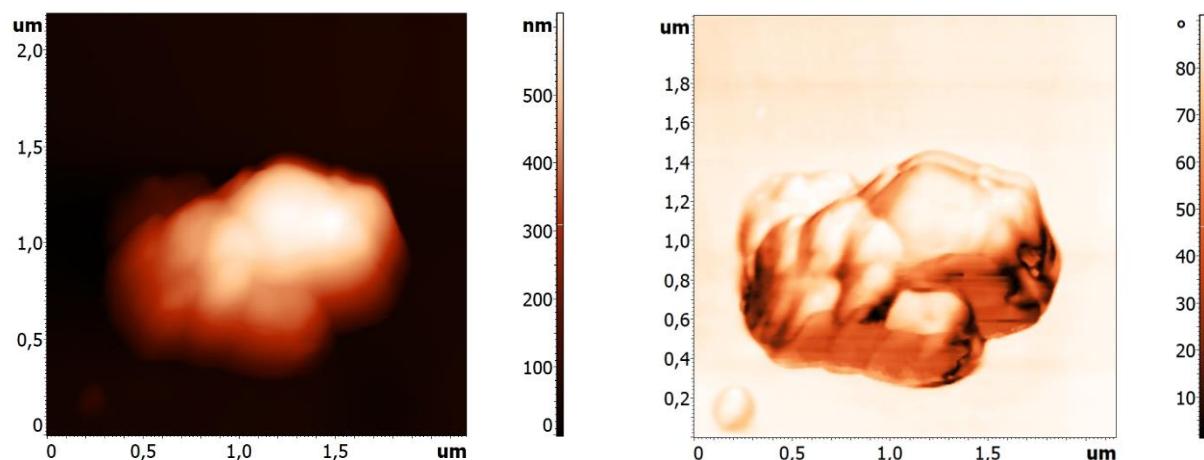


Fig. S2. AFM image (left) and phase-contrast image (right) of the YVO₄:Yb, Er SP.

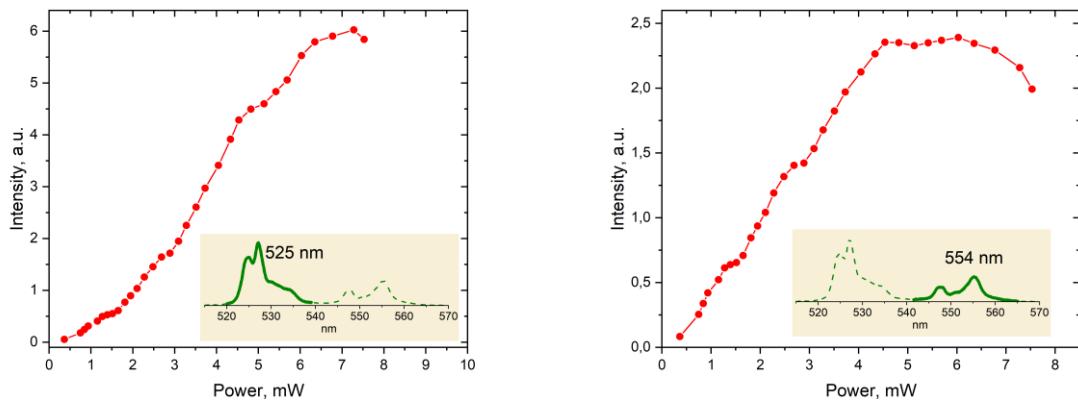


Fig. S3. Dependences of the integral intensities of Er³⁺ luminescence in the 520-540 nm (left panel) and 540-565 nm (right panel) ranges on the laser power for YVO₄: Yb, Er SP. Despite the Fig. 7, plots are presented in linear-linear format.