Electronic Supplementary Material (ESI) for Nanoscale.

Supporting Information

Remarkable enhancement of upconversion luminescence on 2-D anodic aluminum oxidephotonic crystals

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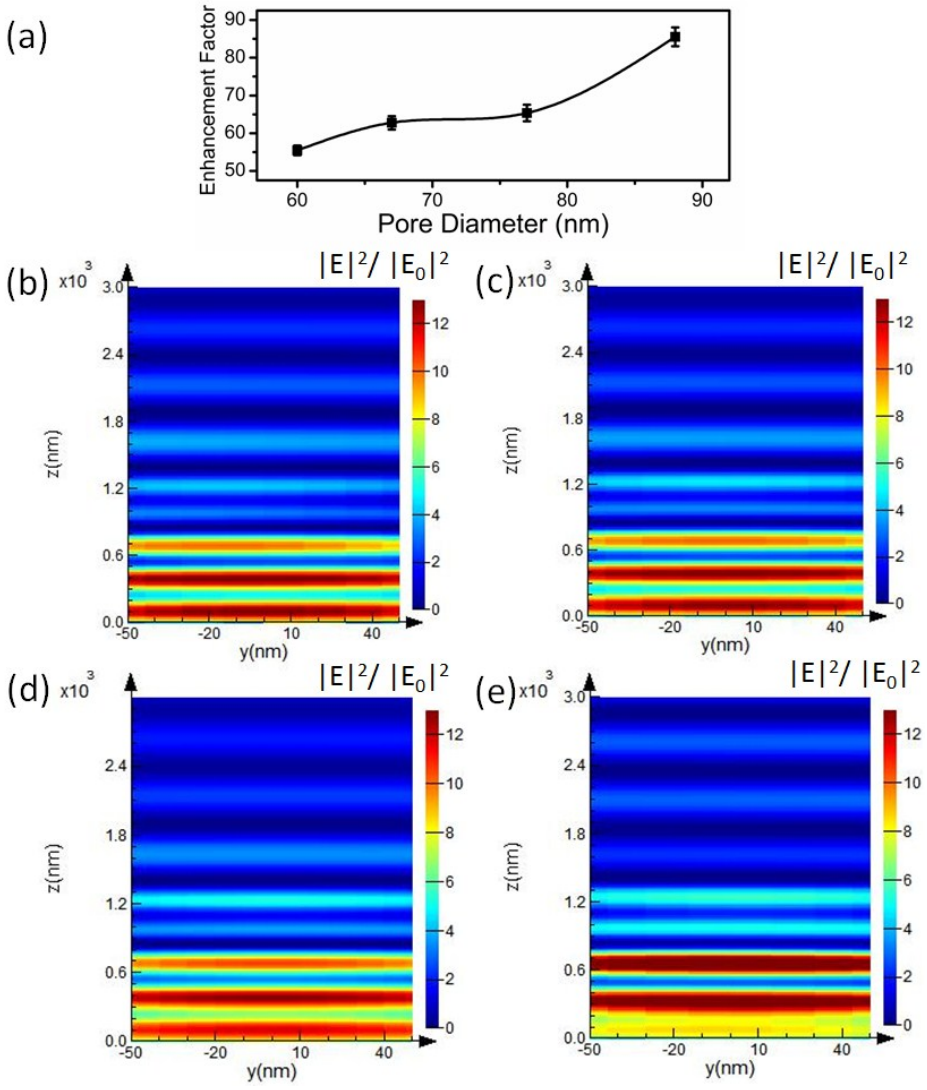

Fig.SI.1 (a) The UCL EF versus pore diameter (the constant thickness: 400±10nm) of the AAOs (the average diameter of $NaYF_4$: 54nm). Simulated electromagnetic field distribution of $NaYF_4$:Yb, Er/AAO/Al which the AAO's pore diameter is 60nm (b), 67nm (c), 77nm (d), 88nm (e) by the FDTD method.

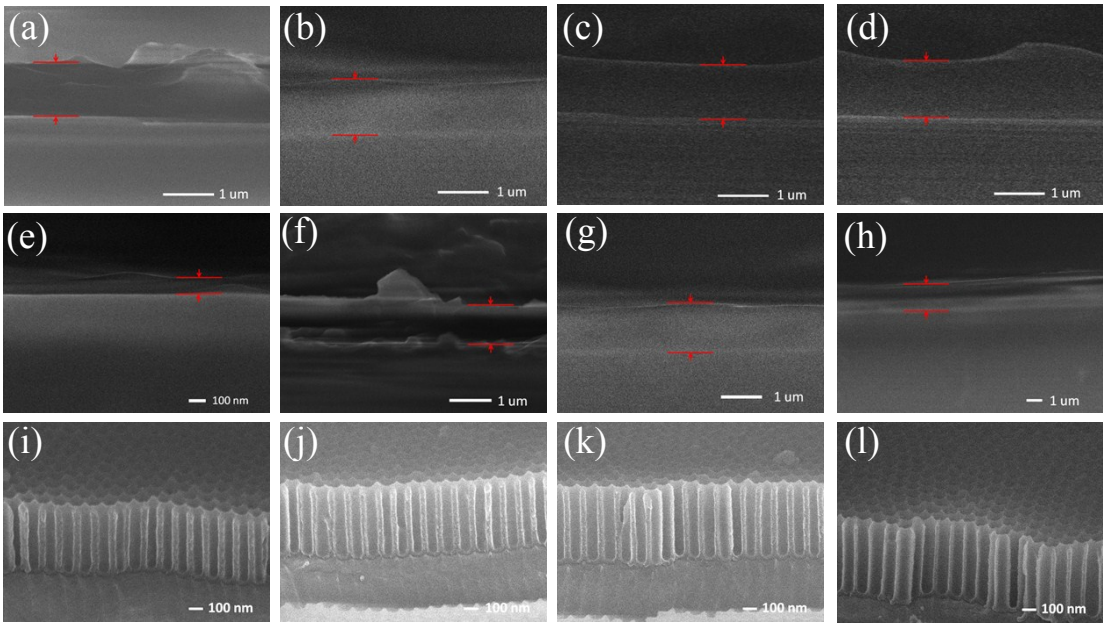

Fig.SI.2 (a-d) The cross-section SEM images of $NaYF_4$:Yb^{3+}, Er^{3+} films (the samples in Fig.3 (a)) with same film thickness (1.3µm) fabricated by different sizes of $NaYF_4$. 12nm (a), 35nm (b), 54 nm (c) and 60nm (d). (e-f) The cross-section SEM images of $NaYF_4$:Yb^{3+}, Er^{3+} films (the samples in Fig.3 (b)) fabricated by same size of $NaYF_4$ (54 nm) with different film thickness 98nm (e), 957nm (f), 1332nm (g), 1644nm (h). (i-l) The cross-section SEM images of AAO films fabricated with different AAO diameters (the samples in Fig.SI.1). 60nm (i), 67nm (j), 77nm (k), 88nm (l).