Supporting Information for

Synthesis of Free- standing Sub-10nm Y$_2$O$_3$:Eu Particles on Silica Nanowire Matrix and Amplified Luminescent Performance

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Figure S1. TEM images (left) and corresponding magnified TEM images (right) of $Y_2O_3$:Eu synthesized without PEI@SiO$_2$ as matrix
Figure S2. TEM images (left) and corresponding magnified TEM images (right) of Y$_2$O$_3$:Tb@SNW (the synthesis conditions were similar to that of Y$_2$O$_3$:Eu@SNW by replacing Eu(OAc)$_3$ with Tb(OAc)$_3$)
Figure S3. Emission spectra of (excited by 270nm) $Y_2O_3$:Tb@SNW (black line) and BA/ $Y_2O_3$:Tb@SNW (green line).

Figure S4. Snapshot images of the lined powders of BA/$Y_2O_3$:Eu@SNW (left) and BA/$Y_2O_3$:Tb@SNW (right) irradiated by UV light (254nm).