Supporting Information

Shape Controllable Synthesis and Upconversion Properties of Lutetium Fluoride (Doped with Yb$^{3+}$ / Er$^{3+}$) Microcrystals by Hydrothermal Process

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Figure S1 XRD patterns of the as-prepared products using NH$_4$F as F$^{-}$ source and EDTA as organic additive at different pH values of (a) 3; (b) 7; (c) 10 as well as the standard data of NH$_4$Lu$_2$F$_7$ (JCPDS 43-0846) and β-NaLuF$_4$ (JCPDS 27-0726).
Figure S2 A scheme showing the energy-level and up-conversion luminescence process for Yb$^{3+}$/Er$^{3+}$ codoped β-NaLuF$_4$ sample. The full, dotted arrows, and curly lines represent emission, energy transfer, and multiphonon relaxation processes, respectively.