Supplementary Information

Biomimetic synthesis of aluminophosphate nanorolls induced by mixed organoamines

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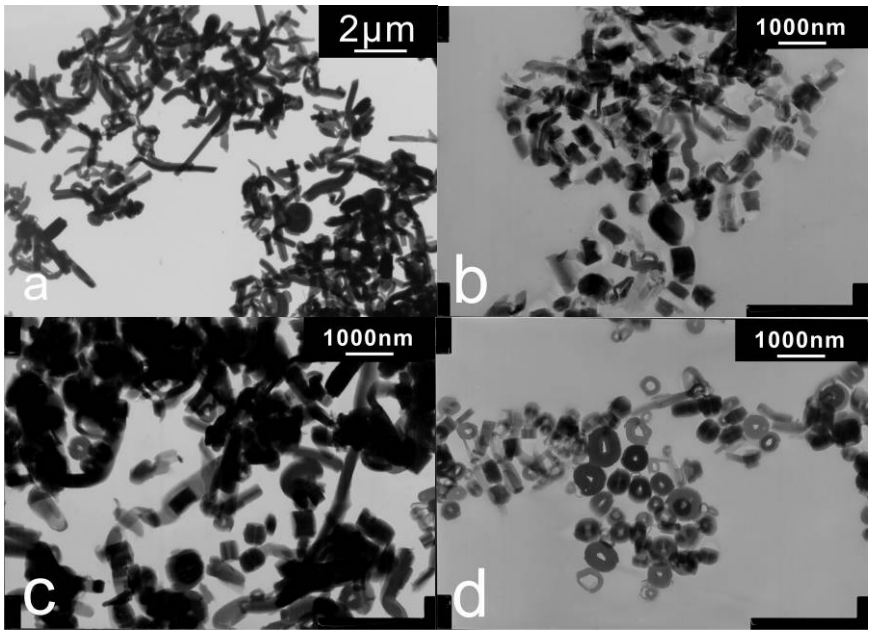

Fig. S1 TEM images of the resultant samples hydrothermally treated at 383 K for 6 days with the precursors obtained under various adding rates of mixed organoamines (~10.8/1.0 of $C_{12}H_{25}NH_2/C_{16}H_{33}NH_2$): (a) immediately; (b) 4 ml/min; (c) 1 ml/min; and (d) 0.1 ml/min.

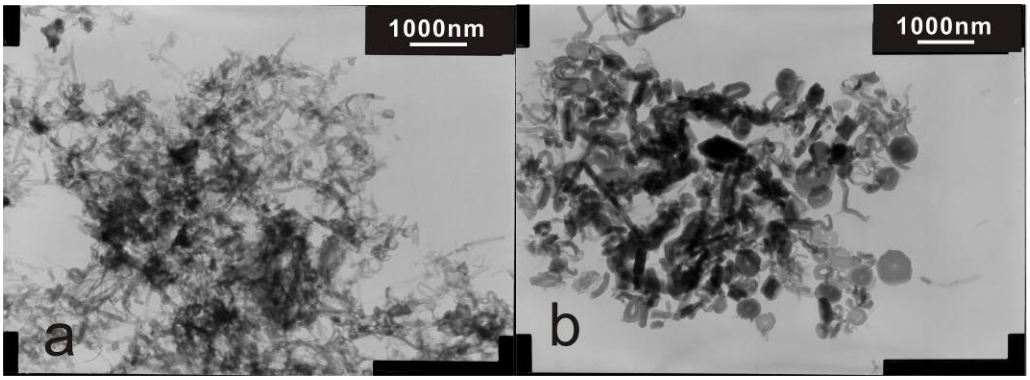

Fig. S2 TEM images of the samples hydrothermally treated at 383 K for 6 days with the precursors using mixed organoamines in different molar ratios of $C_{12}H_{25}NH_2/C_{16}H_{33}NH_2$: (a) 12/1 and (b) 10/1.

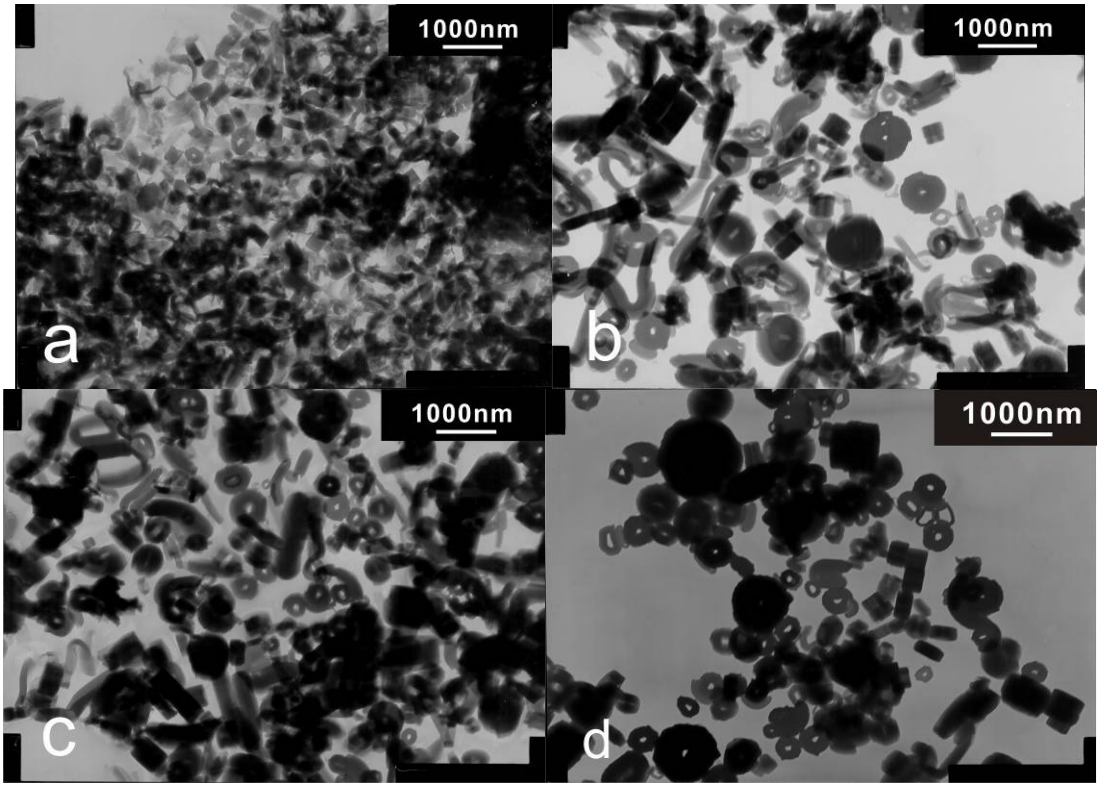

Fig. S3 TEM images of the samples hydrothermally treated at 383 K for 6 days using mixed organoamines (~10.8/1.0 of $C_{12}H_{25}NH_2/C_{16}H_{33}NH_2$) with the precursors obtained at: (a) 353 K; (b) 343 K; (c) 333 K and (d) 323 K.

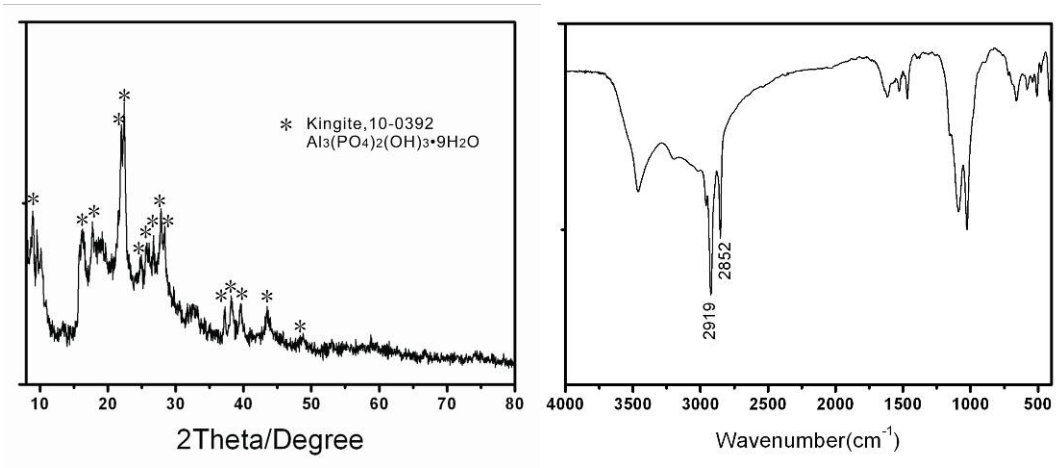

Fig. S4 The left shows the XRD pattern of the precursor obtained after the mixed organoamine (~10.8/1.0 of $C_{12}H_{25}NH_2/C_{16}H_{33}NH_2$) adding at 323 K but before hydrothermal treatment. The right shows the IR spectra of the sample after hydrothermal treatment of 6 days. The strong signals at 2850 and 2920 cm^{-1} correspond to the CH_2 groups of organoamines.

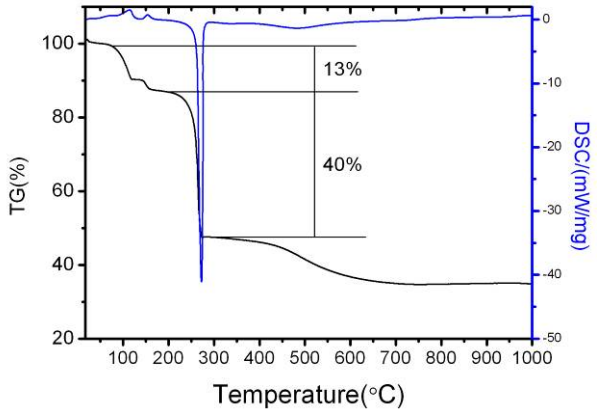

Fig. S5 TG/DSC curves of the nanorolls synthesized at 383 K for 6 days with mixed organoamines (~10.8/1.0 of $C_{12}H_{25}NH_2/C_{16}H_{33}NH_2$).

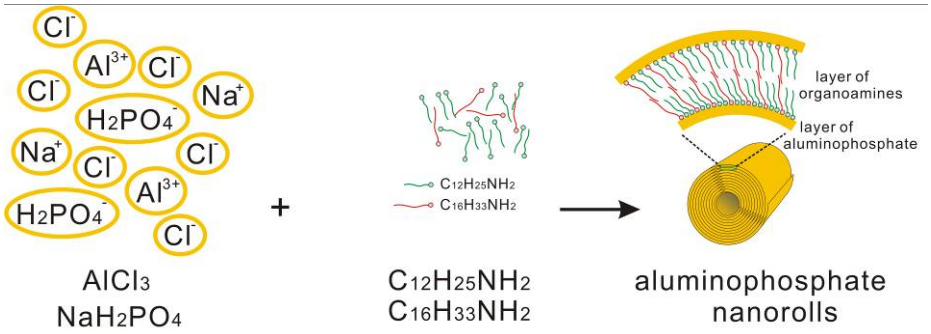

Fig. S6 The chemical structure of organoamines / reaction scheme.