Electronic Supplementary Material (ESI) for CrystEngComm.
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Electronic Supplementary Information for:

Hierarchical $Ba_2(B_5O_9)Cl\cdot(H_2O)_{0.5}$ microspheres: surfactant-assisted facile hydrothermal synthesis, Tb^{3+} doping and photoluminescent properties

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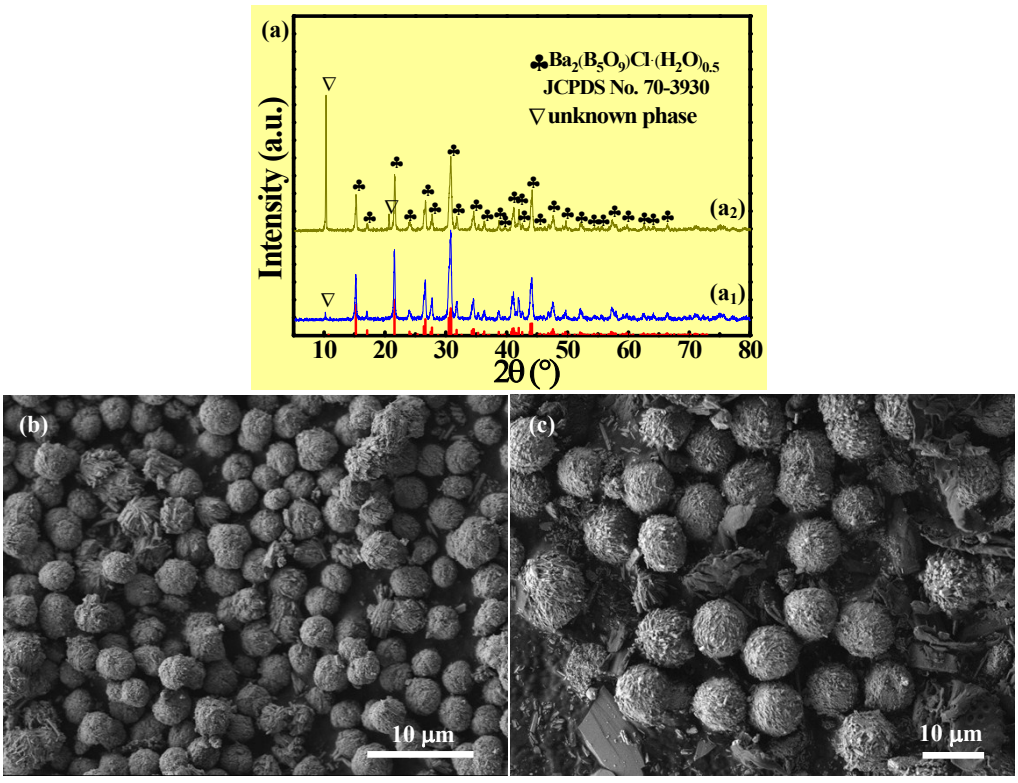

Fig. S1. XRD patterns (a) and SEM images (b-c) of the $Ba_2(B_5O_9)Cl\cdot(H_2O)_{0.5}$ microspheres obtained at 160 ºC for different time with the molar ratio of Ba:B:OH as 1:2:1 and initial reactant concentration of $BaCl_2$ as 0.313 mol L^{-1}. Time (h): (a_1, b)-12.0, (a_2, c)-18.0.

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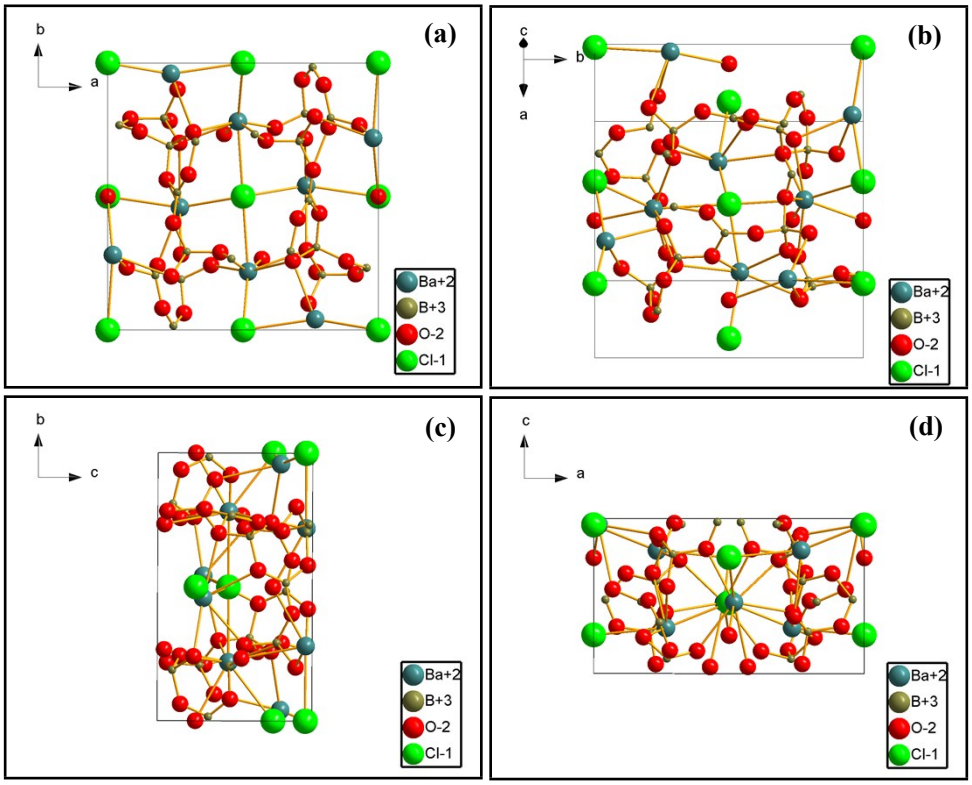

Fig. S2. Orthorhombic structure model of $Ba_2(B_5O_9)Cl{\cdot}(H_2O)_{0.5}$ (JCPDS No. 70-3930, a = 11.716 Å, b = 11.574 Å, c = 6.7 Å, α = 90º, β = 90º, γ = 90º and space group of Pnn2(34)) viewed from different directions. Directions: (a)-[001], (b)-[101], (c)-[100], (d)-[010].

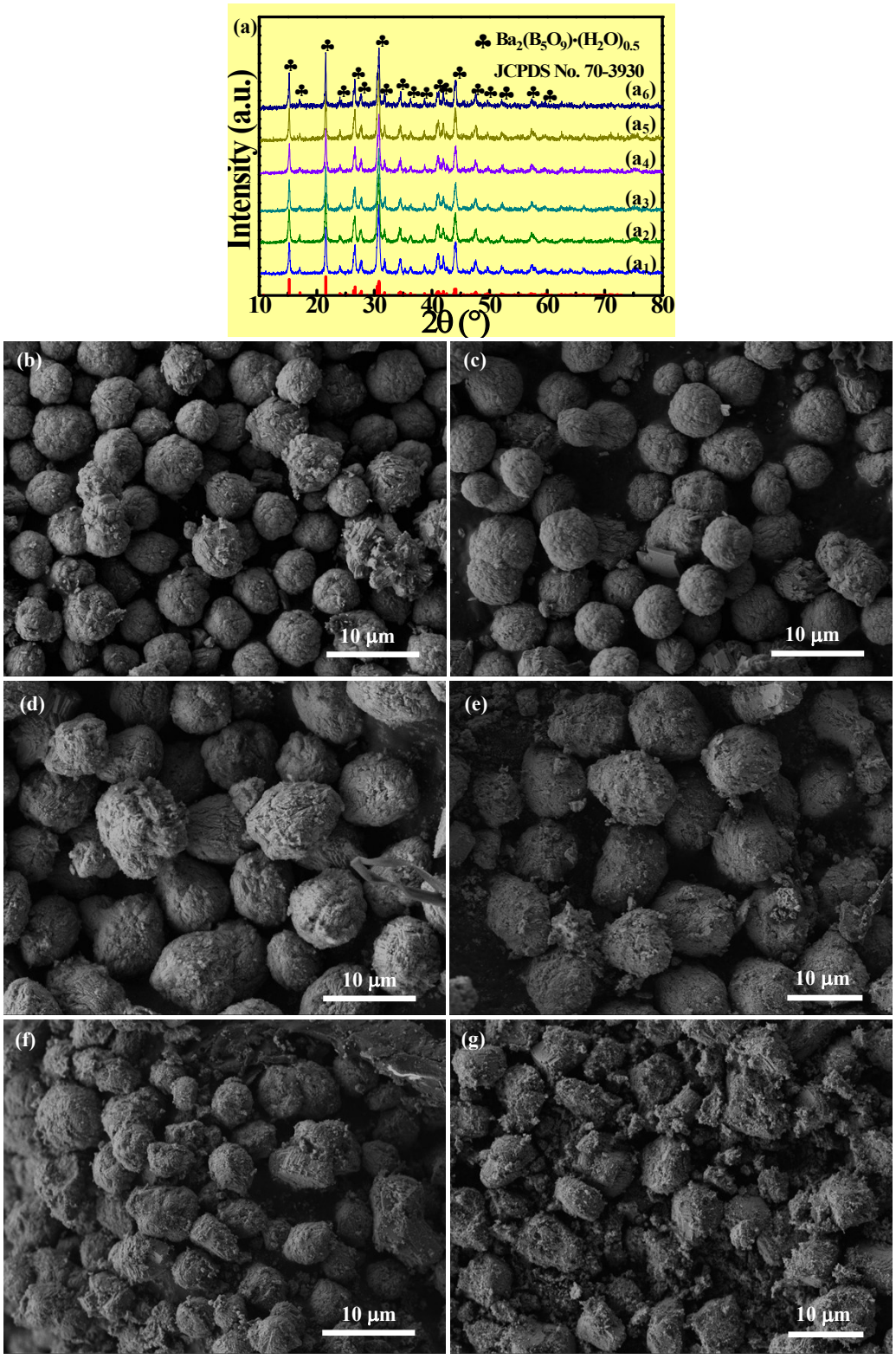

Fig. S3. XRD patterns (a) and SEM images (b-g) of the hydrothermal products obtained at 160 ºC for 6.0 h in the presence of EDTA-2Na as 8.395 mmol L^{-1}, with the molar ratio of Ba:B:OH as 1:2:1 and reactant concentration of $BaCl_2$ as 0.313 mol L^{-1}, whereas with different doping molar percentage of Tb^{3+} in Ba^{2+} ions. Doping molar percentage (%): (a_1, b)-1, (a_2, c)-2 (a_3, d)-4, (a_4, e)-6, (a_5, f)-8, (a_6, g)-10.

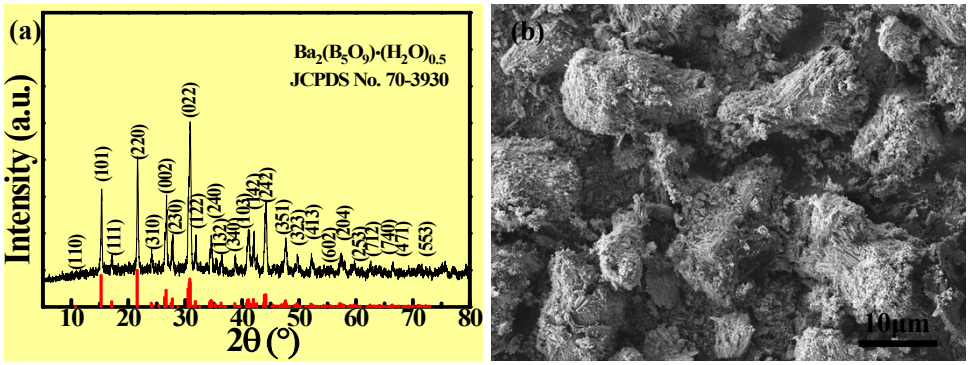

Fig. S4. XRD pattern (a) and SEM image (b) of the hydrothermal product obtained at 160 ºC for 6.0 h in the absence of EDTA-2Na, with the molar ratio of Ba:B:OH as 1:2:1, reactant concentration of $BaCl_2$ as 0.313 mol L^{-1}, and doping molar percentage of Tb^{3+} in Ba^{2+} ions as 6%.

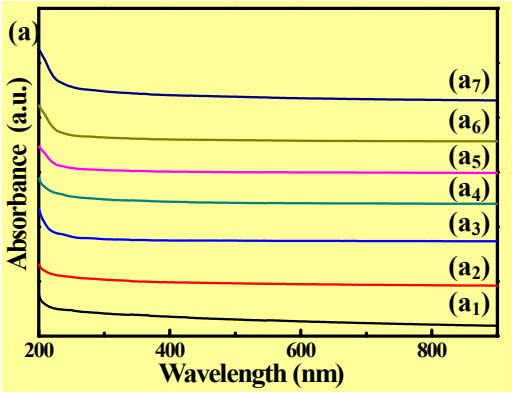

Fig. S5. UV-vis spectra of the Tb^{3+} doped $Ba_2(B_5O_9)Cl{\cdot}(H_2O)_{0.5}$ microspheres with different doping percentage of Tb^{3+} in Ba^{2+} ions. Doping molar percentage (%): (a_1, b)-0, (a_2, c)-1, (a_3, d)-2, (a_4, e)-4, (a_5, f)-6, (a_6, g)-8, (a_7, h)-10.