CHEMISTRY
A EUROPEAN JOURNAL

Supporting Information

Luminescence Responsive Charge Transfer Intercluster Crystals

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chem_201202115_sm_miscellaneous_information.pdf

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I. Physical measurements

The C, H, N microanalyses were carried out with a CE instruments EA 1110 elemental analyzer. The FT-IR spectra were recorded from KBr pellets in the range 4000-400 cm^{-1} with a Nicolet AVATAR FT-IR330 spectrometer. Luminescence were measured on a Hitachi F-7000 spectrometer. Lifetime was measured on Horiba Jobin Yvon Fluoromax-4P-Tcspc spectrometer. UV-vis diffuse reflectance spectra were recorded on a Varian Cary5000 UV-VIS-NIR Spectrophotometer with $BaSO_4$ as the reference. X-ray powder diffractometry study of the complex was performed on a Panalytical X-Pert pro diffractometer with Cu Kα radiation.

X-ray experimental

Intensity data of compounds **1** and **2** were collected on an Oxford Gemini S Ultra system (Mo Kα). Absorption corrections were applied by using the program CrysAlis (multi-scan). The structures were solved by direct methods, and non-hydrogen atoms except solvent molecules and counteranions were refined anisotropically by least-squares on F^2 using the SHELXTL program. The hydrogen atoms of *tert*-butyl groups were generated geometrically, while no attempt was made to locate H atoms of H_2O molecules.

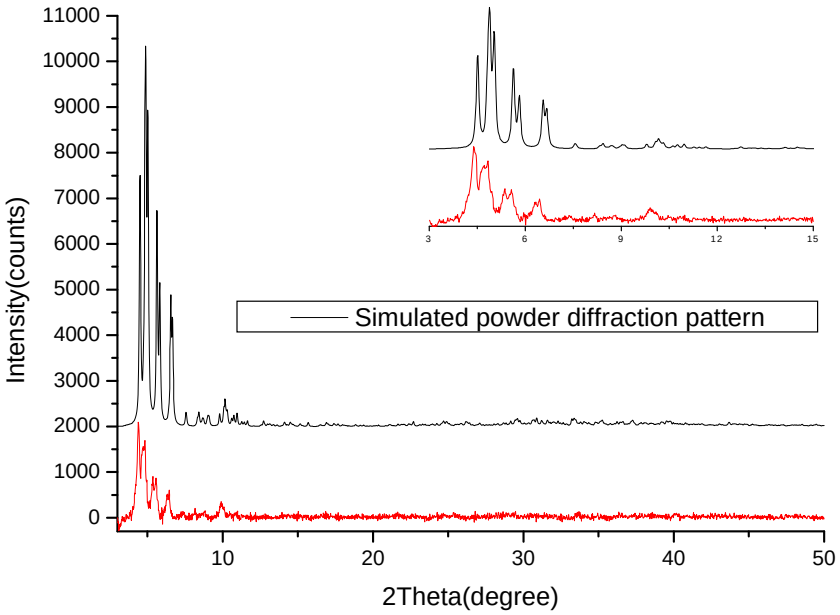

Figure S1. X-ray powder diffraction pattern of **2**

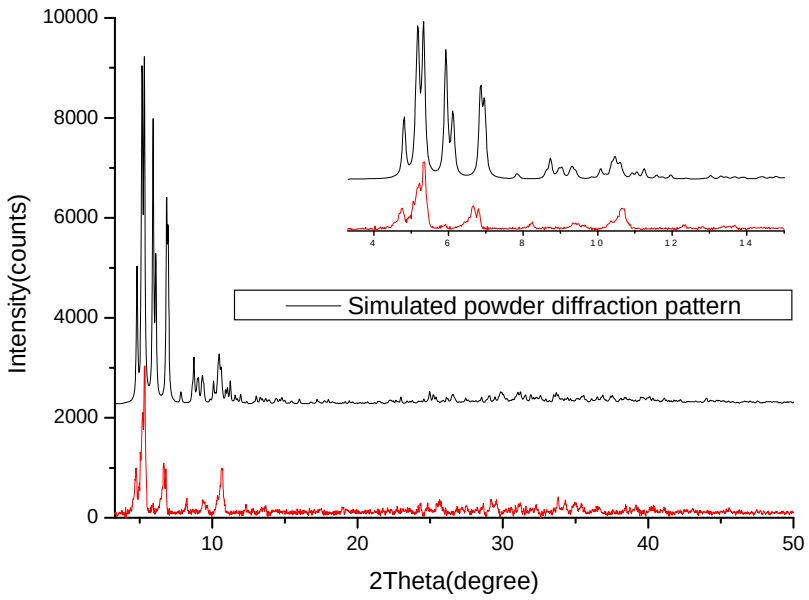

Figure S2. X-ray powder diffraction pattern of **3**

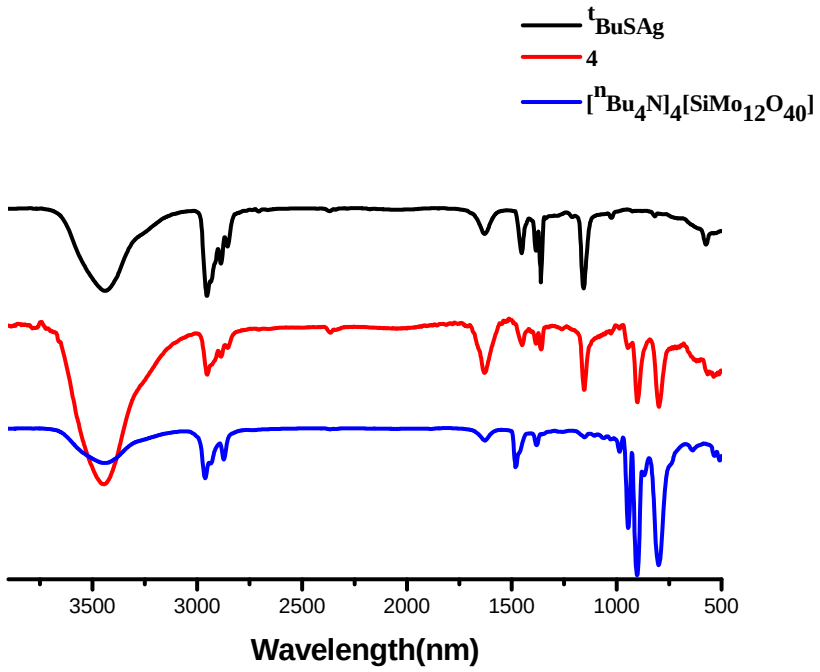

Figure S3. IR Specture of **4**

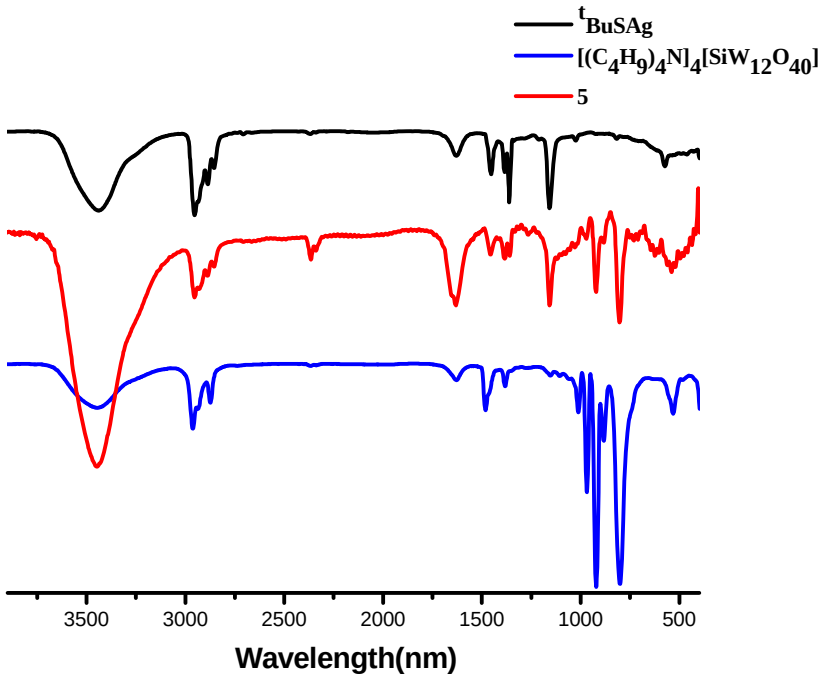

Figure S4. IR Specture of **5**

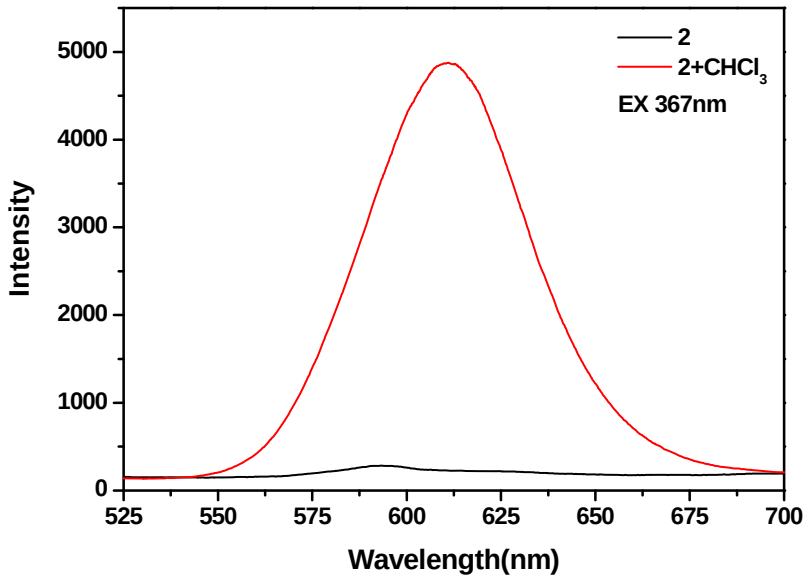

Figure S3. Emission spectra of **2** and **2** with $CHCl_3$ in the solid state. Excitation at 367 nm.

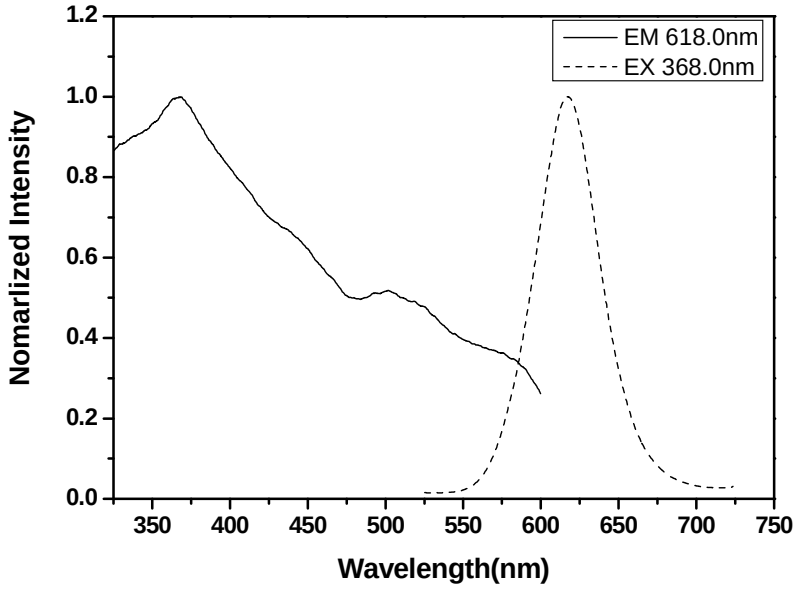

Figure S4. Excitation and emission spectra of **3** in the solid state

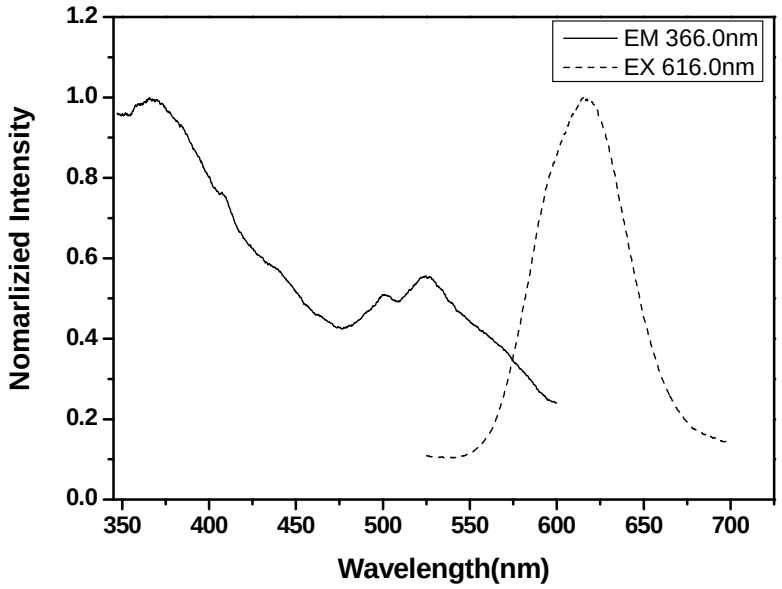

Figure S7. Excitation and emission spectra of **5** in the solid state