Electronic Supplementary Information (ESI)

## Inorganic anion induced supramolecular architectures of flexible unsymmetrical bis(pyridyl) ionic salts mediated by various noncovalent interactions

Zhu-Yan Zhang, Zhao-Peng Deng, Li-Hua Huo, Hui Zhao and Shan Gao



Salt 1 (Type I)



Salt 2 (Type II)



Salt 3 (Type I)



Salt 4 (Type I)

Salt 7 (Type I)







Salt 6 (Type I)



Salt 9 (Type I)



Salt 10 (Type III)Salt 11 (Type V)Salt 12 (Type VI)Fig. S1 3-D supramolecular architectures of salts 1-12 in space-filling modes.

Salt 8 (Type IV)



Fig. S2 UV spectra of M1-M3 and salts 1-12 in aqueous solution.

## Powder X-ray diffraction (PXRD)

Powder X-ray diffraction (PXRD) patterns for solid samples of salts **1-12** are measured at room temperature as illustrated in Fig. S3. The patterns are highly similar to their simulated ones (based on the single-crystal X-ray diffraction data), indicating that the single-crystal structures are really representative of the bulk of the corresponding samples.

## Thermogravimetric analysis (TGA)

The thermal stability of the twelve salts were analyzed on crystalline samples by thermogravimetric analyses (TGA) from room temperature to 600 °C at a rate of 10 °C min<sup>-1</sup> under pure atmosphere. As shown in Fig. S4, the thermal stability of the hexafluorophosphates is similar to that of the chlorates, which is lower than the thermal stability of the perchlorates but higher than the corresponding nitrates. The sharp weigh loss of the twelve salts is falling in the range of 162-320 °C, 160-322 °C, 157-364 °C, 143-258 °C, 130-205 °C, 122-147 °C, 223-348 °C, 227-342 °C, 208-344 °C, 162-280 °C, 156-311 °C, and 160-315 °C, respectively.



Fig. S3 PXRD patterns for salts 1-12.



Fig. S4 TG curves of salts 1-12 at pure atmosphere.