

**Supporting Information for**

**An 1D Coordination Polymer Based on Novel Radical Anion**

**Ligand Generated In Situ: Notable Magnetic and Luminescence**

**Properties**

Guo-Ping Yong,\* Shu Qiao, and Zhi-Yong Wang\*

*Department of Chemistry, University of Science and Technology of China, Hefei 230026, China.*

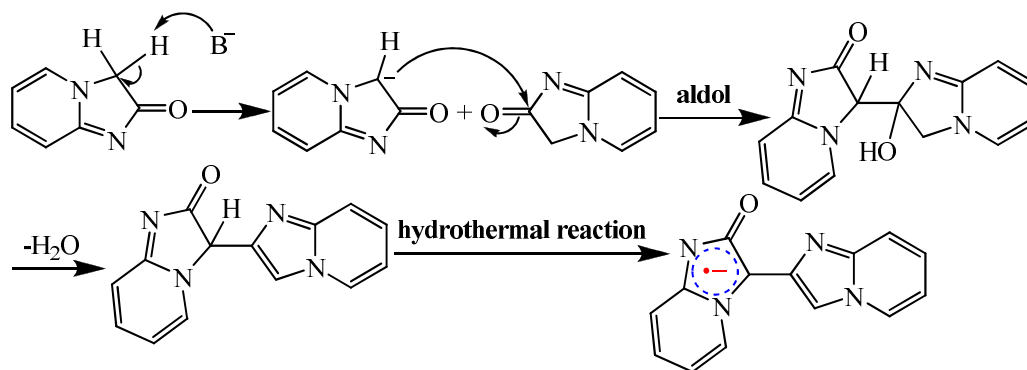
**\*Corresponding Author: Guo-Ping Yong**

**Telephone number: (86)-551-3600924**

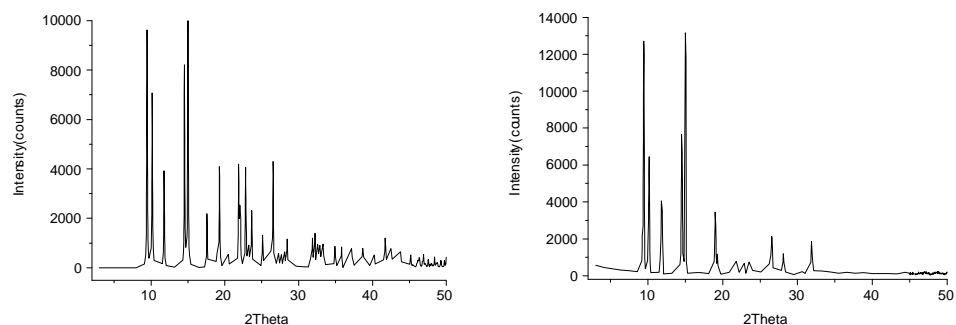
**E-mail address: [gpyong@ustc.edu.cn](mailto:gpyong@ustc.edu.cn)**

**Physical measurements**

Elemental analysis (C, H, and N) was performed using a Vario EL III elemental analyzer. Infrared spectrum was obtained with a Bruker VECTOR-22 FT-IR spectrophotometer with KBr discs. The emission spectrum for the solid sample was recorded at room temperature on a Hitachi 850 fluorescence spectrophotometer. X-ray powder diffraction (XRPD) pattern was obtained on a MXPAHF rotation anode X-ray diffractometer. Thermalgravimetric analysis (TGA) was performed under N<sub>2</sub> with a heating rate of 10°C min<sup>-1</sup> using a Shimadzu TGA-50H TG analyzer. The magnetic susceptibility  $\chi_M T$  (4–300K) at 1kOe on polycrystalline powder sample was measured with a Quantum Design SQUID magnetometer. The ESR spectrum was recorded on a JES-FA 200 ESR spectrometer at X-band.

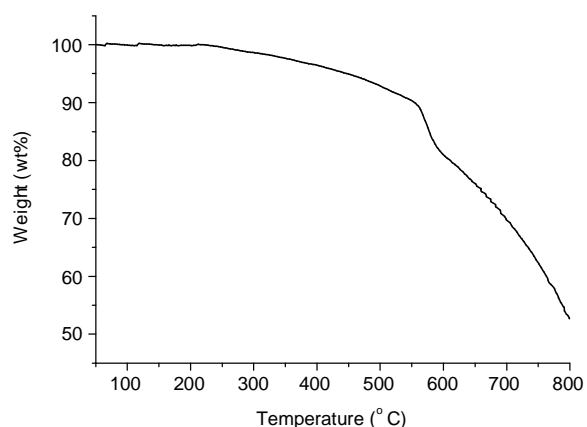


**Scheme S1.** The formation mechanism of radical anion of 2,3'-biimidazo[1,2-*a*]pyridin-2'(3'*H*)-one.

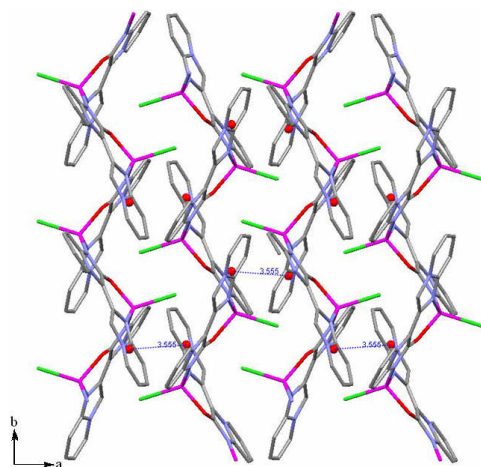


**Figure S1.** Calculated (left) and observed (right) XRPD patterns for compound **1**.

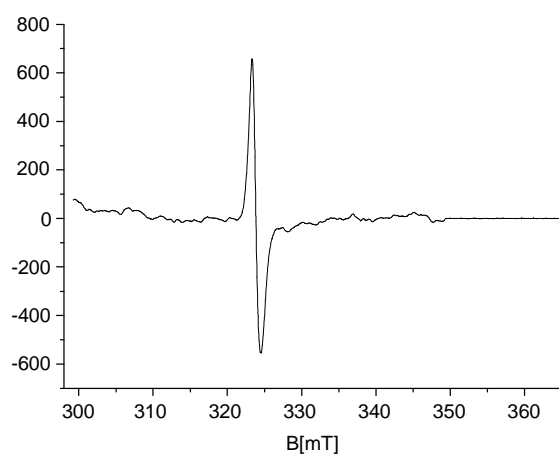
**Thermogravimetric analysis (TGA):** Thermogravimetric analysis (TGA) was performed in N<sub>2</sub> for **1** at a heating rate of 10 °C min<sup>-1</sup> on polycrystalline sample. The TG curve of **1** displays that the slow weight loss starts at *ca.* 250 °C and then obvious weight loss starts at *ca.* 550 °C. The calculated weight loss (10.13 %) is very consistent with the determined weight loss (10.08 %) which corresponds to the loss of one coordinated chlorine atom, as shown in Figure S2.



**Figure S2.** TGA curve of compound **1**.



**Figure S3.** 2D supramolecular array viewed along the *c*-axis in compound **1**.



**Figure S4.** ESR spectrum for compound **1** at room temperature.