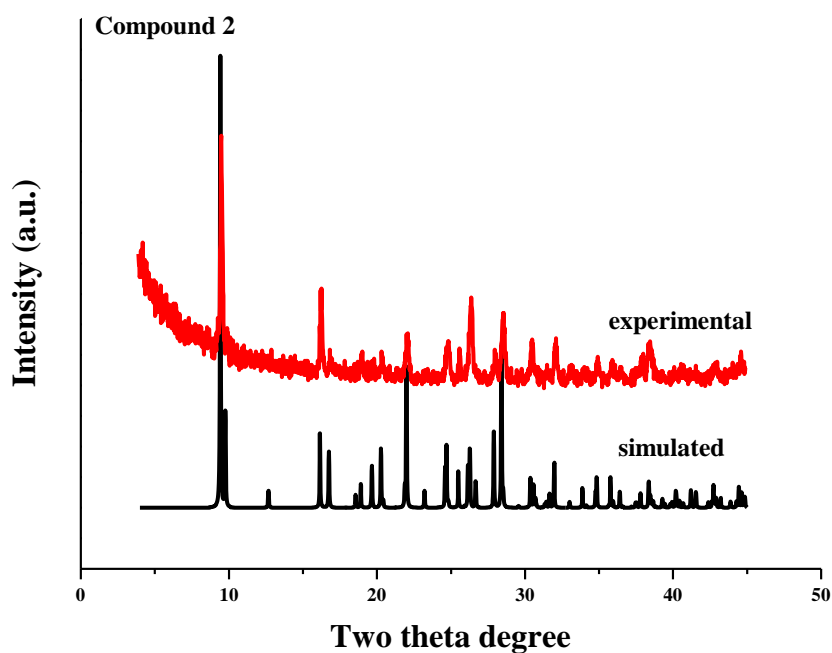
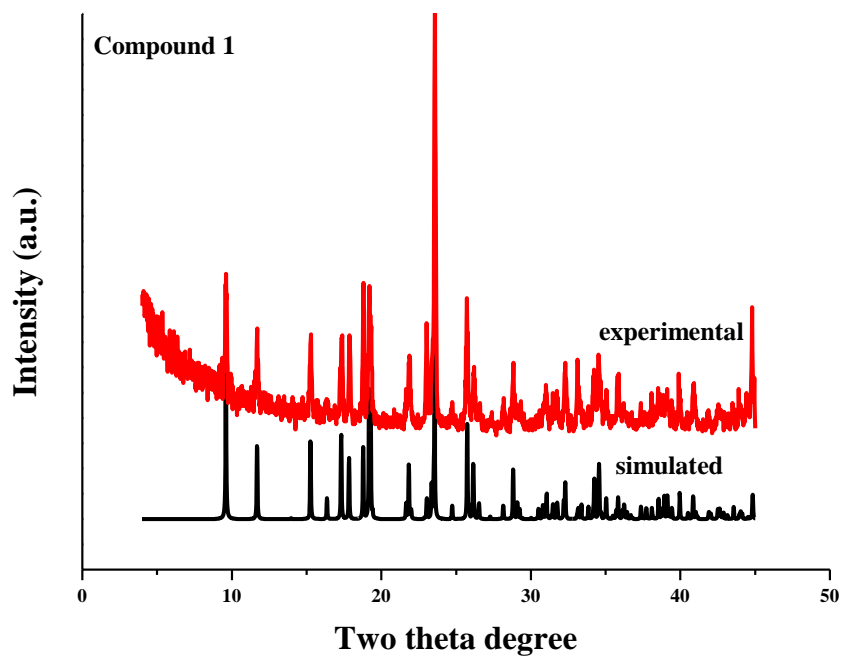
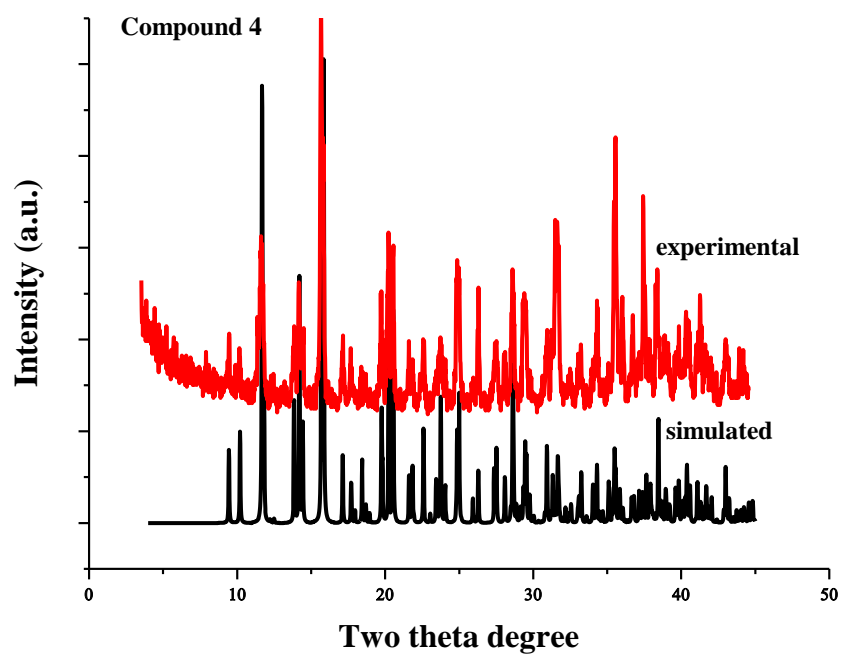
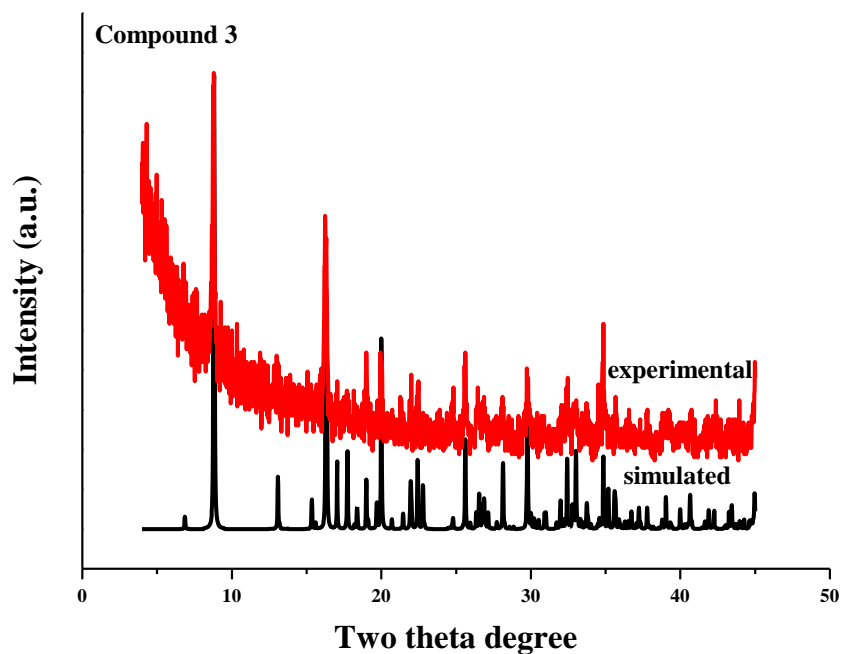


Supporting materials





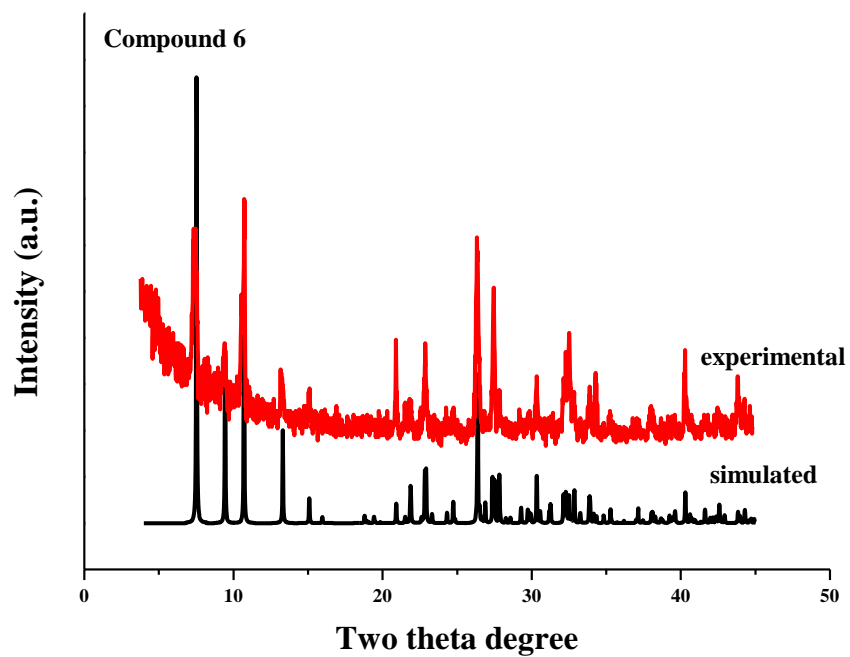
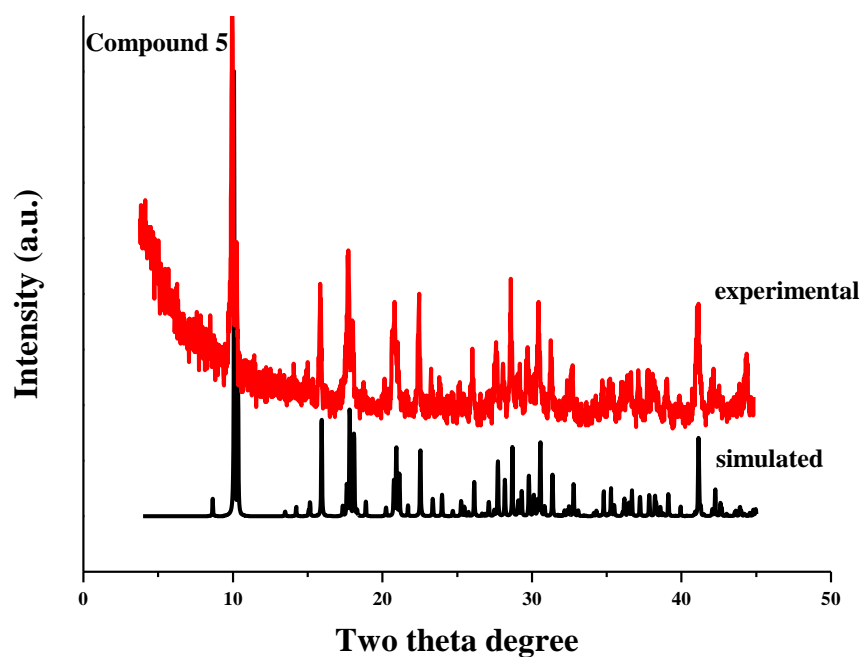
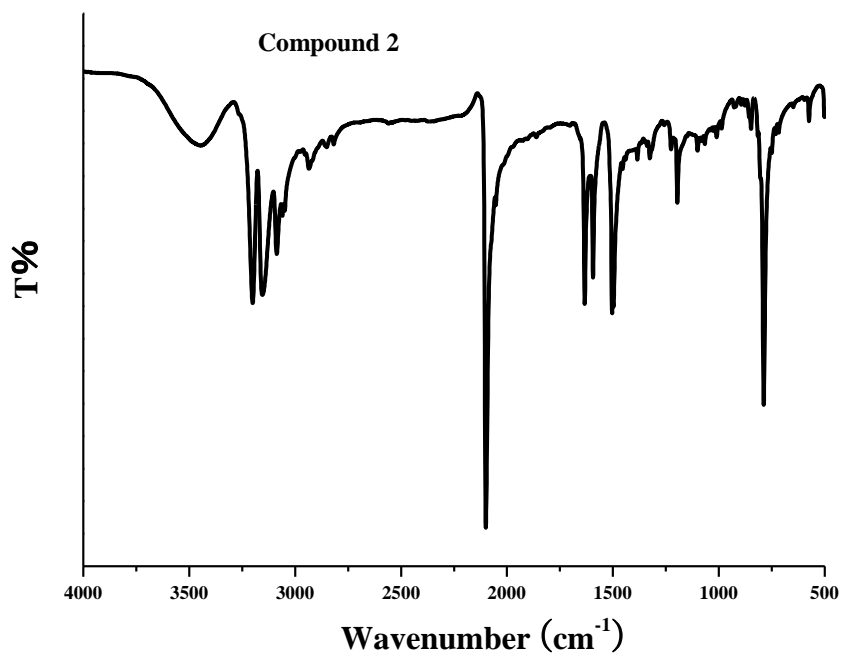
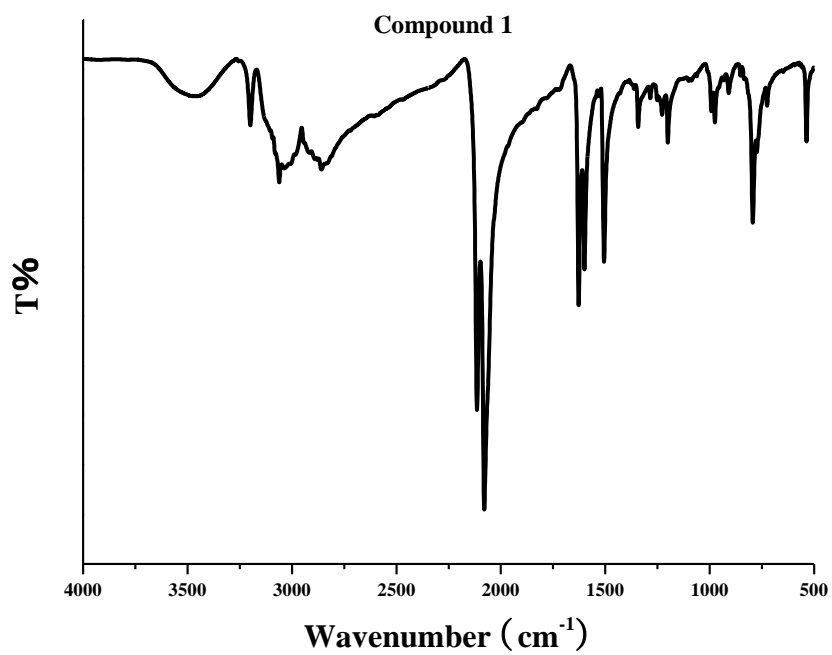
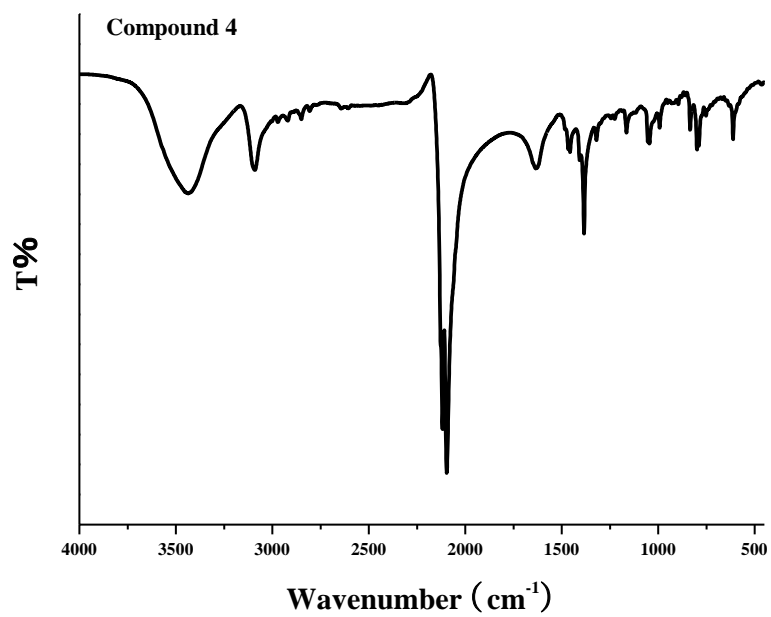
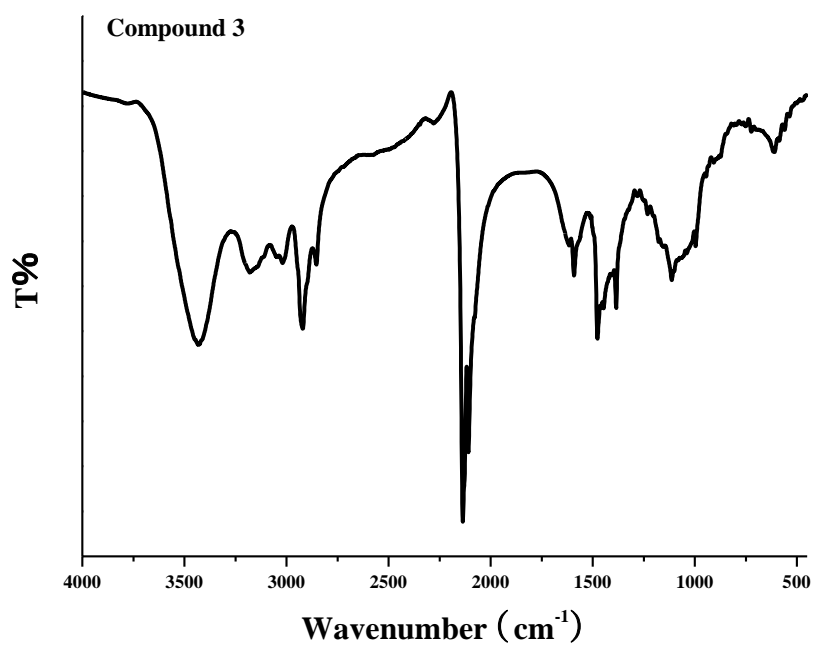
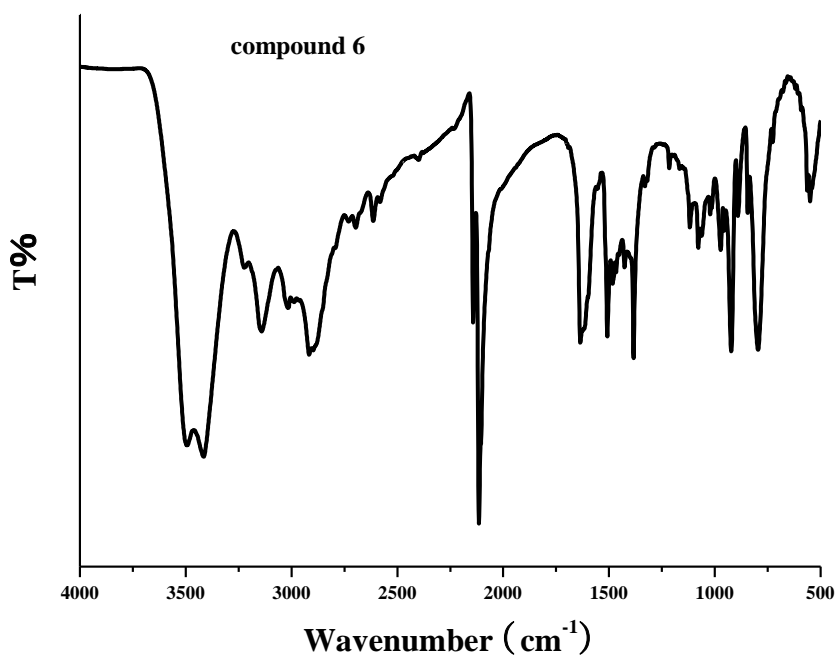
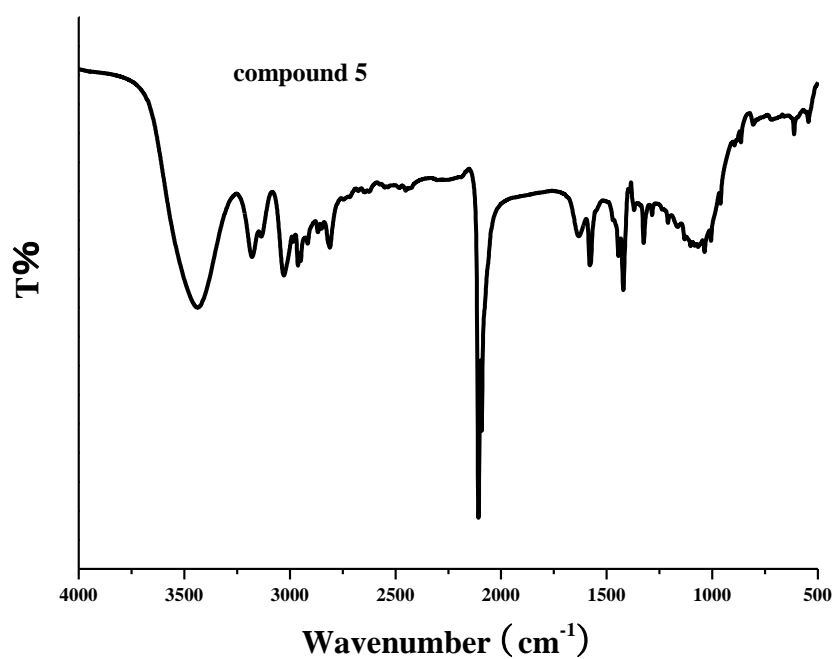


Fig. S1 Powder X-ray diffraction (XRD) patterns for the title compounds.







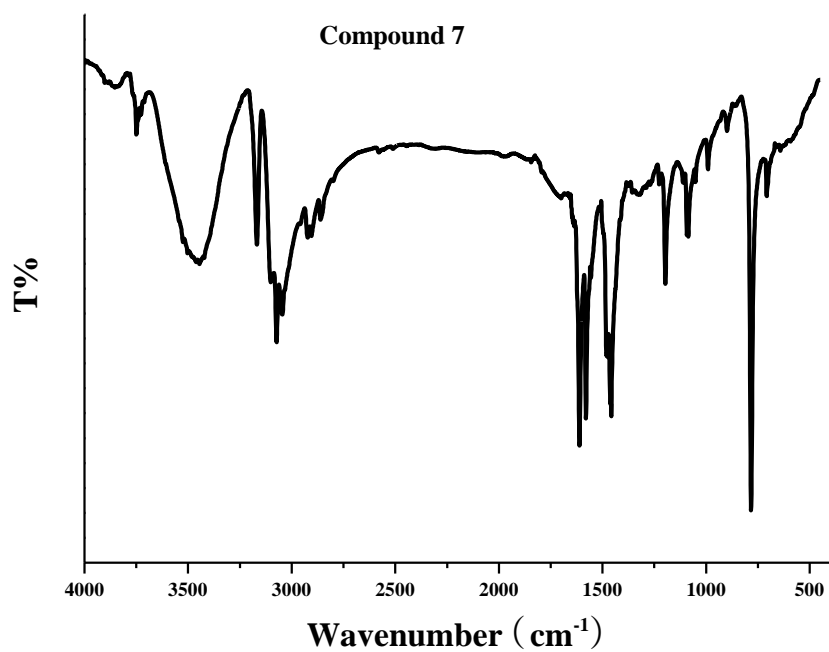


Fig. S2 The IR spectra of the title compounds.

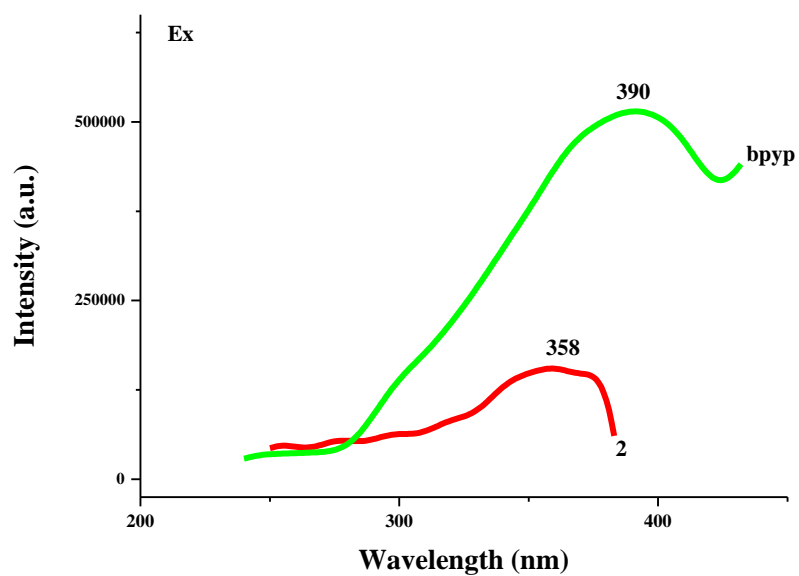


Fig. S3 The excitation spectra of compound 2 and the bppy molecule in the solid state.

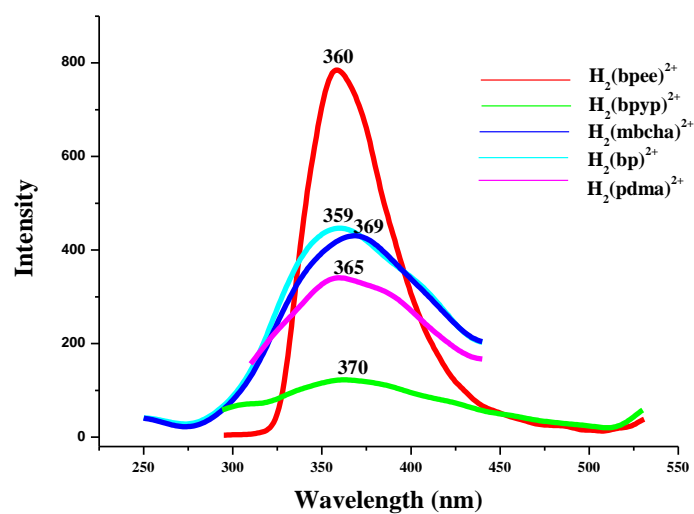


Fig. S4 The emission spectra of the organic molecules in an acidic solution (concentration/mol·L⁻¹: 4.25×10^{-4} for H₂(bpee)²⁺, 1.00×10^{-4} for H₂(bpyp)²⁺, 2.13×10^{-4} for H₂(mbcha)²⁺, 2.31×10^{-4} for H₂(bp)²⁺, 2.49×10^{-4} for H₂(pdma)²⁺)

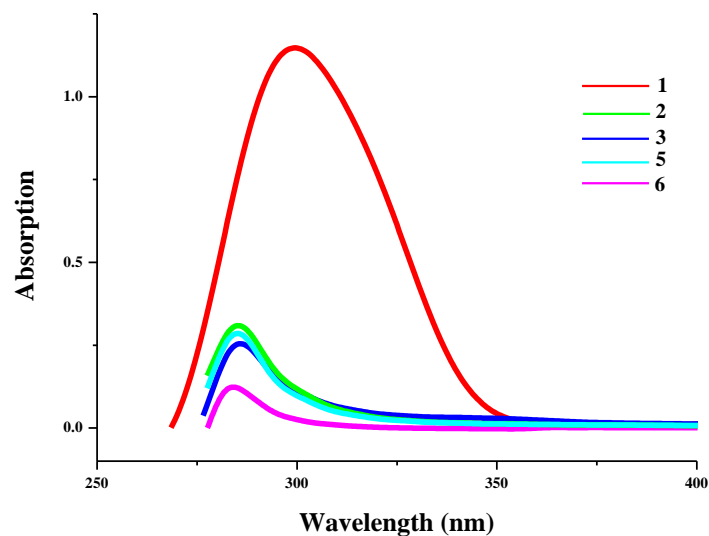


Fig. S5 The absorption spectra of compounds **1**, **2**, **3**, **5** and **6** in an aqueous solution (concentration/mol·L⁻¹: 4.35×10^{-5} for **1**, 5.67×10^{-3} for **2**, 2.60×10^{-3} for **3**, 5.34×10^{-3} for **5**, 1.05×10^{-3} for **6**)