

## Supporting Information

### Synthesis, structure and photoluminescence properties of three copper(I) iodide based inorganic-organic hybrid structures with pyrazine derivatives

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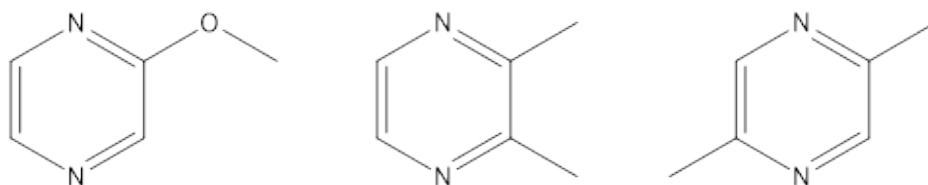


Figure S1. Structure plot of 2-*mo-pz* (left), 2,3-*dm-pz* (middle) and 2,5-*dm-pz* (right)

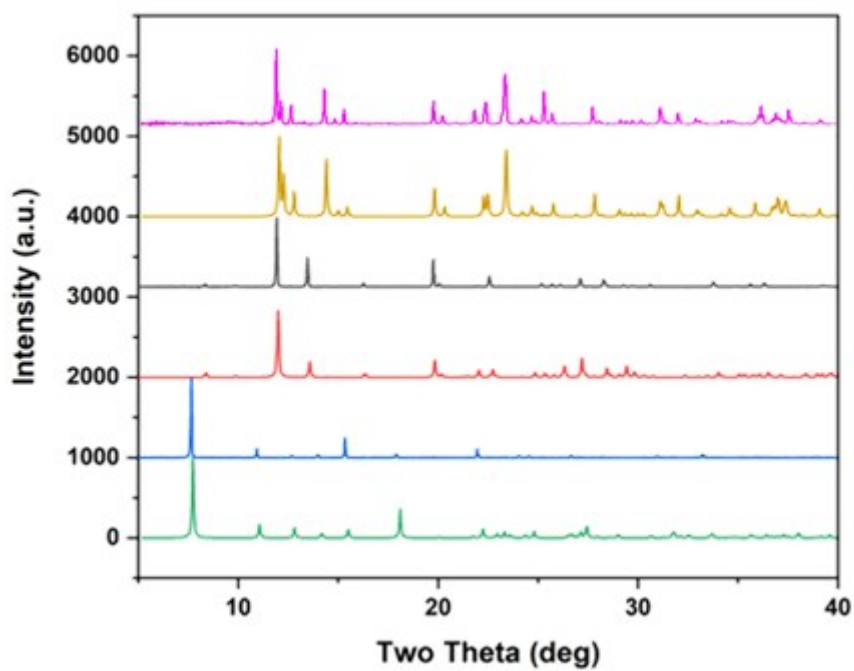


Figure S2. PXRD patterns. From bottom to top: simulated **1**, as made **1**, simulated **2**, as made **2**, simulated **3**, as made **3**.

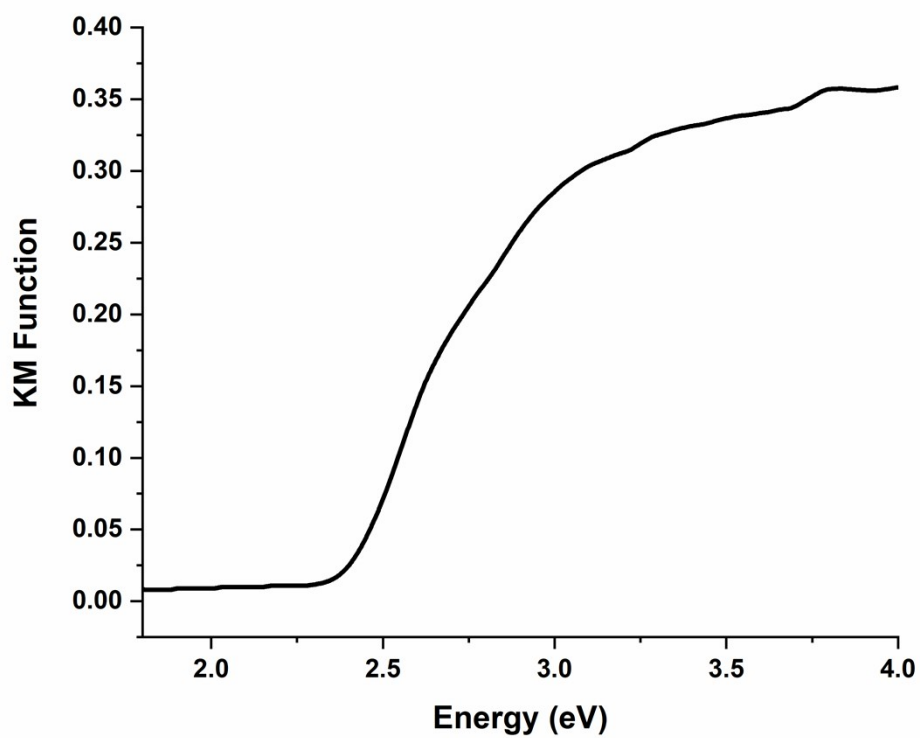


Figure S3. UV absorption plot of **1**.

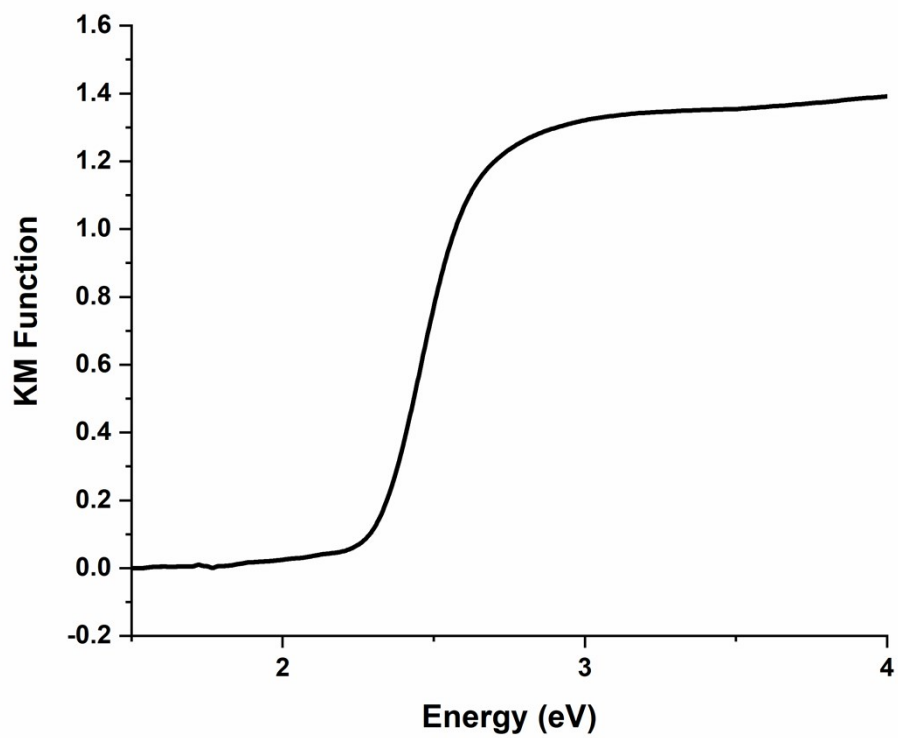


Figure S4. UV absorption plot of **2**.

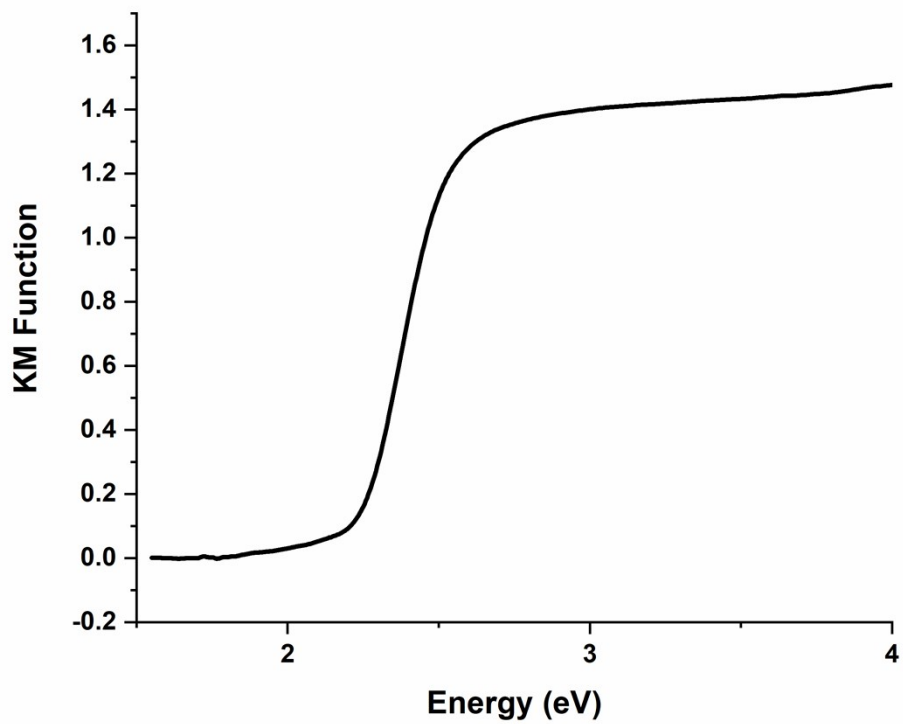


Figure S5. UV absorption plot of **3**.

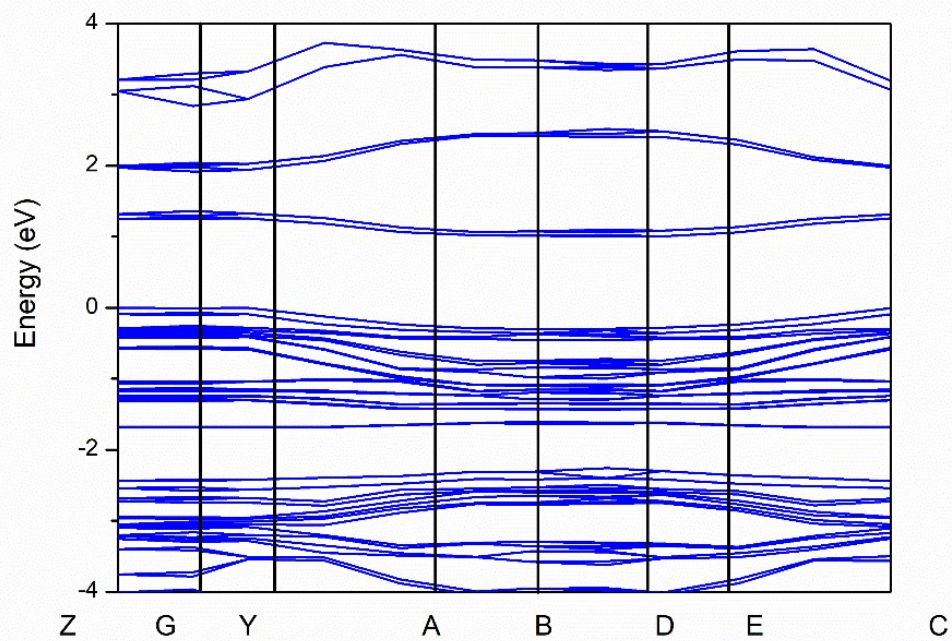


Figure S6. Calculated band structure of **1**.

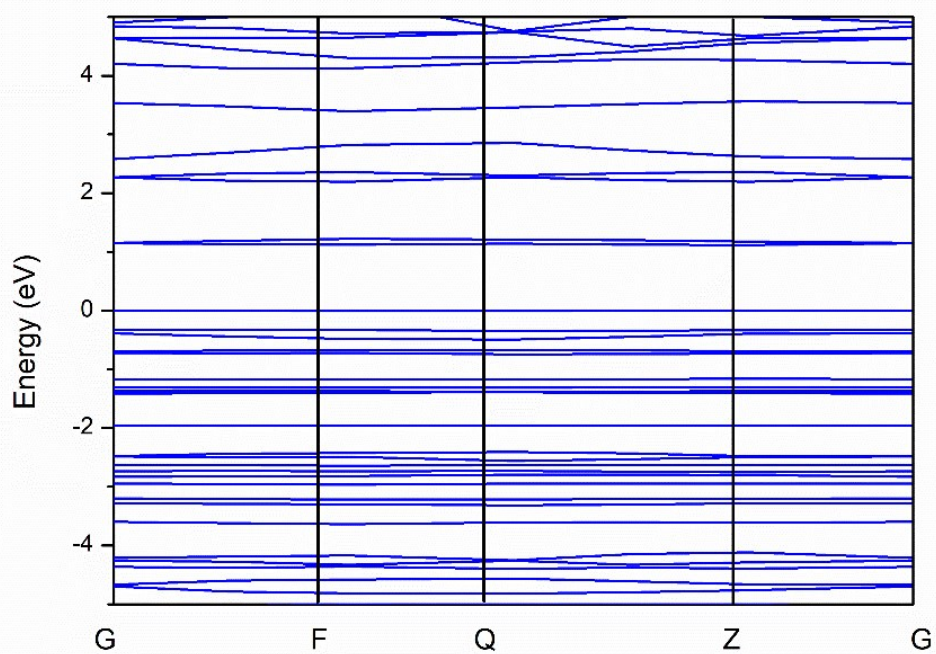


Figure S7. Calculated band structure of **2**.

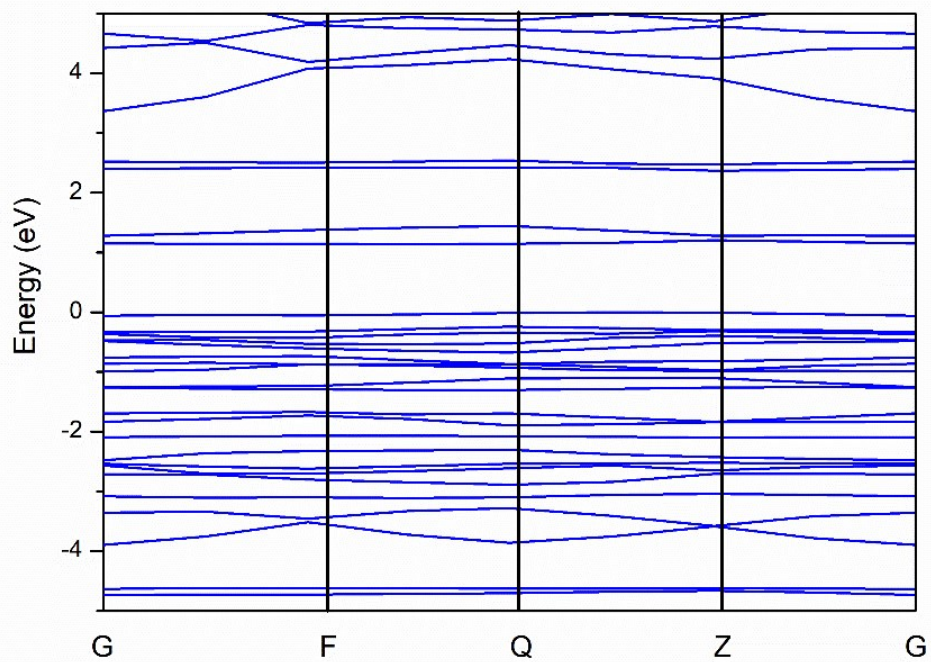


Figure S8. Calculated band structure of **3**.

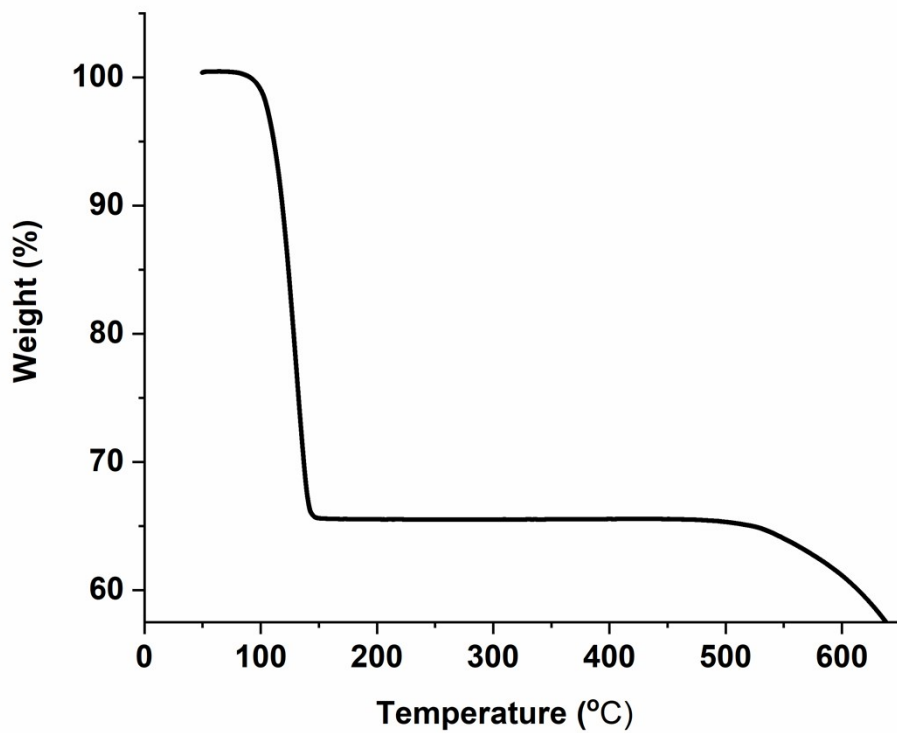


Figure 9. TGA plot of **1**.

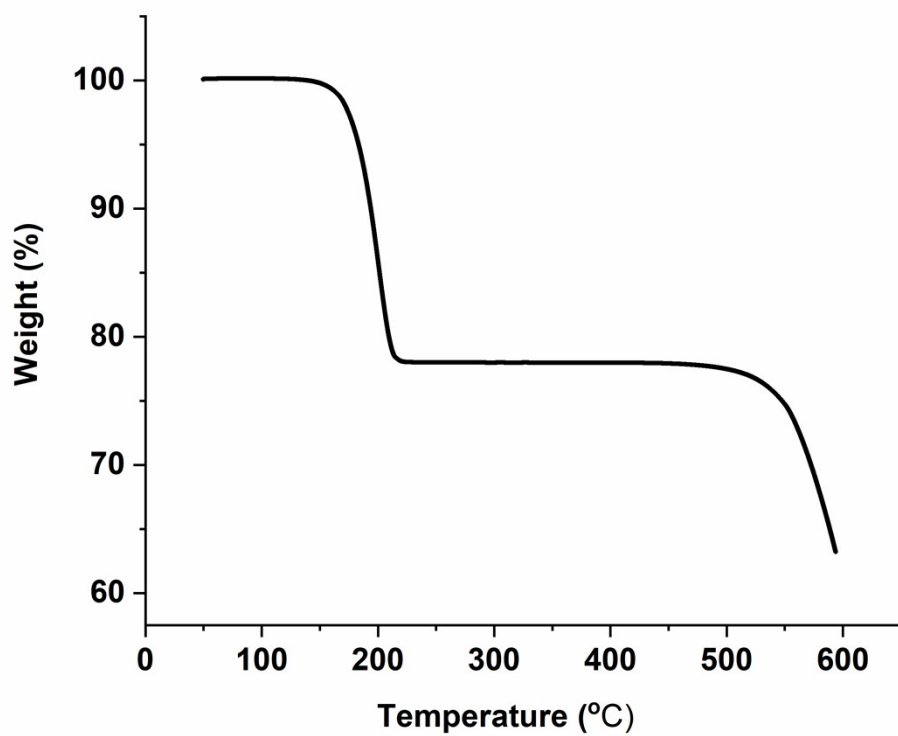


Figure 10. TGA plot of 2.

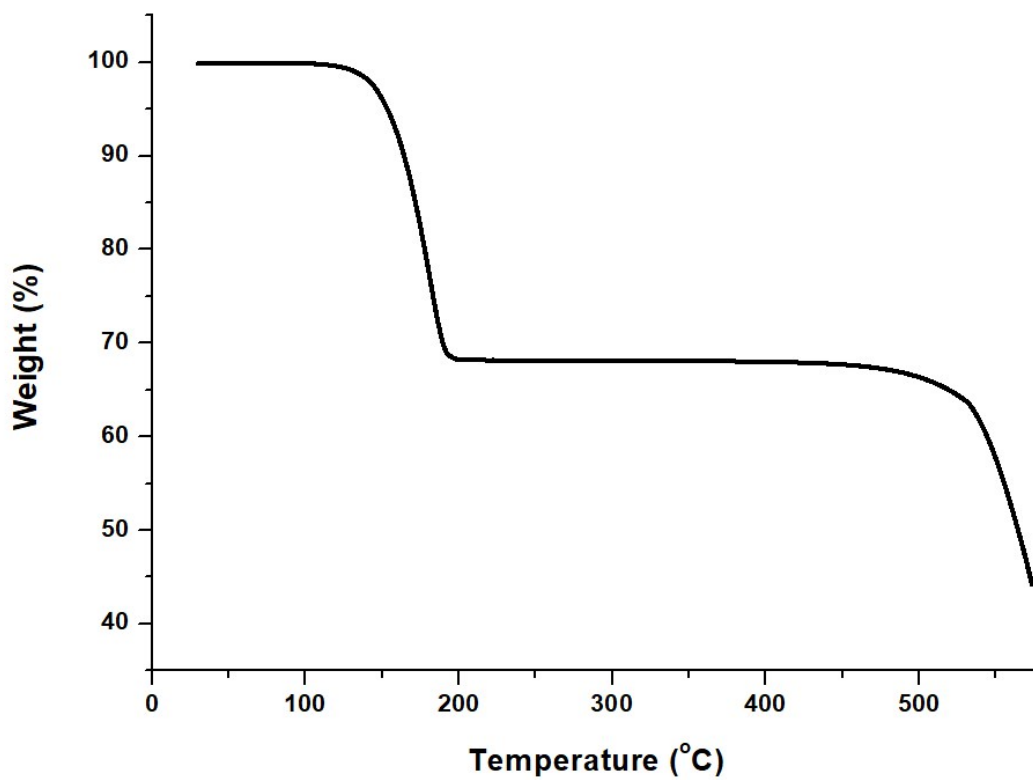


Figure 11. TGA plot of 3.

Table S1. The experimental and theoretical weight loss of **1**, **2** and **3**

Compound	Experimental weight loss (%)	Theoretical weight loss (%)
<b>1</b>	35.4	36.5
<b>2</b>	23.3	22.4
<b>3</b>	34.4	36.5

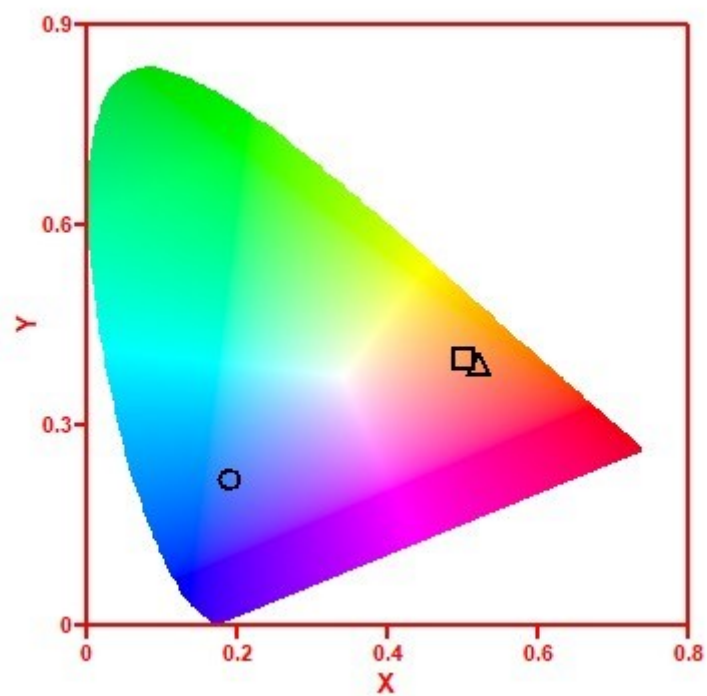


Figure S12. CIE coordinates of **1** (circle) **2** (square) and **3** (triangle).

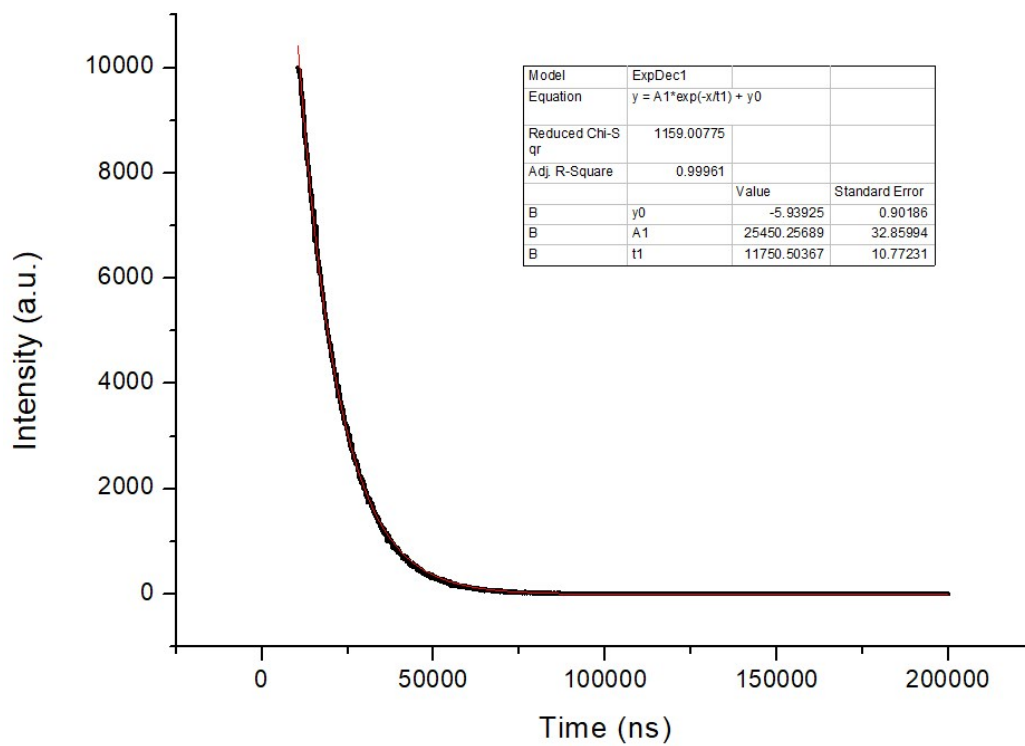


Figure S13. Luminescence decay curve of **1**.

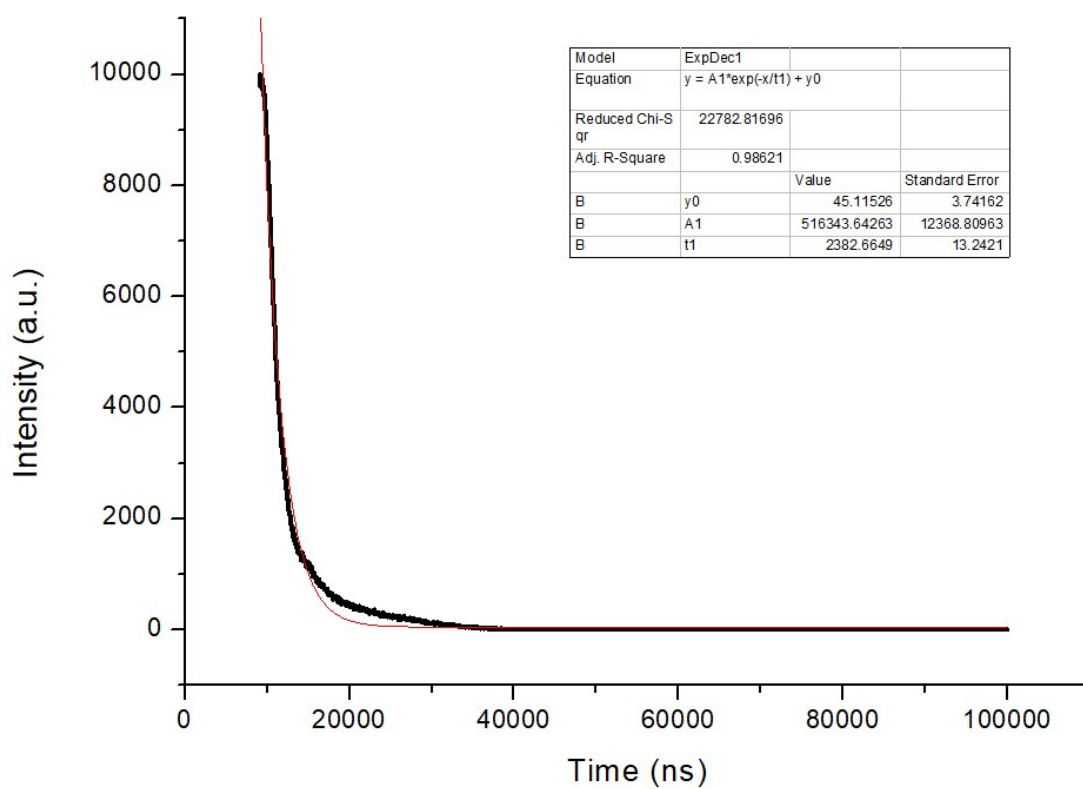


Figure S14. Luminescence decay curve of **2**.



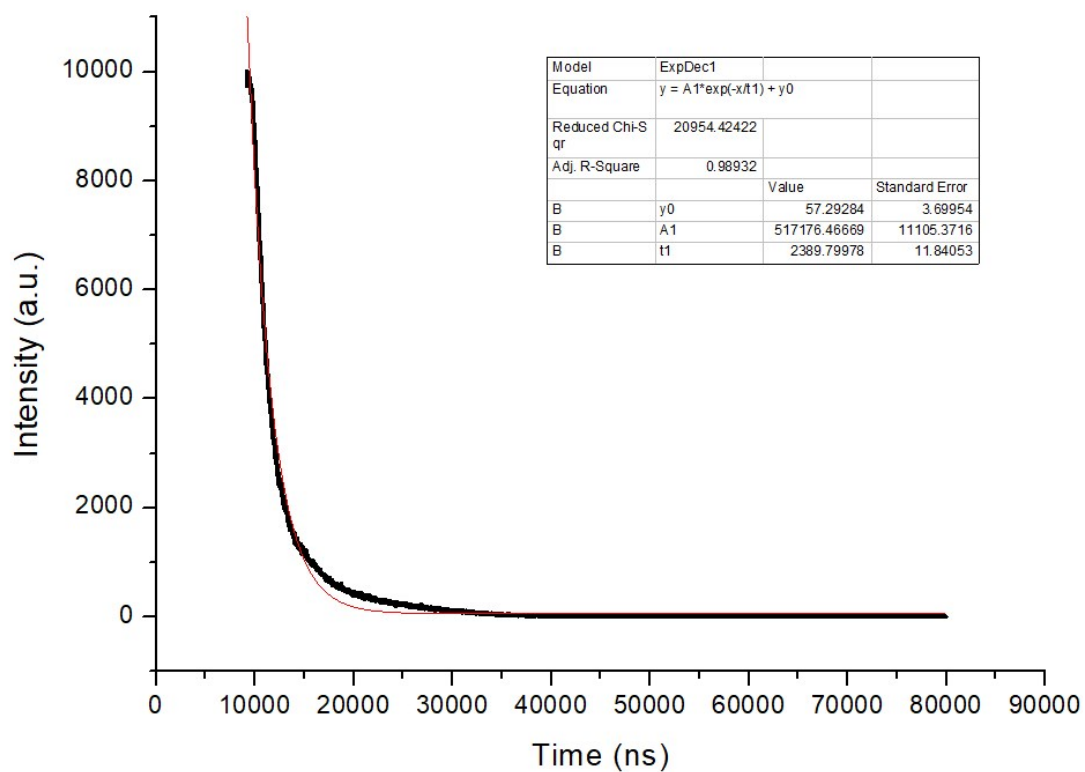


Figure S15. Luminescence decay curve of **3**

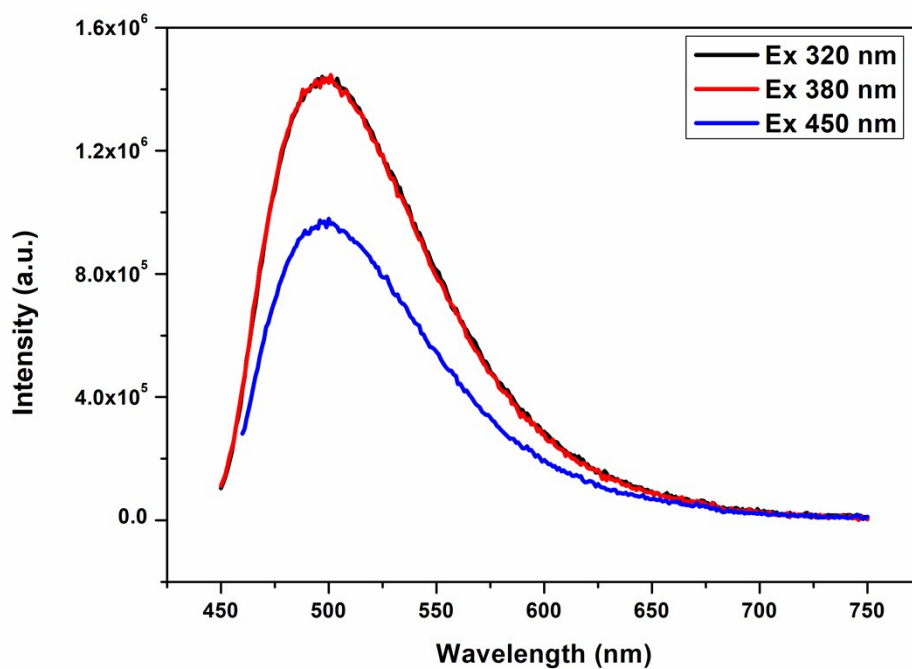


Figure S16. Emission spectra under different excitation wavelengths of **1**.

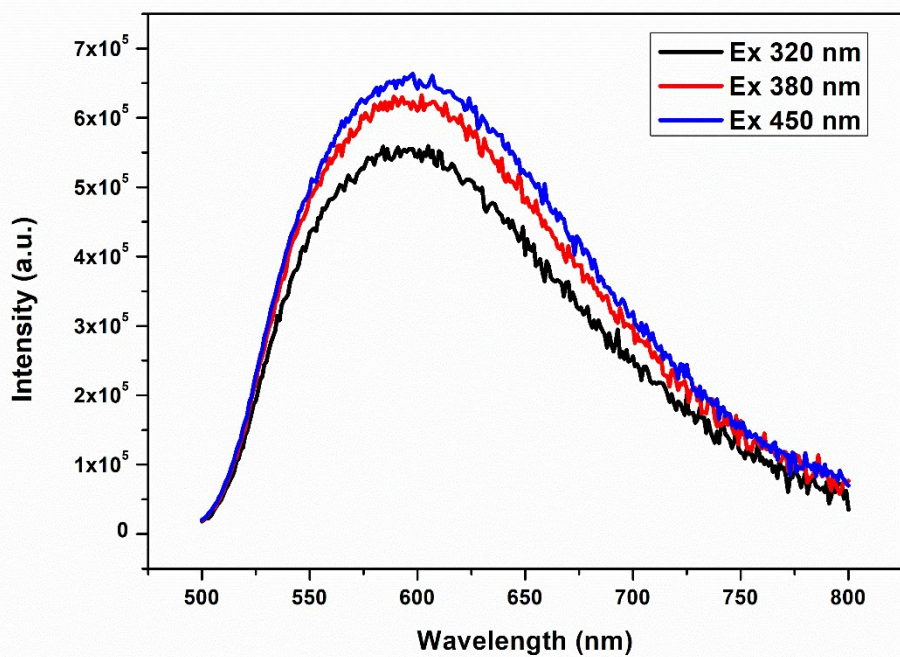


Figure S17. Emission spectra under different excitation wavelengths of **2**.

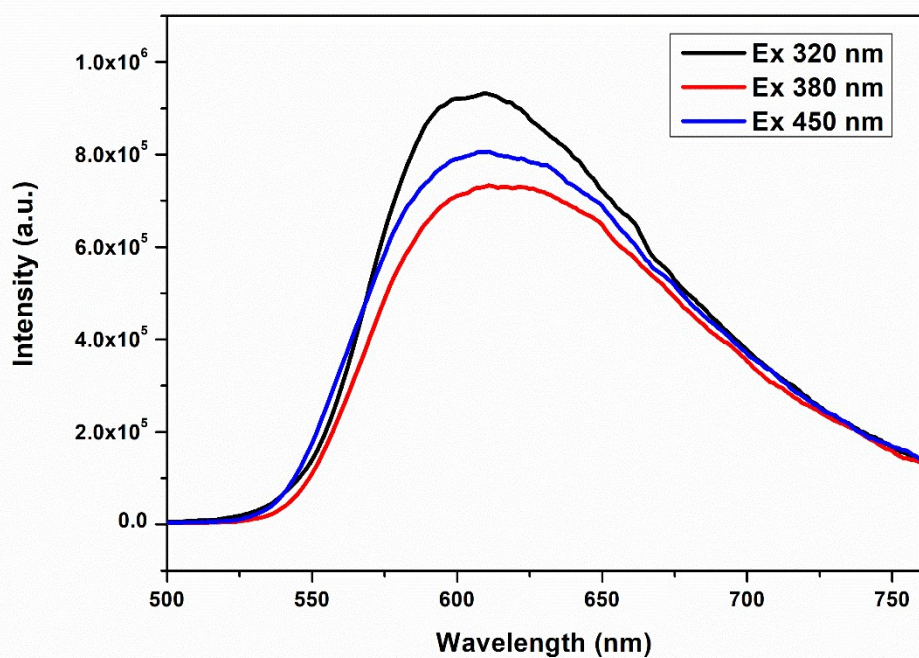


Figure S18. Emission spectra under different excitation wavelengths of **3**.

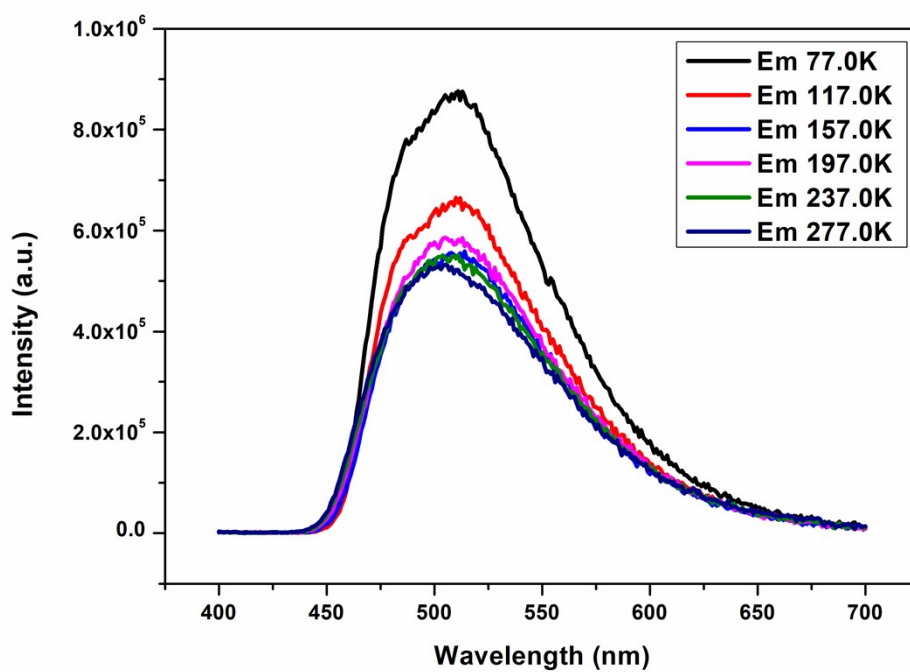


Figure S19. Emission spectra under different temperatures of **1**.

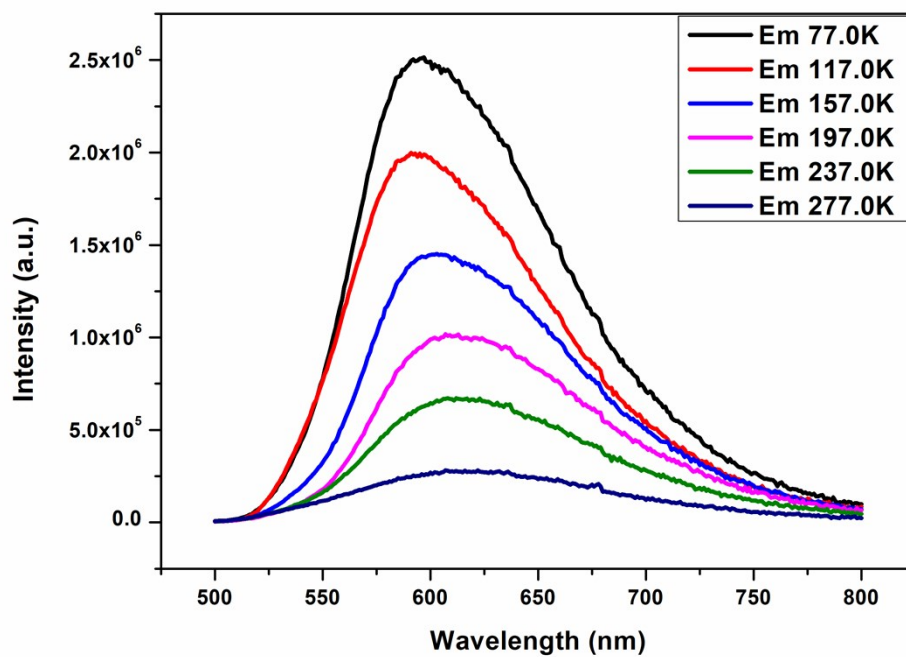


Figure S20. Emission spectra under different temperatures of **2**.

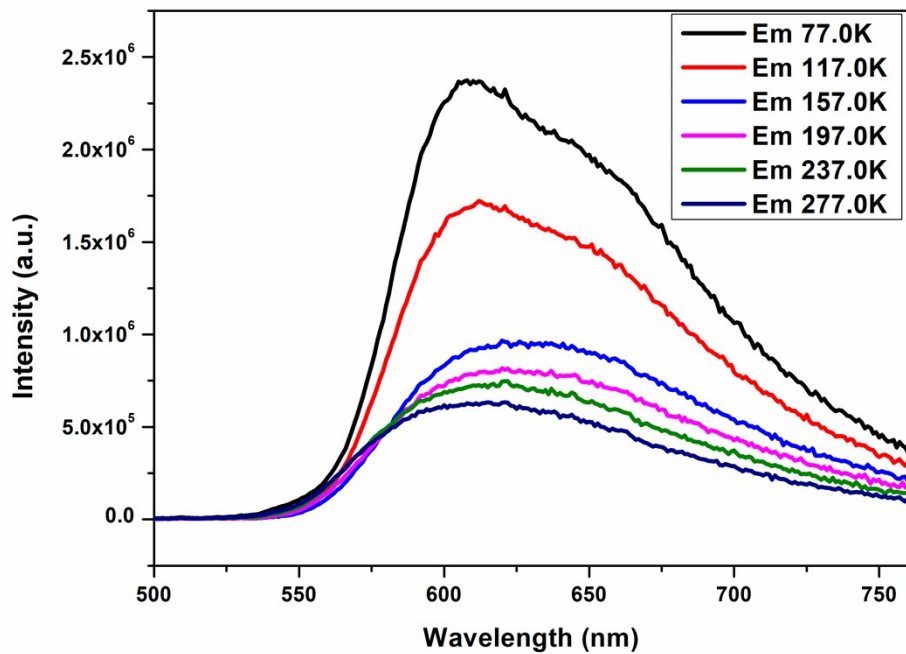


Figure S21. Emission spectra under different temperatures of **3**.