

Supplementary Materials:

Synthesis and Structural Characterization of a Silver(I) Pyrazolato Coordination Polymer

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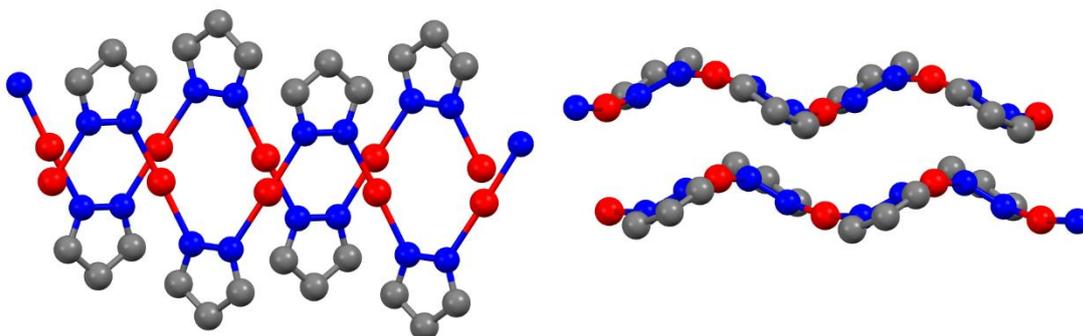


Figure S1. 1-D polynuclear structure of $[\text{Ag}(\mu\text{-pz})]_n$ (left) top view and (right) side view. Hydrogen atoms were omitted for clarity [1]. Color: red, silver; blue, nitrogen; grey, carbon. Intramolecular $\text{Ag}\cdots\text{Ag}$, 3.3718(7) Å, intermolecular $\text{Ag}\cdots\text{Ag}$ 3.2547(6) Å.

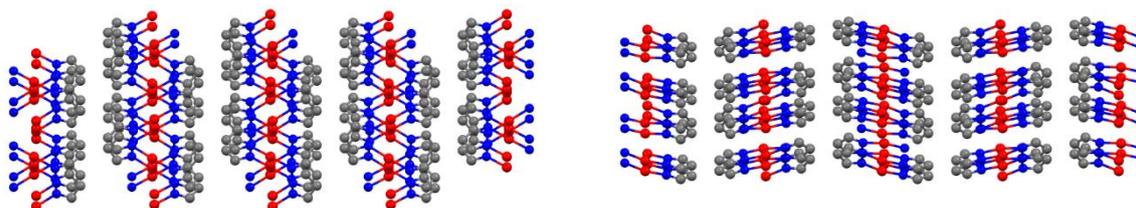


Figure S2. Packing diagram of $[\text{Ag}(\mu\text{-pz})]_n$ (left) top view and (right) side view. Hydrogen atoms were omitted for clarity [1]. Color: red, silver; blue, nitrogen; grey, carbon.

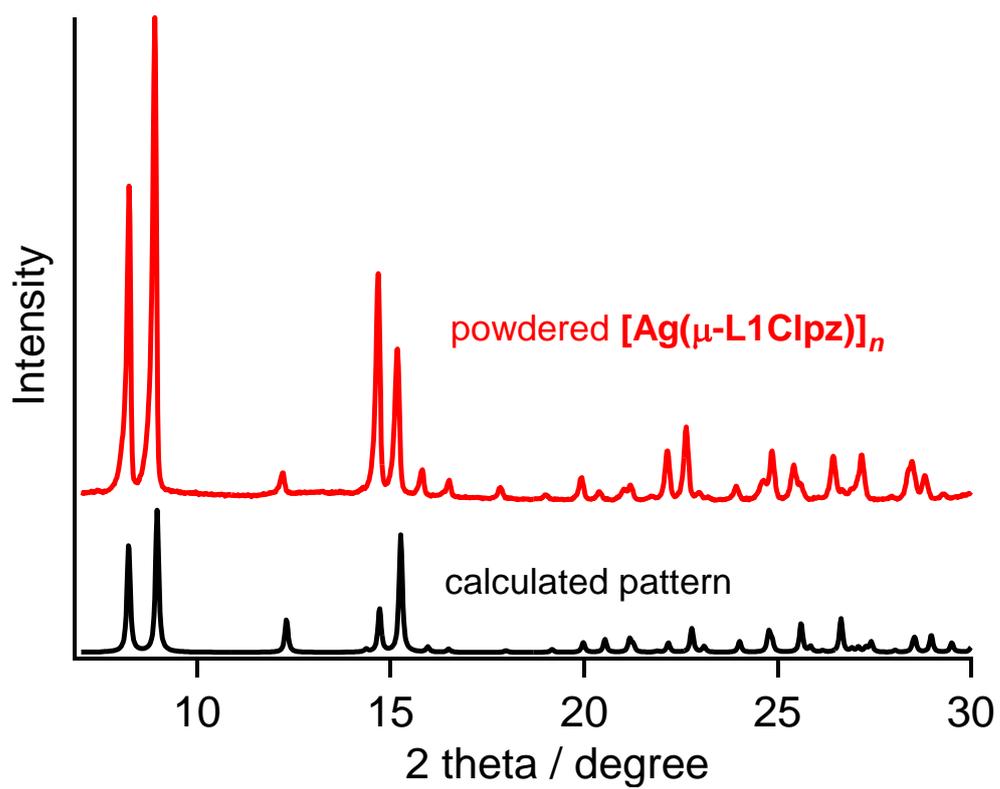


Figure S3. Powder X-ray diffraction spectrum of the obtained white powdered $[\text{Ag}(\mu\text{-L1Clpz})]_n$ (red line) and calculated X-ray diffraction pattern from single-crystal data (black line).

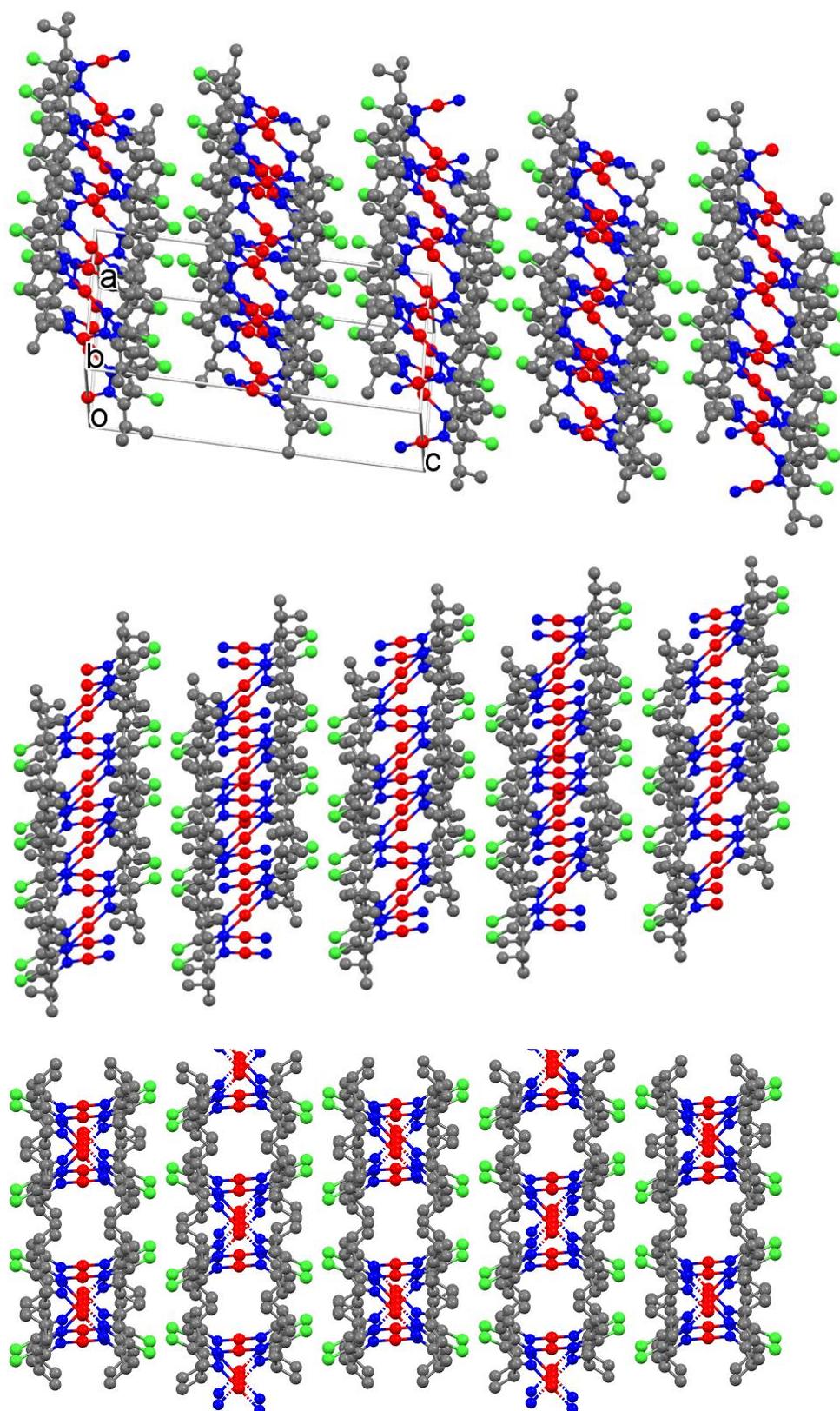


Figure S4. Packing diagram of $[\text{Ag}(\mu\text{-L1Clpz})]_n$ (top) with cell dimension, (center) side view, (bottom) top view. Hydrogen atoms were omitted for clarity. Color: red, silver; blue, nitrogen; green, chlorine; grey, carbon.

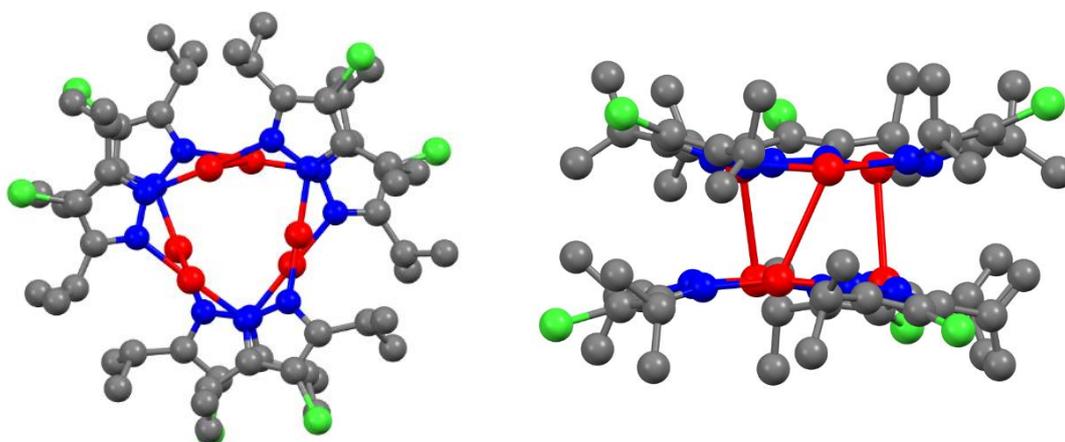


Figure S5. Crystal structure of $\{[Ag(\mu\text{-L1Clpz})]_3\}_2$ (left) top view and (right) side view. Hydrogen atoms were omitted for clarity [2]. Color: red, silver; blue, nitrogen; green, chlorine; grey, carbon. Intramolecular $Ag\cdots Ag'$ distances, 3.1003(17), 3.1298(15), and 3.1051(16) Å.

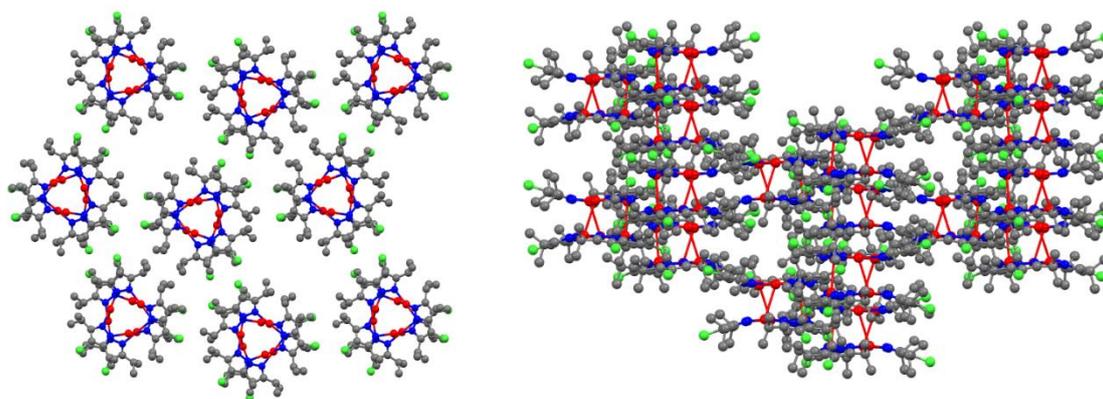


Figure S6. Packing diagram of $\{[Ag(\mu\text{-L1Clpz})]_3\}_2$. (left) top view and (right) side view. Hydrogen atoms were omitted for clarity [2]. Color: red, silver; blue, nitrogen; green, chlorine; grey, carbon.

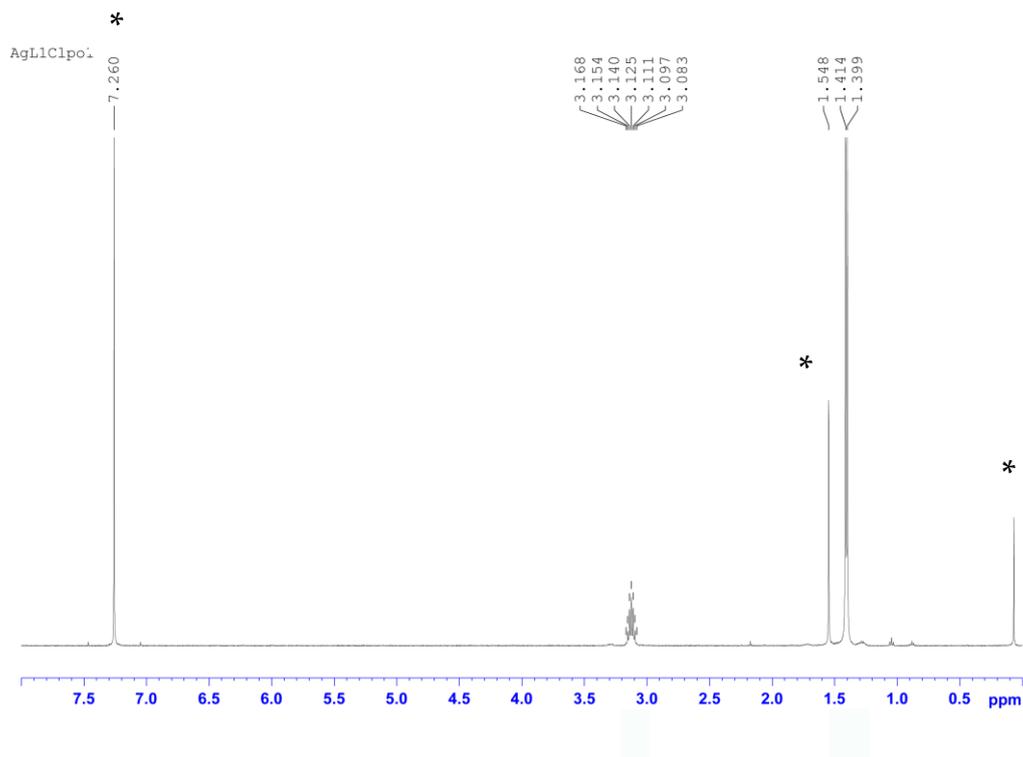


Figure S7. $^1\text{H-NMR}$ spectrum of $[\text{Ag}(\mu\text{-L1Clpz})]_n$ in CDCl_3 at room temperature (* marks solvents, water, and TMS peaks).

Table S1. Comparisons of the $^1\text{H-NMR}$ chemical shifts.

	$[\text{Ag}(\mu\text{-L1Clpz})]_n$	$\{[\text{Ag}(\mu\text{-L1Clpz})]_3\}_2 [2]$
CHMe_2	1.41	1.41
CHMe_2	3.13	3.13

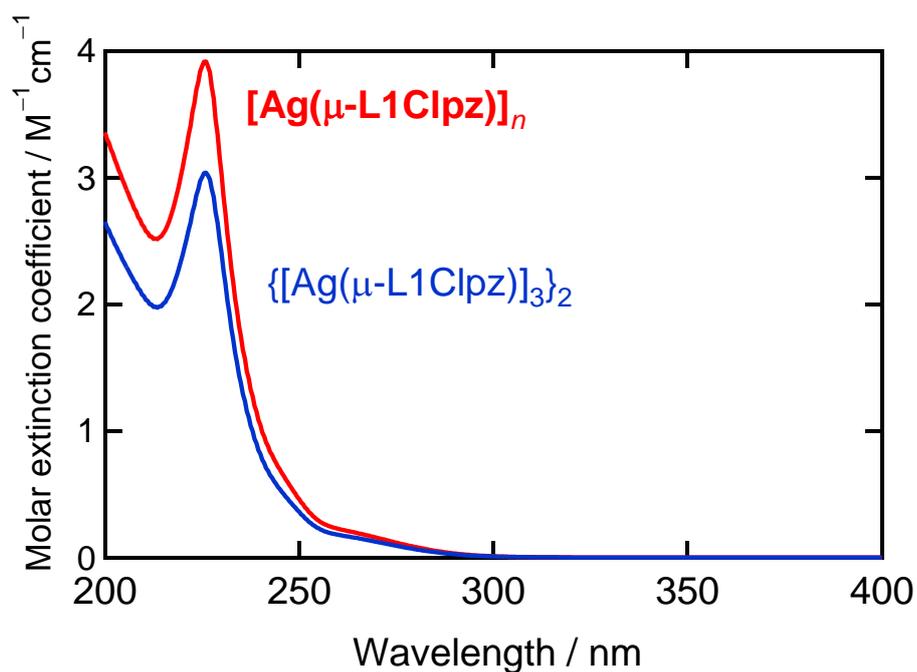


Figure S8. UV-Vis spectra of $[\text{Ag}(\mu\text{-L1Clpz})]_n$ (red line) and $\{[\text{Ag}(\mu\text{-L1Clpz})_3]_2\}$ (blue line) [2] in cyclohexane at room temperature.

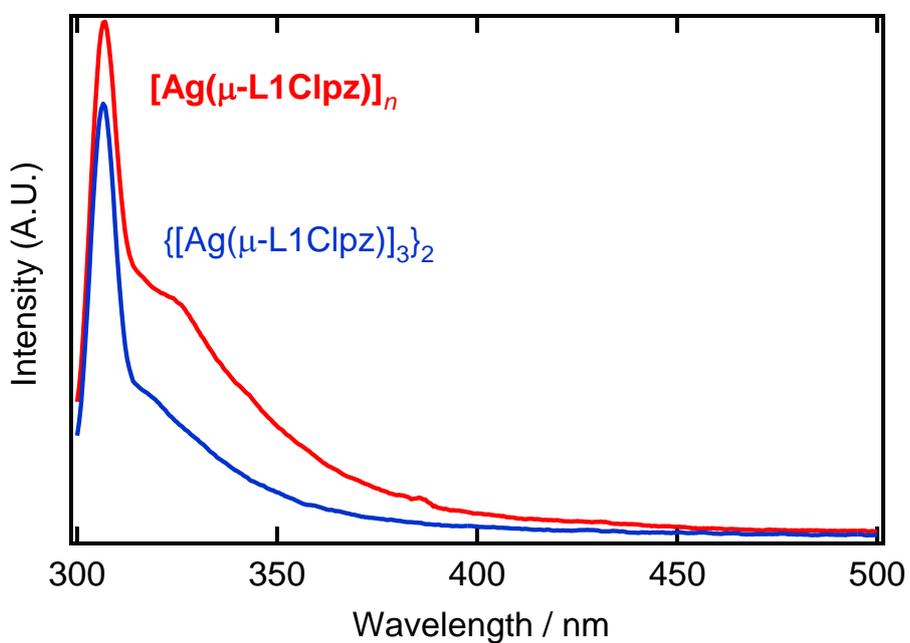


Figure S9. Photoluminescence spectra of $[\text{Ag}(\mu\text{-L1Clpz})]_n$ (red line) and $\{[\text{Ag}(\mu\text{-L1Clpz})_3]_2\}$ (blue line) [2] in cyclohexane at room temperature at 280 nm excitation wavelength.

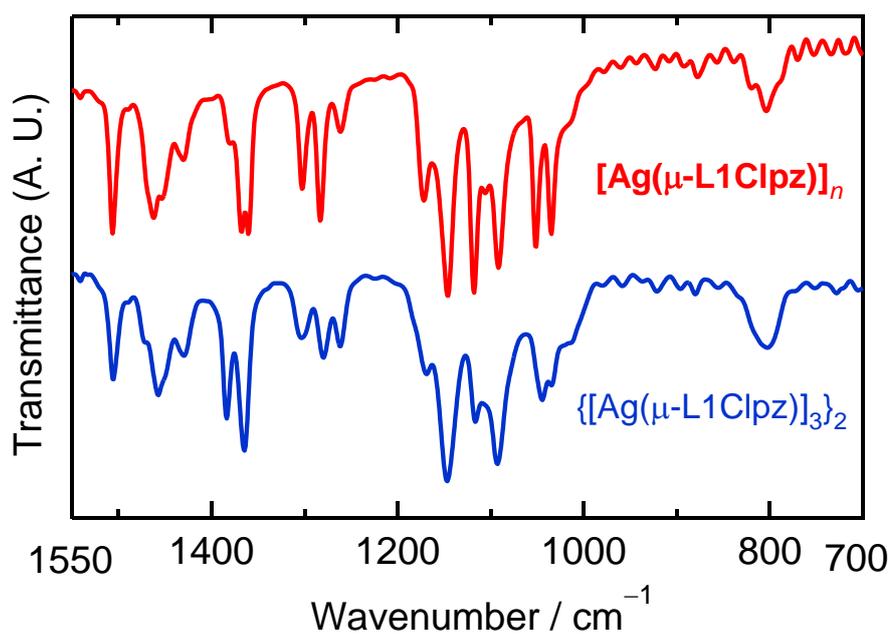


Figure S10. IR spectra of $[\text{Ag}(\mu\text{-L1Clpz})]_n$ (red line) and $\{[\text{Ag}(\mu\text{-L1Clpz})_3]_2\}_2$ (blue line) [2] in KBr disk at room temperature.

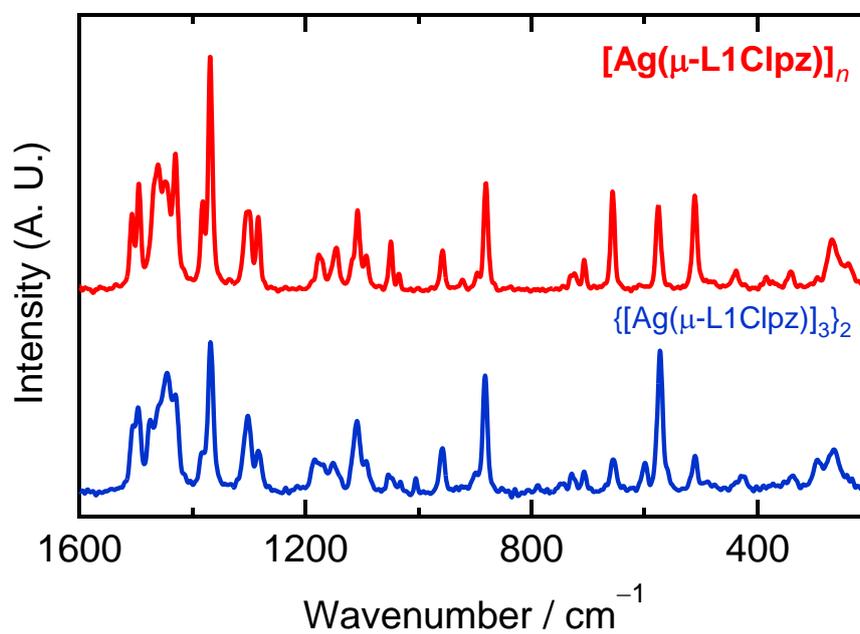


Figure S11. Raman spectra of $[\text{Ag}(\mu\text{-L1Clpz})]_n$ (red line) and $\{[\text{Ag}(\mu\text{-L1Clpz})_3]_2\}_2$ (blue line) [2] in powder at room temperature.

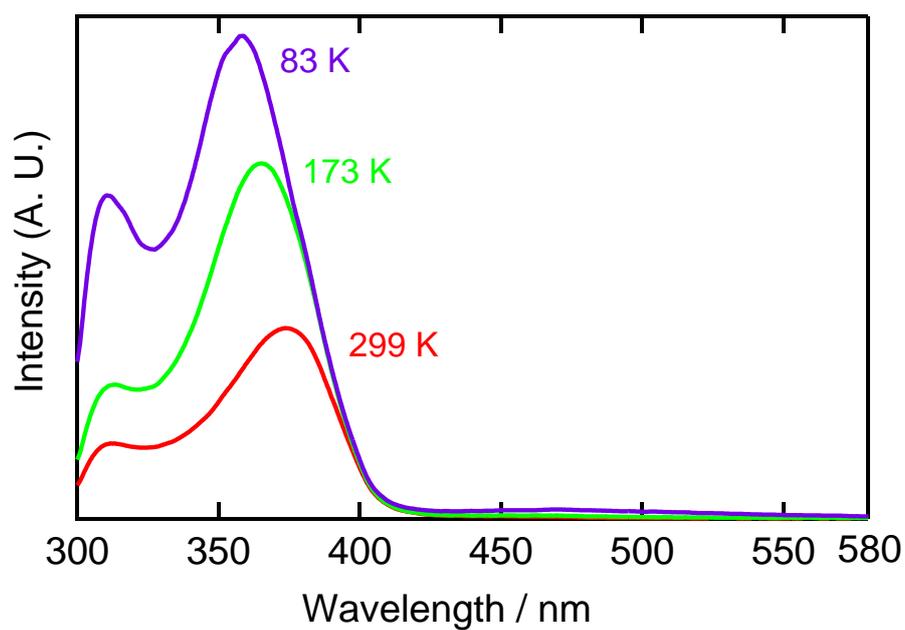


Figure S12. Solid-state temperature dependent photoluminescence spectra at 83 K (violet line), 173 K (green line), and 299 K (red line) in $[\text{Ag}(\mu\text{-L1Clpz})]_3 \cdot 2$ at 280 nm excitation.

References

1. Zhang, C.-Y.; Feng, J.-B.; Gao, Q.; Xie, Y.-B. *catena*-Poly[silver(I)- μ -pyrazolato- $\kappa^2N:N'$]. *Acta Cryst.* **2008**, *E64*, m352.
2. Morishima, Y.; Young, D. J.; Fujisawa, K. Structure and photoluminescence of silver(i) trinuclear halopyrazolato complexes. *Dalton Trans.* **2014**, *43*, 15915–15928.