Supplementary Material

Coordination Networks Constructed with the Supramolecular Synthon 4-Nitrophenyl–C≡C⊃Ag$_n$ (n = 3, 4, 5)

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Selected bond length information in regard to ethynide-silver coordination geometries in compound 3, 4, 6 and 10.

$3AgL \cdot 4AgCF_3COO \cdot 2CH_3CN$ (**3**)

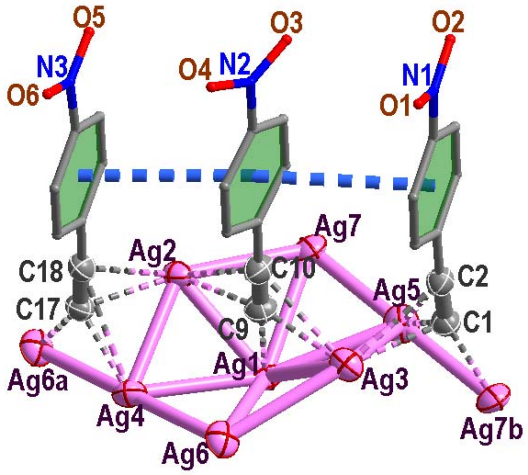


Fig. S1. Selected bond lengths information for compound **3** [Å]: C1≡C2 1.216(7), C9≡C10 1.199(7), C17≡C18 1.216(7), C1–Ag7b 2.086(5), C1–Ag3 2.425(5), C1–Ag5 2.172(5), C2–Ag3 2.734(5), C2–Ag5 3.045(5), C9–Ag1 2.114(5), C9–Ag2 2.433(5), C9–Ag3 2.378(5), C10–Ag2 2.906(5), C10–Ag3 2.818(5), C17–Ag6a 2.081(5), C17–Ag2 2.429(5), C17–Ag4 2.165(5), C18–Ag2 2.753(5), C18–Ag4 3.207(5), Ag7b···Ag5 2.841(1), Ag6a···Ag4 2.839(1), Ag1···Ag2 2.910(1), Ag1···Ag3 2.937(1), Ag1···Ag4 3.160(1), Ag1···Ag6 3.269(1), Ag1···Ag7 3.257(1), Ag2···Ag4 2.973(1), Ag2···Ag7 3.256(1), Ag3···Ag5 2.944(1), Ag3···Ag6 3.183(1), Ag4···Ag6 2.839(1), Ag5···Ag7 2.841(1), Symmetry code: a 1–*x*, 2–*y*, 2–*z*, b 2–*x*, 2–*y*, 2–*z*.

$3AgL \cdot 7AgCF_3COO \cdot 6CH_3CN$ (**4**)

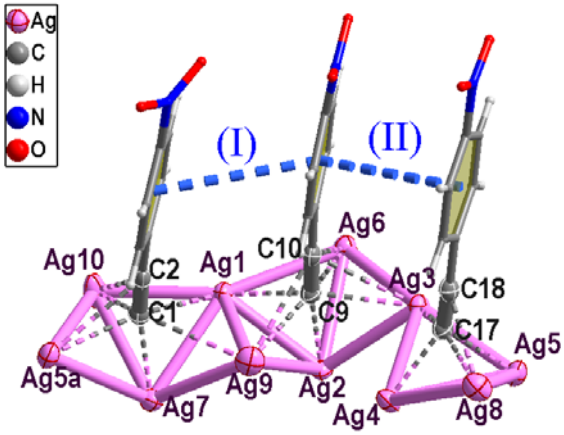


Fig. S2. Selected bond lengths information for compound **4** [Å]: C1≡C2 1.219(6), C9≡C10 1.223(6), C17≡C18 1.215(6), C1–Ag1 2.477(4), C1–Ag7 2.132(4), C1–Ag9 2.928(4), C1–Ag10 2.180(4), C1–Ag5a 2.432(4), C2–Ag10 2.973(4), C2–Ag5a 2.761(4), C9–Ag1 2.370(4), C9–Ag2 2.148(4), C9–Ag3 2.487(4), C9–Ag6 2.409(4), C9–Ag9 2.461(4), C10–Ag3 2.798(4), C10–Ag9 3.000(4), C17–Ag3 2.378(4), C17–Ag4 2.150(4), C17–Ag5 2.271(4), C17–Ag8 2.422(4), C18–Ag8 2.539(4), Ag1···Ag2 2.839(1), Ag1···Ag6 3.075(1), Ag1···Ag7 3.026(1), Ag1···Ag9 3.037(1), Ag1···Ag10 2.947(1), Ag2···Ag3 2.977(1), Ag2···Ag6 2.952(1), Ag2···Ag9 2.981(1), Ag3···Ag4 2.859(1), Ag3···Ag5 2.932(1), Ag3···Ag6 3.067(1), Ag4···Ag5 3.143(1), Ag4···Ag8 3.043(1), Ag5···Ag8 3.123(1), Ag7···Ag9 3.010(1), Ag7···Ag10 3.022(1), Ag7···Ag5a 3.011(1), Ag10···Ag5a 3.244(1). Symmetry code: a *x*–1, *y*, *z*.

$4AgL \cdot 4AgC_3F_7COO \cdot 3CH_3CN$ (**6**)

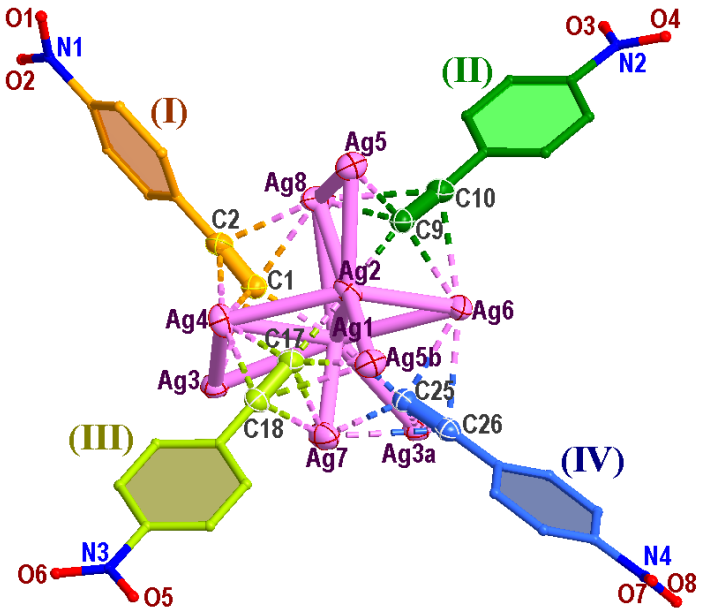
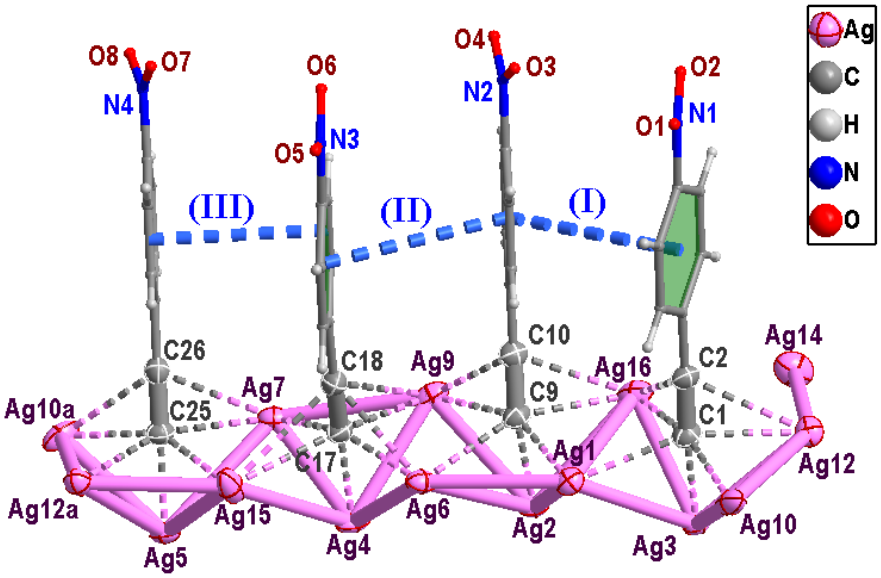
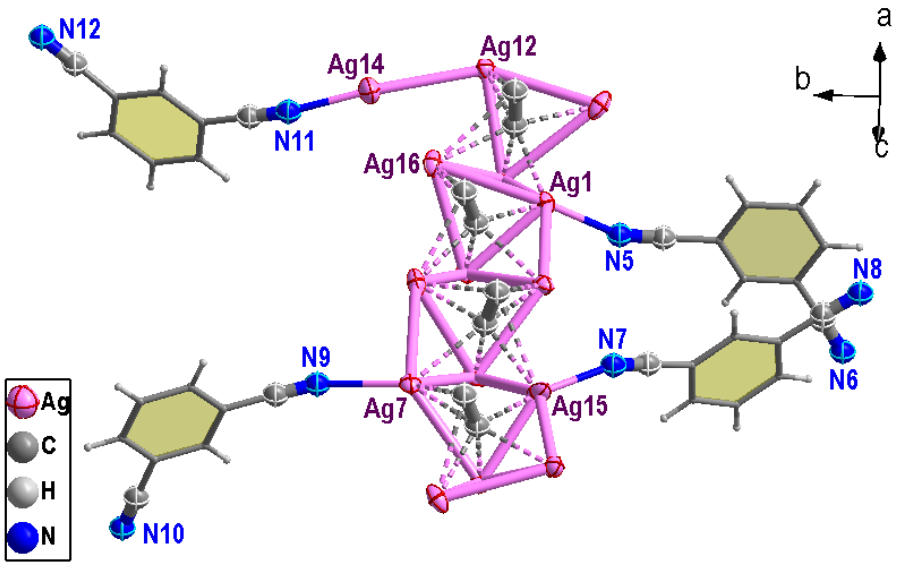


Fig. S3. Selected bond lengths information for compound **6** [Å]: C1≡C2 1.216(5), C9≡C10 1.223(5), C17≡C18 1.223(5), C17≡C18 1.222(5), C1–Ag1 2.122(4), C1–Ag3 2.437(3), C1–Ag4 2.430(3), C1–Ag8 2.507(4), C2–Ag4 2.950(3), C2–Ag8 2.598(4), C9–Ag2 2.114(4), C9–Ag5 2.387(4), C9–Ag6 2.389(4), C9–Ag8 2.348(4), C10–Ag6 2.582(4), C10–Ag8 2.782(4), C17–Ag2 2.104(4), C17–Ag4 2.389(4), C17–Ag5b 2.437(4), C17–Ag7 2.394(4), C18–Ag4 2.839(4), C18–Ag5b 2.874(4), C18–Ag7 2.668(4), C25–Ag1 2.135(4), C25–Ag6 2.410(4), C25–Ag7 2.345(4), C25–Ag3a 2.365(4), C26–Ag6 2.670(4), C26–Ag7 2.847(4), C26–Ag3a 2.807(4), Ag1···Ag2 3.093(1), Ag1···Ag3 2.874(1), Ag1···Ag4 3.202(1), Ag1···Ag6 3.045(1), Ag1···Ag7 2.951(1), Ag1···Ag8 3.136(1), Ag1···Ag3a 3.068(1), Ag2···Ag4 2.954(1), Ag2···Ag5 2.856(1), Ag2···Ag6 2.950(1), Ag2···Ag8 3.068(1), Ag2···Ag5b 2.954(1), Ag3···Ag4 2.922(1), Ag5···Ag8 3.285(1). Symmetry code: a –*x*, –*y*, 2–*z*; b 1–*x*, –*y*, 2–*z* .

$4AgL \cdot 12AgCF_3COO \cdot 4(m\text{-}NCC_6H_4CN) \cdot H_2O$ (**10**)



(**a**)



(**b**)

Fig. S4. (**a**) Silver-ethynide coordination environment in compound **10**. Selected bond lengths information for compound **10** [Å]: C1≡C2 1.223(9), C9≡C10 1.231(9), C17≡C18 1.211(9), C25≡C26 1.225(9), C1–Ag1 2.494(6), C1–Ag3 2.096(7), C1–Ag10 2.592(7), C1–Ag12 2.453(6), C1–Ag16 2.561(7), C2–Ag12, C2–Ag16, C9–Ag1 2.356(6), C9–Ag2 2.814(6), C9–Ag6 2.823(7), C9–Ag9 2.552(6), C9–Ag16 2.468(6), C10–Ag9 2.743(7),

C10–Ag16 2.683(6), C17–Ag4 2.111(7), C17–Ag6 2.748(6), C17–Ag7 2.659(7), C17–Ag9 2.382(7), C17–Ag15 2.529(7), C18–Ag6 2.732(6), C18–Ag9 2.884(6), C18–Ag15 2.898(7), C25–Ag5 2.122(7), C25–Ag7 2.679(6), C25–Ag15 2.352(6), C25–Ag10a 2.493(6), C25–Ag12a 2.427(7), C26–Ag7 2.941(6), C26–Ag10a 2.843(7), Ag1···Ag2 2.853(1), Ag1···Ag3 2.896(1), Ag1···Ag6 2.987(1), Ag1···Ag16 3.162(1), Ag2···Ag6 3.108(1), Ag2···Ag9 3.115(1), Ag2···Ag16 3.032(1), Ag3···Ag10 3.228(1), Ag3···Ag12 2.971(1), Ag3···Ag16 3.058(1), Ag4···Ag6 3.028(1), Ag4···Ag7 2.880(1), Ag4···Ag9 2.972(1), Ag4···Ag15 3.066(1), Ag5···Ag7 3.208(1), Ag5···Ag15 2.818(1), Ag5···Ag10a 2.922(1), Ag5···Ag12a 3.009(1), Ag7···Ag9 3.264(1), Ag12···Ag14 3.175(1), Ag15···Ag12a 3.003(1), Ag10a···Ag12a 3.204(1). Symmetry code: a *x*, 1.5–*y*, 0.5+*z*, b *x*, 1.5–*y*, –0.5+*z*. (**b**) Geometrical arrangement of the nitrile ligands.