| Symmetry transformations used to generate equivalent atoms: #1 -x+1,-y+1,-z+2; #2 -x+1,y-1/2,-z+3/2 for 1; #3 -x+1,y+1/2,-z+1/2; #4 -x+1,y-1/2,-z+1/2 for 2; #5 x+1/2,-y+1/2,z; #6 x,y,-z+1 for 3.

Figure S1. The view of Co$_2$bih$_2$ loop in 1 exhibiting maximum dimensions of (corresponding to the Co$^-$-Co distance and shortest intracycle C$^-$-C separation) 12.741Å×7.499 Å.
Figure S2. The view of 2D [Co$_2$bpct]$_n$ layer in 1.

Figure S3. The view of 2D self-penetrating layers in 3.