Electronic Supplementary Information for:

Supramolecular Networks in Organic-Inorganic Hybrid Materials from Perchlorometalate(II) Salts and 2,4,5-Tri(4-pyridyl)imidazole.

Adriana Cruz Enríquez,[a] Marely G. Figueroa Pérez,[a] Jorge L. AlmaralSánchez,[a] Herbert Höpfl,[b] Miguel Parra-Hake[c] and José J. Campos-Gaxiola.[*a]

[a]Facultad de Ingeniería Mochis, Universidad Autónoma de Sinaloa. Fuente de Poseidón y Prol. Ángel Flores, Los Mochis, Sinaloa C. P. 81223.
[b]Centro de Investigaciones Químicas, Universidad Autónoma del Estado de Morelos, Av.Universidad 1001, Cuernavaca 62209.
[c]Centro de Graduados e Investigación del Instituto Tecnológico de Tijuana, Apartado Postal 1166, 22500 Tijuana, B. C. México.

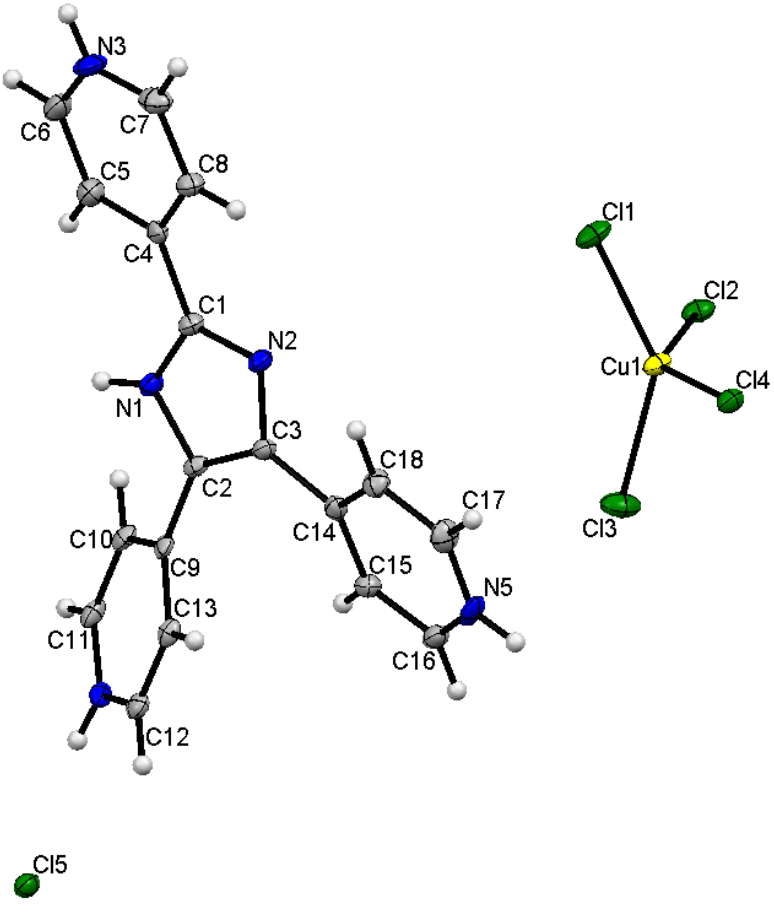

Figure S1. ORTEP diagram showing the structure of compound **1** with thermal ellipsoids at the 50% probability level and the atom-labeling scheme.

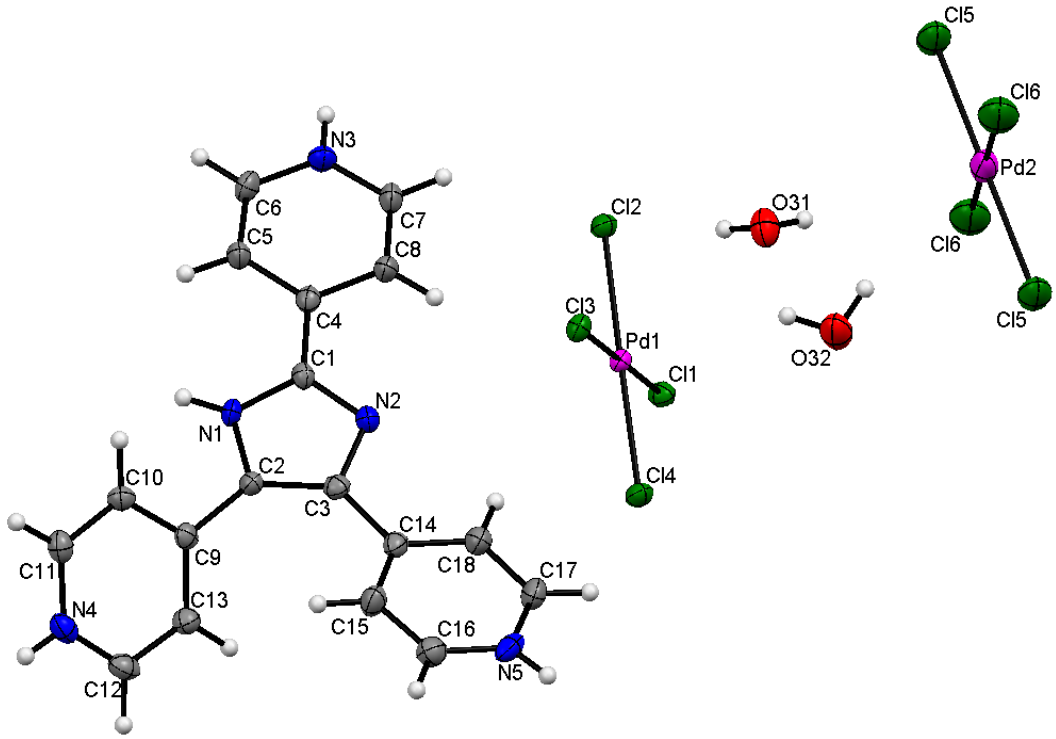

Figure S2. ORTEP diagram showing the structure of compound **2** with thermal ellipsoids at the 50% probability level and the atom-labeling scheme.

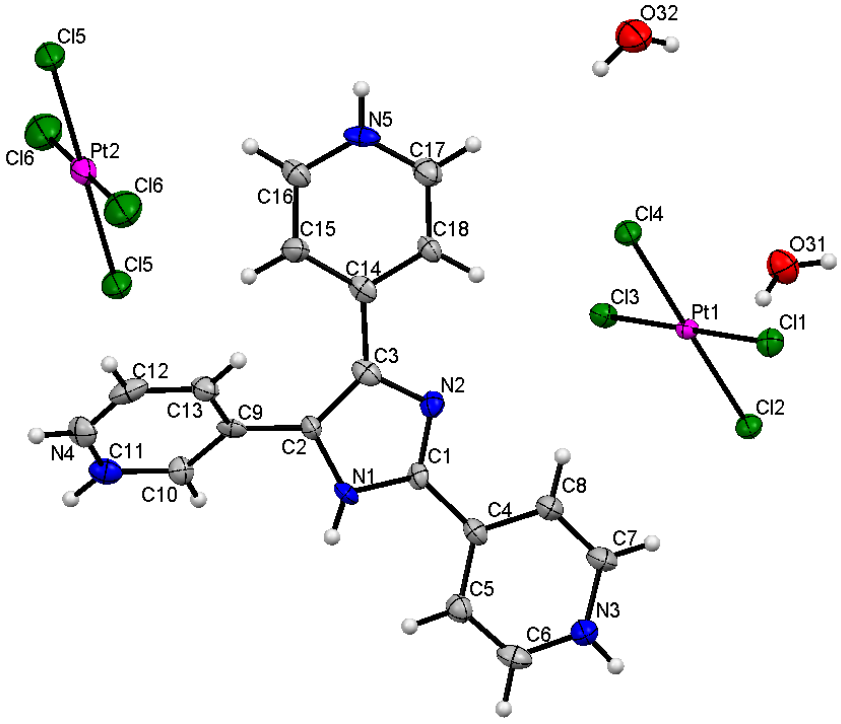

Figure S3. ORTEP diagram showing the structure of compound **3** with thermal ellipsoids at the 50% probability level and the atom-labeling scheme.

Table S1. Select bond lengths (Å) and bond angles (°) for the description of the coordination geometries of the copper, palladium and platinum atoms in compounds **1**-**3**[a], respectively.

		1	
Cu(1)-Cl(1)	2.2512(8)	Cl(3)-Cu(1)-Cl(1)	141.09(4)
Cu(1)-Cl(2)	2.2724(9)	Cl(3)-Cu(1)-Cl(4)	97.71(3)
Cu(1)-Cl(3)	2.2294(9)	Cl(3)-Cu(1)-Cl(2)	97.58(3)
Cu(1)-Cl(4)	2.2643(8)	Cl(4)-Cu(1)-Cl(2)	135.87(3)
Cl(1)-Cu(1)-Cl(2)	96.30(3)		
Cl(1)-Cu(1)-Cl(4)	97.15(3)		
		2	
Pd(1)-Cl(1)	2.3054(10)	Cl(4)-Pd(1)-Cl(2)	178.53(4)
Pd(1)-Cl(2)	2.3114(9)	Cl(4)-Pd(1)-Cl(3)	89.80(4)
Pd(1)-Cl(3)	2.2986(10)	Cl(6)-Pd(2)-Cl(6)#1	180.0
Pd(1)-Cl(4)	2.2937(11)	Cl(6)-Pd(2)-Cl(5)#1	88.80(4)
Pd(2)-Cl(5)	2.3202(10)	Cl(6)#1-Pd(2)-Cl(5)#1	91.20(4)
Pd(2)-Cl(5)#1	2.3202(10)	Cl(6)-Pd(2)-Cl(5)	91.20(4)
Pd(2)-Cl(6)	2.2753(13)	Cl(6)#1-Pd(2)-Cl(5)	88.80(4)
Pd(2)-Cl(6)#1	2.2753(13)	Cl(5)-Pd(2)-Cl(5)#1	180.0
Cl(1)-Pd(1)-Cl(2)	88.65(3)		
Cl(3)-Pd(1)-Cl(1)	179.56(3)		
Cl(3)-Pd(1)-Cl(2)	91.63(3)		
Cl(4)-Pd(1)-Cl(1)	89.93(3)		
		3	
Pt(1)-Cl(1)	2.306(3)	Cl(4)-Pt(1)-Cl(2)	178.52(11)
Pt(1)-Cl(2)	2.312(3)	Cl(4)-Pt(1)-Cl(3)	89.55(10)
Pt(1)-Cl(3)	2.304(3)	Cl(5)#2-Pt(2)-Cl(5)	180.0(2)
Pt(1)-Cl(4)	2.301(3)	Cl(6)-Pt(2)-Cl(6)#2	180.0(2)
Pt(2)-Cl(5)	2.318(3)	Cl(6)-Pt(2)-Cl(5)#2	88.62(13)
Pt(2)-Cl(5)#2	2.318(3)	Cl(6)#2-Pt(2)-Cl(5)#2	91.38(13)
Pt(2)-Cl(6)	2.278(5)	Cl(6)-Pt(2)-Cl(5)	91.38(13)
Pt(2)-Cl(6)#2	2.278(5)	Cl(6)#2-Pt(2)-Cl(5)	88.62(13)
Cl(1)-Pt(1)-Cl(2)	88.46(10)		
Cl(3)-Pt(1)-Cl(1)	179.48(11)		
Cl(3)-Pt(1)-Cl(2)	91.92(10)		
Cl(4)-Pt(1)-Cl(1)	90.07(10)		

[a]Symmetrycodes: (#1) 1-x, -y+1,-z+2; (#2) 1-x, -y+1,-z

Table S2.Geometrical parameters for the hydrogen bonding interactions in the crystal structures of compounds **1**-**3**.

Compound	D-H···A	D-H/Å	H···A/Å	D···A/Å	D-H···A/º	Symmetry operation for A
1	N1-H1'···Cl5	0.84	2.25	3.077(3)	167	1+x,y,z
	N3 -H3'···Cl4	0.84	2.32	3.116(3)	158	2+x,y,z
	N4-H4'···Cl5	0.84	2.26	3.038(3)	153	1-x,1-y,1-z
	N5-H5'···Cl2	0.84	2.28	3.098(3)	165	-x,-1/2+y,1/2-z
	C5-H5···Cl5	0.95	2.82	3.579(3)	137	1+x,y,z
	C6-H6···Cl3	0.95	2.75	3.680(4)	168	2+x,y,z
	C7-H7···Cl5	0.95	2.67	3.415(4)	136	1-x,1-y,1-z
	C8-H8···Cl3	0.95	2.71	3.612(3)	160	-x,-1/2+y,1/2-z
	C11-H11···Cl1	0.95	2.82	3.649(3)	147	1-x,1/2+y,1/2-z
	C11-H11···Cl4	0.95	2.65	3.380(3)	134'	1-x,1/2+y,1/2-z
	C13-H13···Cl2	0.95	2.78	3.533(3)	137	1+x,1/2-y,1/2+z
	C16-H16···Cl2	0.95	2.69	3.468(3)	140	x,1/2-y,1/2+z
2	N1-H1'···Cl1	0.84	2.50	3.330(4)	174	-x,-y,1-z
	N3-H3'···O32	0.84	1.88	2.657(5)	155	-1+x,-1+y,z
	N4-H4'···Cl1	0.84	2.432	3.194(3)	151	1+x,y,1+z
	N4-H4'···Cl2	0.84	2.79	3.416(4)	132	1+x,y,1+z
	N5-H5' ···Cl3	0.84	2.35	3.163(4)	162	1-x,1-y,1-z
	O31-H31A···Cl5	0.84	2.38	3.218(3)	175	-x,-y,1-z
	O31-H31B···Cl2	0.84	2.56	3.402(3)	176	1+x,y,z
	O32-H32A···Cl6	0.839	2.325	3.110(3)	156	1-x,1-y,-z
	O32-H32B···Cl4	0.84	2.58	3.319(3)	147	1+x,y,z
	C5-H5···Cl1	0.95	2.79	3.725(4)	167	-x,-y,1-z
	C6-H6···Cl4	0.95	2.57	3.495(4)	164	-x,-y,1-z
	C7-H7···Cl2	0.95	2.74	3.535(5)	142	x, y,x

	C8-H8···Cl3	0.95	2.71	3.619(4)	159	x, y, z
	C10-H10···Cl3	0.95	2.77	3.715(4)	172	1-x,-y,1-z
	C15-H15···Cl5	0.95	2.74	3.529(4)	141	1-x,1-y,1-z
	C12-H12···O31	0.95	2.50	3.033(5)	116	x,y,1+z
	C16-H16···O31	0.95	2.55	3.276(6)	133	1-x,1-y,1-z
3	N1-H1'···Cl1	0.84	2.52	3.344(10)	169	-x,-y,1-z
	N(3)-H3'···O32	0.84	1.88	2.680(14)	160	-1+x,-1+y,z
	N4-H4'···Cl1	0.84	2.46	3.211(10)	149	1+x,y,1+z
	N4-H4'···Cl2	0.84	2.79	3.438(11)	135	1+x,y,1+z
	N5-H5'···Cl3	0.84	2.39	3.187(10)	159	1-x,1-y,1-z
	O3- H31A···Cl5	0.83	2.40	3.230(11)	170	-x,1-y,-z
	O31-H31B···Cl2	0.84	2.65	3.439(11)	158	x, y, z
	O32-H32B···Cl4	0.84	2.60	3.366(8)	153	1-x,1-y,-z
	O32-H32B···Cl4	0.84	2.60	3.366(8)	153	1+x,y,z
	C6-H6···Cl4	0.95	2.59	3.522(14)	166	x,-1+y,z
	C7-H7···Cl2	0.95	2.74	3.528(14)	141	x, y, z
	C8 -H(8)···Cl3	0.95	2.75	3.647(13)	158	x, y z
	C10-H10···Cl3	0.95	2.77	3.715(13)	172	1-x,-y,1-z
	C15-H15···Cl5	0.95	2.75	3.542(13)	142	1-x,1-y,1-z
	C12-H12···O31	0.95	2.51	3.036(17)	115	x,y,1+z

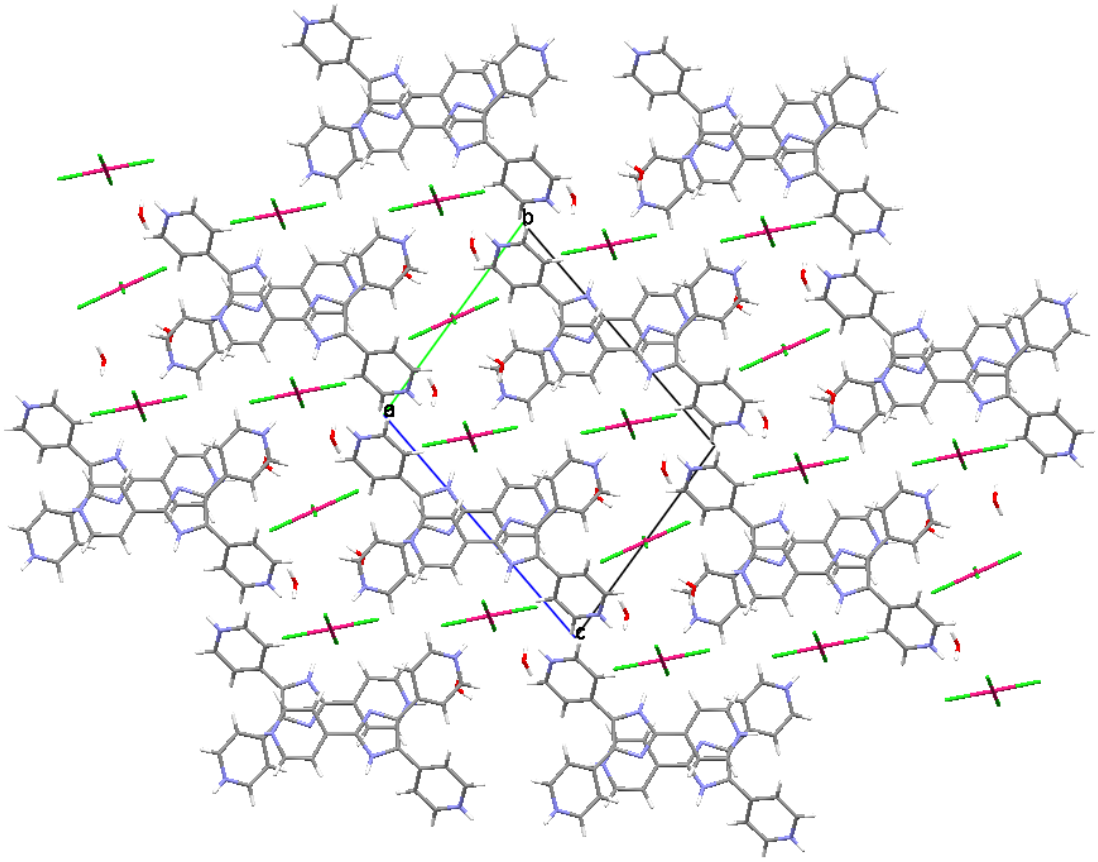

Fig. S4 View of the 3D supramolecular network in **2** and **3**, constructed by C-H···ClPt and N-H···ClPt hydrogen-bonded interactions. All interactions are omitted for clarity.

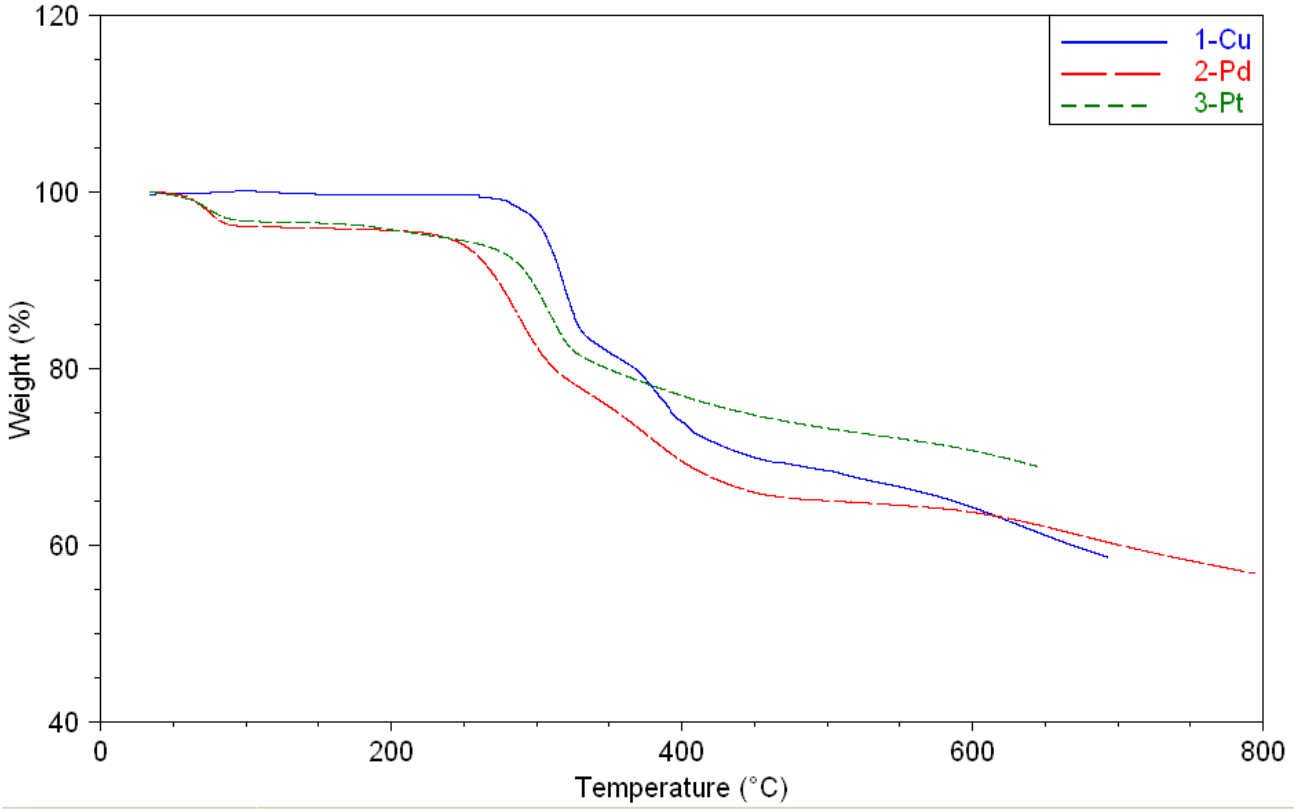

Fig. S5 TGA graphs of compounds 1-3