Entangled 2D Coordination Networks: A General Survey

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Supporting Information

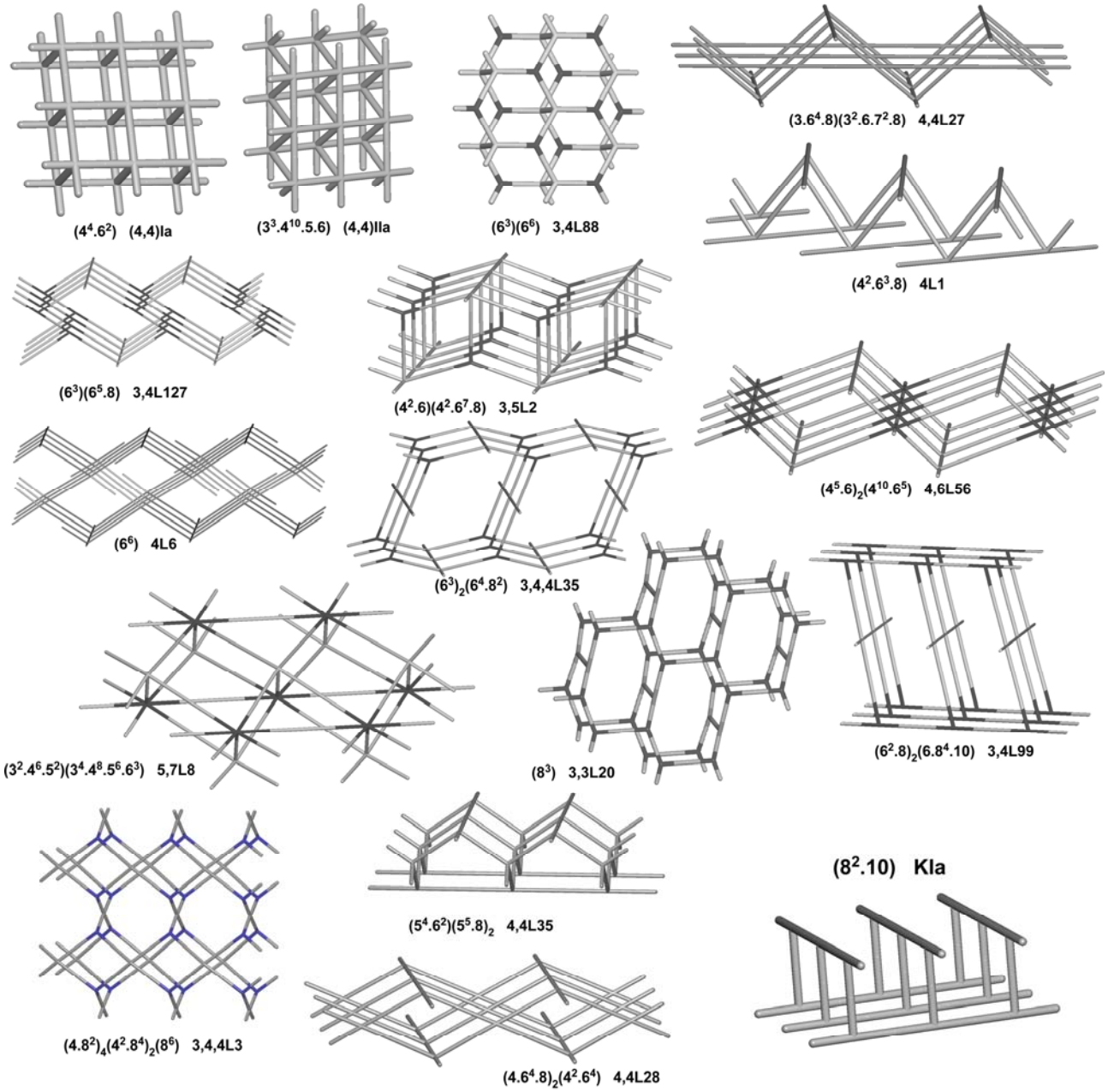


Figure S1 17 thick layers already observed not entangled, see: Mitina, T. G.; Blatov, V. A. *Cryst. Growth Des*. **2013**, *13*, 1655.

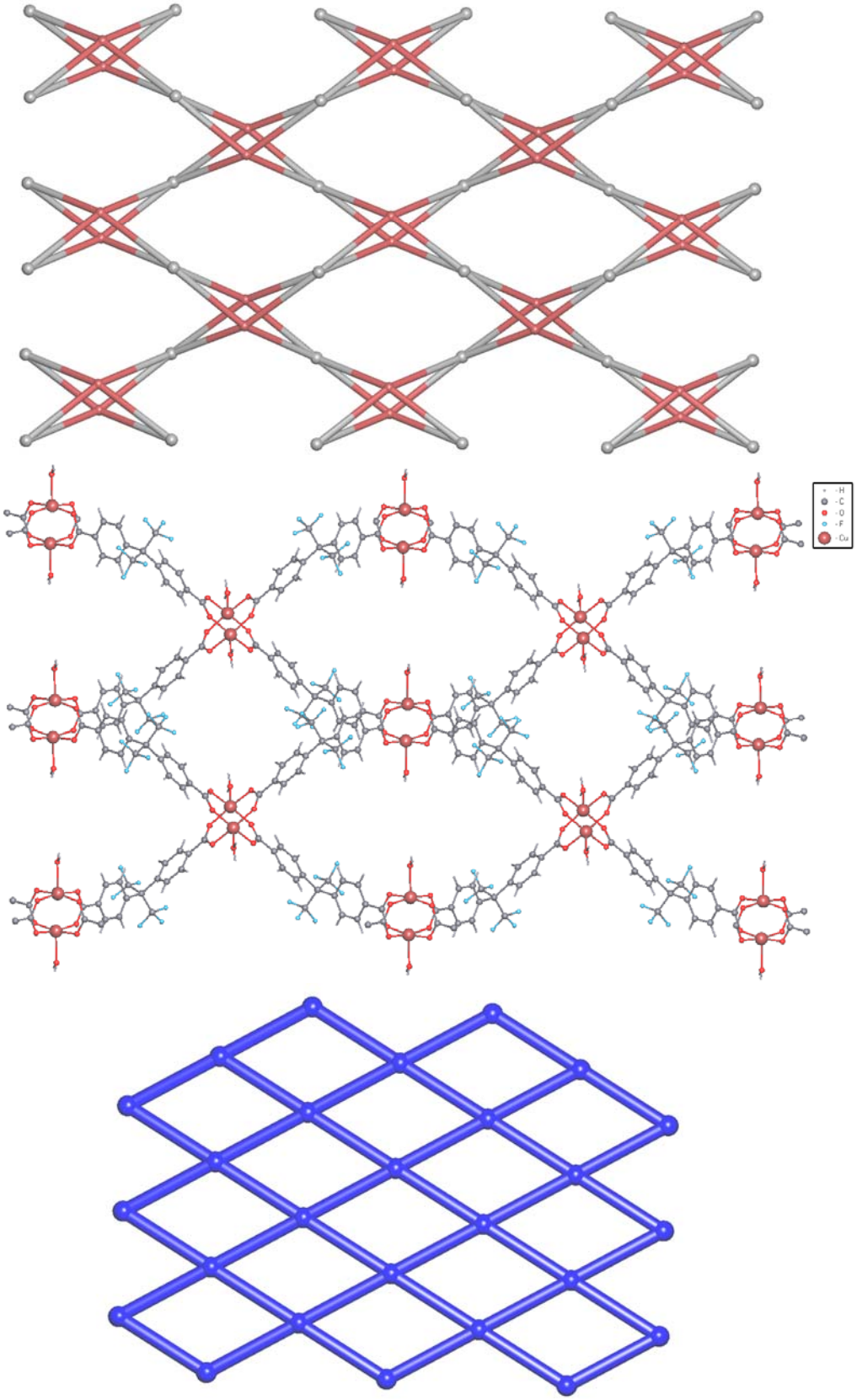


Figure S2 $[Cu_2L_2(H_2O)_2]$ L= 4,4'-(hexafluoroisopropylidene)bis(benzoic acid) [VUKHEP, X.-J. Jiang, S.-Z. Zhang, J.-H. Guo, X.-G. Wang, J.-S. Li, M. Du *CrystEngComm*, **2009**, *11*, 855] with the two possible representation, (top) the "standard" with all the metals as node gives the 4,4L1 and (bottom) the "cluster" with the dimeric Cu paddle-wheels as node gives the **sql** net. In theis work we always give the "cluster" representation when well defined structural building units (SBUs) are present. See also Alexandrov, E.V.; Blatov, V.A.; Kochetkov, A.V.; Proserpio, D.M. *CrystEngComm*, **2011**, *13*, 3947.

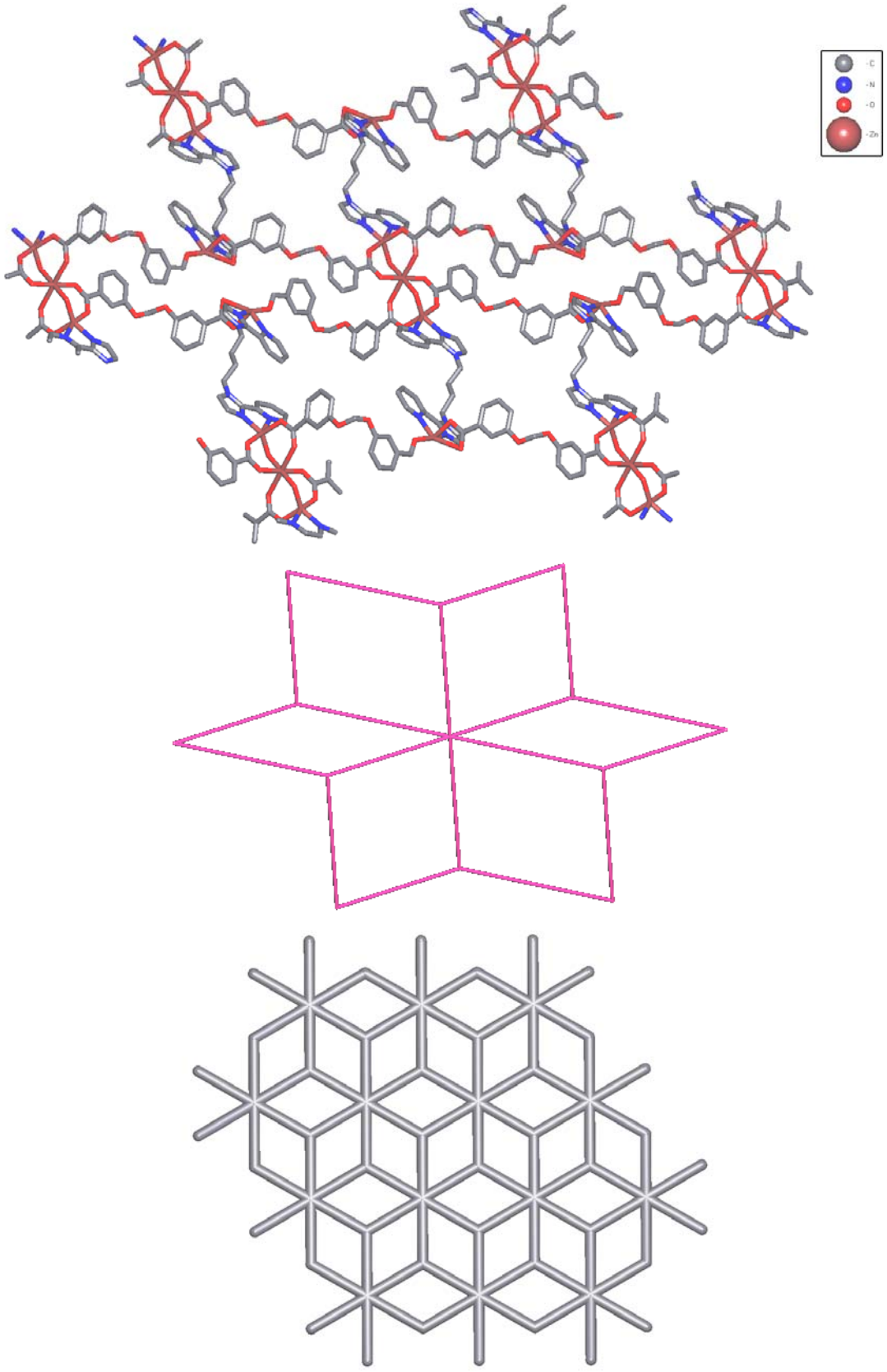


Figure S3 A single **kgd**, observed in the 2-fold interpenetrated TONFUY [$Zn_5(bpib)_2(L)_4(OH)_2(H2O)_2$ bpib = 1,4-bis(2-(pyridin-2-yl)-1*H*-imidazol-1-yl)butane; H_2L = 3,3′-methylenebis(oxy)dibenzoic acid,] (bottom the ideal **kgd** net). Y.-Q. Lan, S.-L. Li, J.-S. Qin, D.-Y. Du, X.-L. Wang, Z.-M. Su, Q. Fu *Inorg. Chem.* **2008**, *47*, 10600

Table S1, distribution of the network topologies among the parallel polycatenation (**PCAT**) entanglement. The nets with (*) are undulated planar (2-periodic 2D) while the others are thick multilayers (2-periodc 3D)

sql*	54 +2 (2-loop)	4,6L56	1
(4,4)Ia	21	4,5L49	1
3,3,4,4L30	8	4,4L59	1
KIa	7	4,4L27	1
3,4L88	7	4,4,4L15	1
hcb*	6	3,4L99	1
3,5L2	4	3,4L89	1
(4,4)IIa	3	3,4L141	1
fes*	2	3,4,4L61	1
4L6	2	3,4,4L35	1
5,7L8	1	3,3L20	1
4L1	1	Total	**127 +2 (2-loop)**

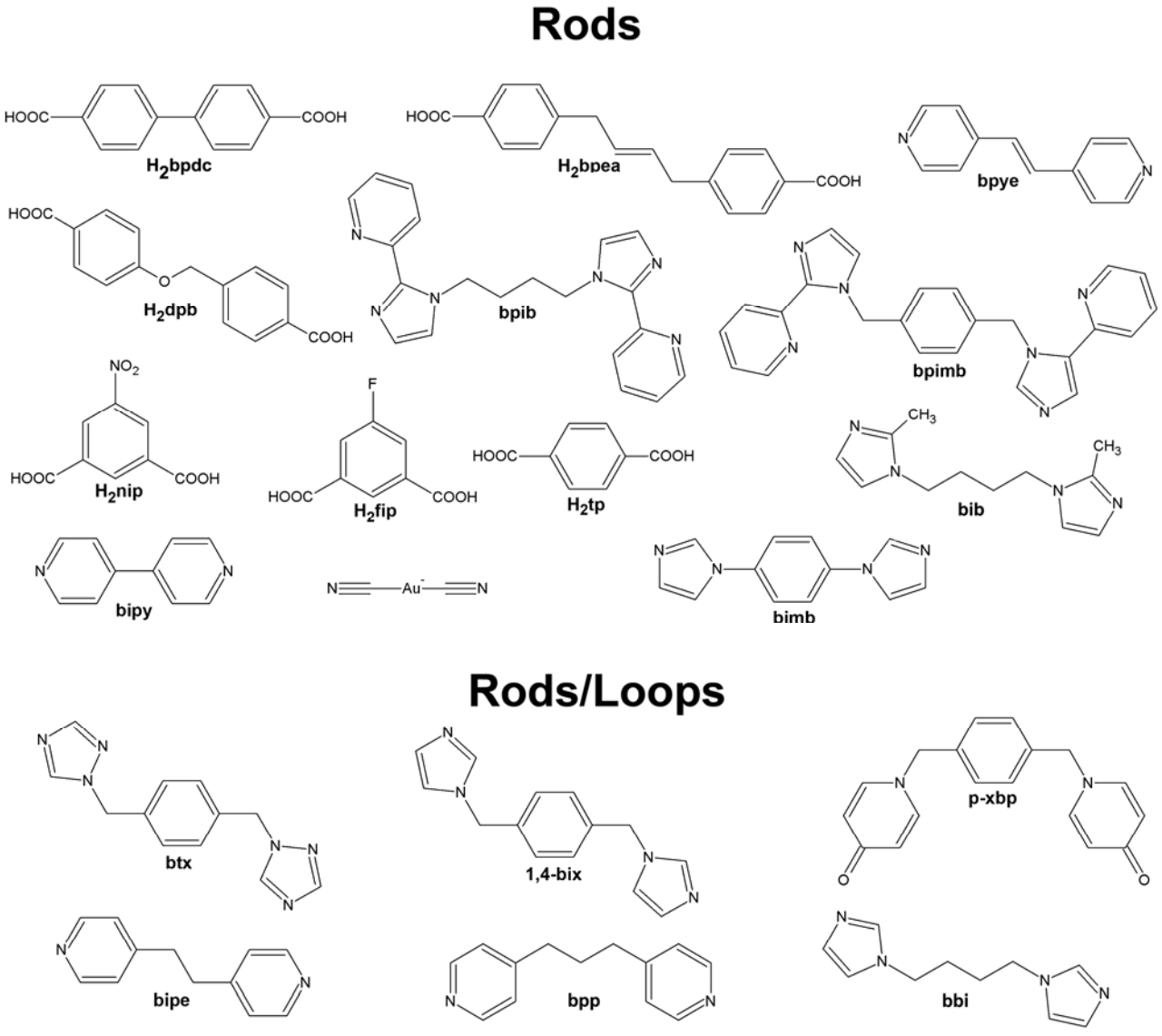
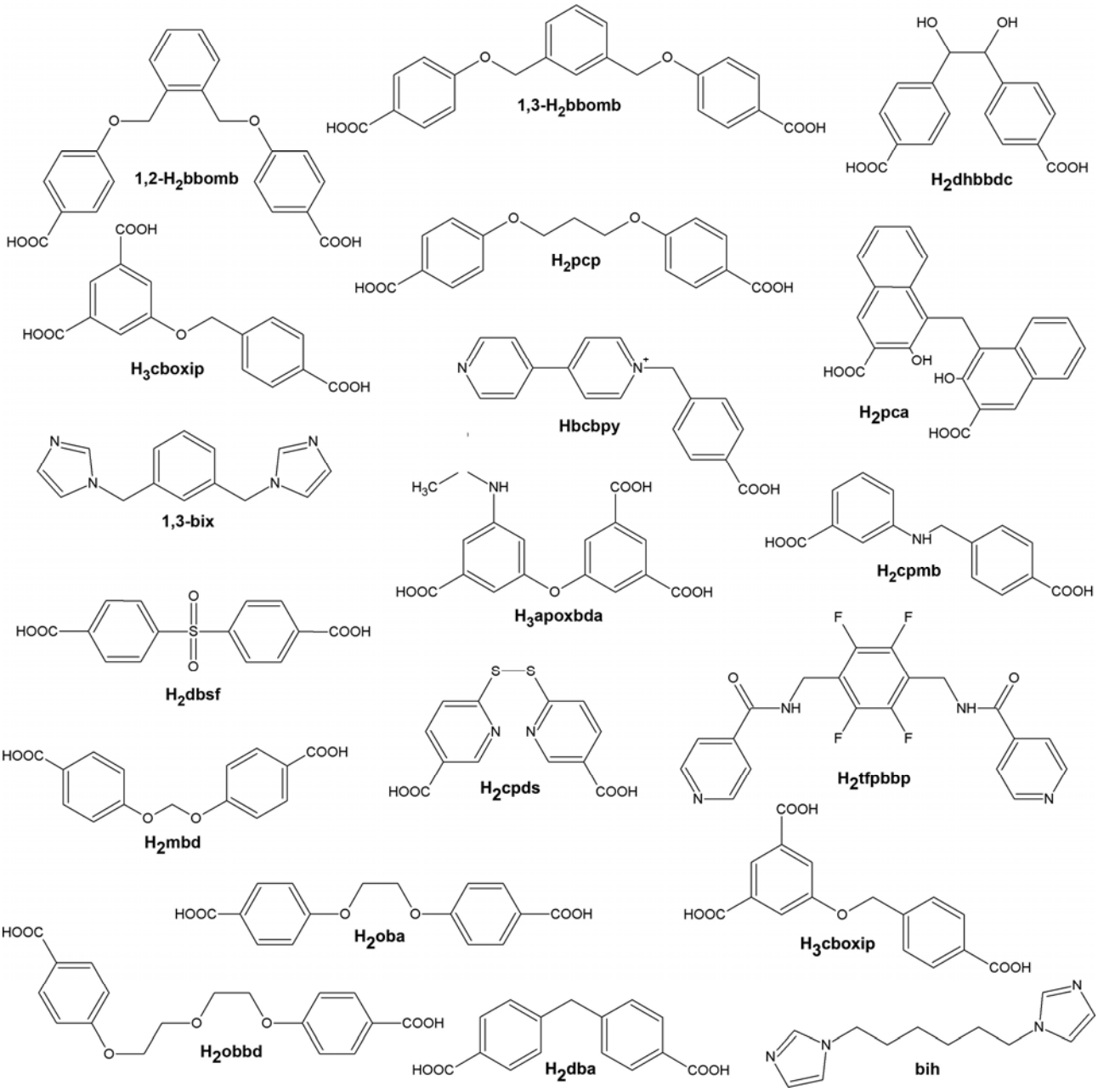


Figure S4 : all the ligands observed in the two-dimensional networks containing 2-loops According to the abbreviation used in table 1. (continue in the next page)

Loops


1,2-H2bbomb
1,3-H2bbomb
H2dhbbdc
H2pcp
H3cboxip
Hbcbpy
H2pca
1,3-bix
H3apoxbda
H2cpmb
H2dbsf
H2cpds
H2tfpbbp
H2mbd
H2oba
H3cboxip
H2obbd
H2dba
bih